
Ernemann
Kino

THE

# ERNEMANN APPARATUS CO.

9, GREAT NEWPORT STREET, W.C.

Telegrams: 7310 CITY. Telegrams: ERNEMANN, WESTRAND, LONDON."

## "Newport" Condenser

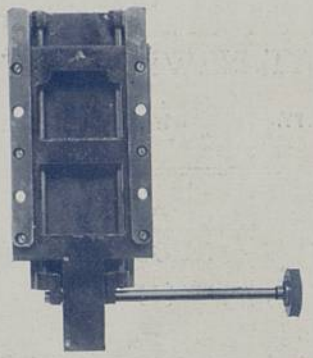
(4½ inch)


This Condenser has an entirely new type of mount, designed to prevent the cracking of glasses and intended for use outside the lamp house. It is of substantial construction, fitted with heavy brass rings, having milled edges and a large-sized thread. It is thus an easy matter to replace glasses in a very few seconds, and cleaning is greatly facilitated. Owing to the heavy construction of the mount, the heat is retained, and the glasses allowed to cool at a normal rate, reducing breakages to a minimum.

### PRICE :

| | £ | s. | d. |
|---|---|---|---|
| Mount only ... ... ... ... ... | 0 | 7 | 6 |
| ,, with meniscus and bi-convex lenses ... | 0 | 14 | 6 |
| ,, with lenses and stirrup handle for "Ernemann" machines ... ... | 1 | 1 | 0 |

# "Newport" Mechanical Tray



AN invaluable addition to your lamp house. With this addition you will be able to centre your lamp with absolute precision—a thing impossible when sliding it to and fro in the ordinary grooves. The exact point at which the very best illumination is obtained may be found almost instantly, and if the lamp is removed for cleaning or adjustment, it may be re-centred without trouble. Well-made, with steel runners, steel rack and pinion, and adjustable steel side-plates.

PRICE ... ... ... ... **£1**

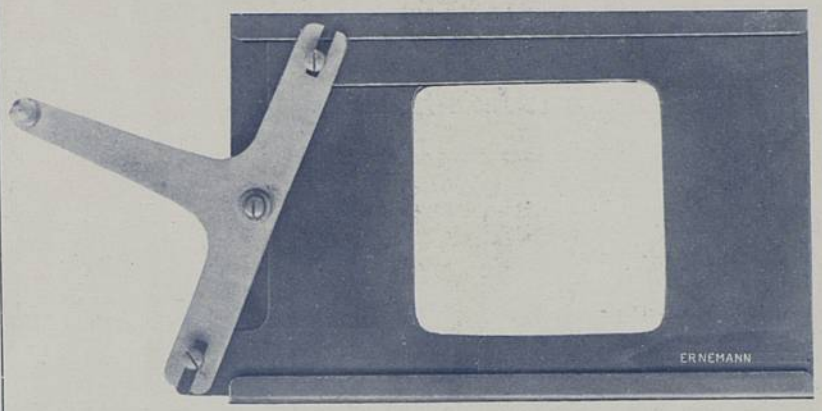
# "Captain" Terminal Block

A USEFUL fitting for attachment to the back of the stand. It takes the loose ends of the mains and connects them up with the lamp leads, making a permanent end to mains. It also takes all the weight of the main cables, and prevents the drag on the lamp which is otherwise unavoidable. Removal of the lamp for cleaning or transferring to another machine is greatly facilitated; all that is necessary being the detaching of two thumbscrews. Mounted on stout black fibre base.

PRICE ... ... ... ... **10s.**

Asbestos-covered Flexible Leads for connecting arc lamps to terminal block, 2 ft. 6 in. long, and carrying 100 amps. ... ... ... per pair **10s.**

# "Newport" Curtain Cut-off




DESIGNED for use in front of condenser. May be easily adapted to any machine. Constructed of stout, heat-resisting Russian iron, with plated handle. Very useful as an emergency hand cut-off.

PRICE, including fitting ... **10s. 6d.**

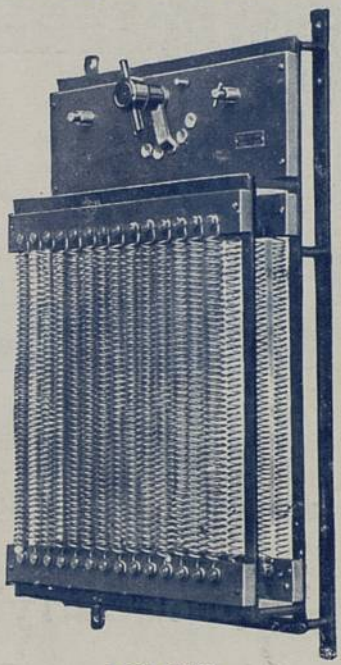
# "Newport" Spool Carrying Cases

CONSTRUCTED of stout Russian iron, rolled edges, strengthened with wire, strong leather carrying handle, plated fittings, and hasps for padlock.


| For 12-in. Spools. | | | For 14-in. Spools. | | |
|---|---|---|---|---|---|
| To hold 3 spools | To hold 4 spools | To hold 6 spools | To hold 3 spools | To hold 4 spools | To hold 6 spools |
| **10/6** | **12/6** | **15/-** | **12/6** | **15/6** | **18/6** |

# "NEWPORT"
# Wall Pattern Resistances

¶ Heavy cast-iron frame, slate bed, finest quality non-rusting wire coils.



Laminated switches, fuse terminals. Best quality throughout.

## PRICES :

| VOLTS | | AMPS. | | EACH £ s. d. |
|---|---|---|---|---|
| 70 | ... | 20 to 50 | .. | 2 10 0 |
| 70 | ... | 20 to 60 | ... | 2 17 6 |
| 70 | ... | 20 to 70 | ... | 3 7 6 |
| 70 | ... | 30 to 80 | ... | 3 15 0 |
| 105 | ... | 20 to 50 | ... | 3 0 0 |
| 105 | ... | 20 to 60 | ... | 3 10 0 |
| 105 | ... | 20 to 70 | ... | 4 0 0 |
| 105 | ... | 30 to 80 | ... | 4 15 0 |

**For CARBONS, PERFUMES, CONDENSER GLASSES, ANNOUNCEMENT PLATES, &c.**

*see separate Leaflets.*

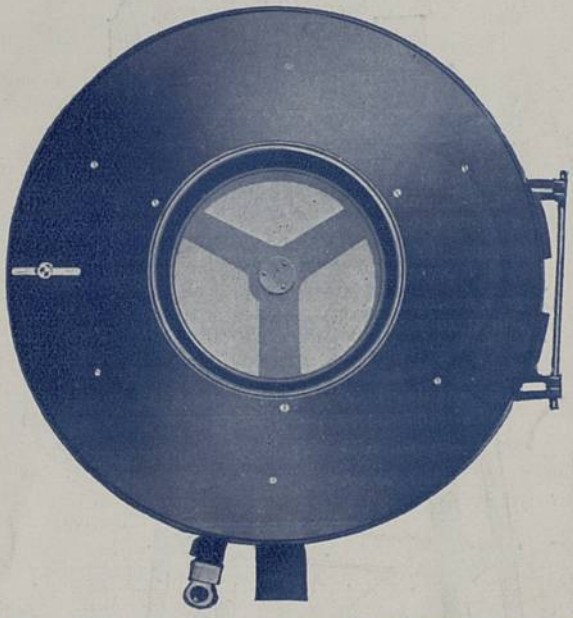
THE

# ERNEMANN APPARATUS CO.

9, GREAT NEWPORT STREET, W.C.

Telephone: 7310 CITY. Telegrams: ERNEMANN, WESTRAND, LONDON.

## The ERNEMANN "BERLIN" SPOOL BOXES.



These boxes have been designed with a double purpose in view.

They are constructed of stout, heat-resisting Russian iron-lined with asbestos and fitted with fire-proof film traps which render ignition of the film practically impossible.

It will be noticed from the above illustration that the centres are fitted with closely-woven gauze. This is absolutely flame-proof and identical with that fitted to miners' hand lamps.

Should, however, the film become ignited, this gauze provides an outlet for the heated gas which otherwise might cause a very serious explosion if confined.

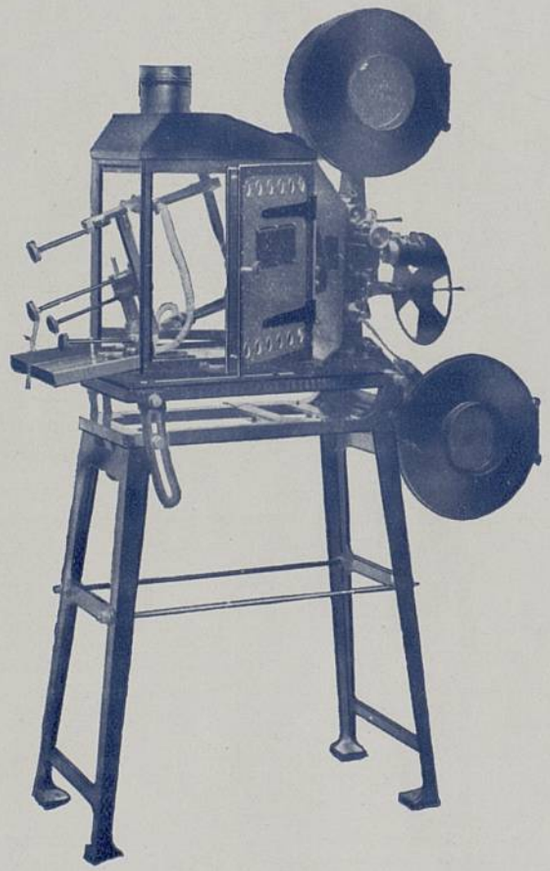
The second purpose of the gauze is to enable the operator to see when he is getting near the end of his film without employing the common and somewhat dangerous expedient of opening the top spool box.

The extra cost of "Berlin" spool boxes if supplied with Imperator outfits instead of Standard pattern is

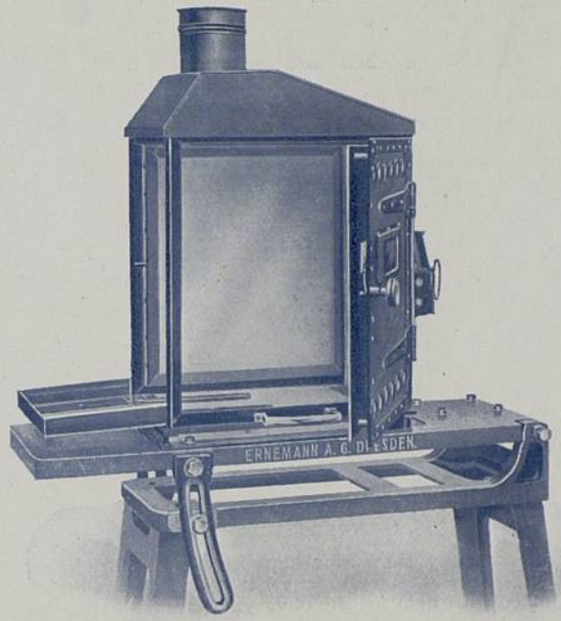
**£2 0 0** per Pair.

# The ERNEMANN

## "BERLIN" LAMP HOUSE.



Showing door on operating side partially open and arc lamp in position, also tray for receiving burnt carbon ends.




The " Berlin " lamp house is of entirely new design, specially constructed to facilitate removing or adjusting the arc lamp, also insulated in such a manner that there is a constant circulation of air between the double walls aided by the large draught-cowl. This results in the lamp house being kept much cooler and greatly reduces the risk of broken condensers.

The inside walls are of strong sheet iron lined with the very best asbestos.

The sight-hole is fitted with deep red " pot metal " glass, which allows the arc to be viewed without discomfort to the eyes.

The above illustration shows the lamp house with one door partially open, and indicates the ease with which the lamp may be handled for re-carboning, etc.

It also shows the double walls on the three sides (the top is also double throughout), and the tray into which burnt carbon ends may be swept until cool enough to be removed.

A new pattern divided asbestos curtain is fitted.

The extra cost of the " Berlin " lamp house if supplied with " Imperator " outfits instead of the standard lamp house is

**£2 0 0**

# The ERNEMANN
## HEAT DETRACTOR.


This useful accessory should be kept in every up-to-date operating box. It consists of a flat metal plate having a circular opening 2¾ in. in diameter, fitted with 3 gauze discs of varying gauges.

This contrivance enables practically the whole of the light rays to pass, while absorbing all the heat rays.

If therefore it is desired to examine a single picture at length or to lecture on or demonstrate any particular point, all that is necessary is to insert the heat detractor in the slide carrier, and draw it in front of the condenser.

It is then possible to hold any single picture quite stationary in the gate for a period of some minutes without the slightest danger of fire.

Price, neatly finished in fire-proof black lacquer, **7/6**

*N.B.—Will fit any standard lantern slide carrier.*

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# The ERNEMANN
## FILM SILENCERS.

**FOR FIRST RUN FILM.**

These fit on the gate and ensure absolute silence with first run film, which in the ordinary way is apt to be noisy.

They are supplied free of charge with the latest "Imperator" projectors.

*Can be fitted by anyone.*

# Heinrich Ernemann A.G.

Photo-Kino-Werke Optische Anstalt

# Dresden-A.

## Der erzieherische Wert der Kinematographie für Schule und Haus

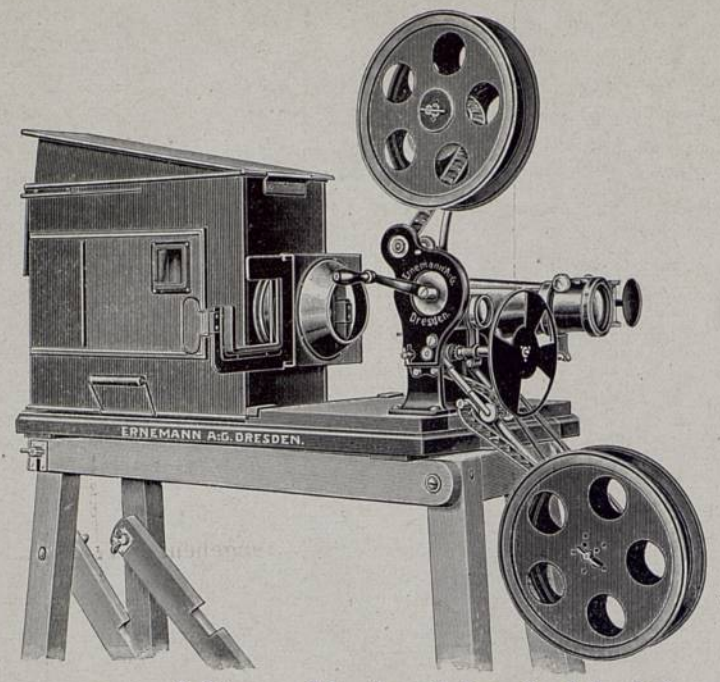
Die überraschende Entwicklung und die ungeheure Verbreitung, die die Kinematographie im letzten Jahrzehnt erfahren hat, ist nicht ohne Einfluß auf Schule und Familie geblieben. Gegner und Freunde erstanden dem lebenden Bild. — Die ersteren verstummen allmählich, da die Film-Industrie ernstlich bestrebt ist, alle Angriffspunkte zu beseitigen, der Freunde und begeisterten Anhänger aber, die erkannt haben, welche hohe erzieherische Bedeutung dem lebenden Bild innewohnt, werden es von Tag zu Tag mehr. — Schon haben sich Wissenschaft, Technik und Industrie die Kinematographie dienstbar gemacht, und nur eine Frage der Zeit ist es, da wird jedes Institut, jedes Krankenhaus, jeder Verein und vor allem jede Schule einen eigenen Vorführungs-Apparat besitzen, denn tausendmal eindringlicher, überzeugender und besser als Worte ist das lebende Bild imstande, uns mit Geschehnissen, Ländern und Völkern, Naturwundern wie Studienresultaten vertraut zu machen. — Unseren Kindern wird das Lernen leichter und angenehmer gemacht werden; sie werden es nicht mehr nötig haben, sich in der Geographie und der Naturgeschichte unlustig mit leeren Zahlen zu quälen, die doch nur gern und schnell wieder vergessen werden. —

Man wird den Saal verdunkeln, und vor den frischen und empfänglichen Kinderaugen werden sich Länder-, Völker- und Sittenbilder lebendig und greifbar abspielen und die Wunder der Tier- und Pflanzenwelt offenbaren! — Ein Genuß, so zu lernen! — Wer wird so tiefe Eindrücke je vergessen?

Wer nur irgend in der Lage dazu ist, der soll der Zeit vorauseilen und schon heute seinen Kindern diesen Genuß eigener Kinovorführungen bereiten. Sie werden auch in späteren Jahren gern und dankbar an die schöne Zeit zurückdenken, als sie die Welt in lebenden Bildern bereisten, fremde Länder und Völker kennen lernten, wie es früher nur auf langen, teuren und gefahrvollen Reisen möglich war, ihren geistigen Horizont erweiterten, mit einem Wort spielend lernten. —

In nachstehendem sind zwei besonders empfehlenswerte Apparate besprochen, die, obgleich speziell für Familien- und Schulgebrauch konstruiert und demgemäß billig im Preise, sich, was Präzision der Konstruktion anbelangt, in keiner Weise von großen Theater-Apparaten unterscheiden, und die mit den von anderer Seite in den Handel gebrachten billigen Spielwaren-Kinos nicht verglichen werden dürfen. Für die Ernemann-Projektoren kommt als Filmtransport nur das Malteserkreuz in Frage, während andere, für Amateurzwecke konstruierte Apparate fast ausschließlich Schlägermodelle sind, die nicht entfernt ein so vorzügliches Stehen der Bilder gewährleisten, wie die Ernemann-Projektoren.

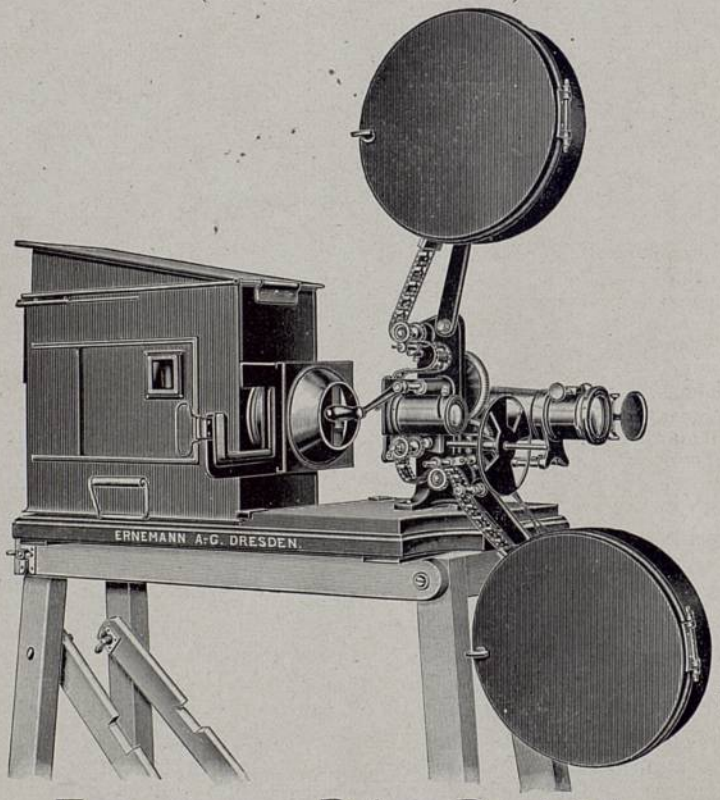
Nr. 283 M 10. 11. 13. Sch.




Klischee 493

# Ernemann Kino-Bob Mod. X Normal

(für Theater-Normal-Film)




Klischee 492

# Ernemann Prinz-Projektor

(für Theater-Normal-Film)

Einzige höchste Auszeichnung für Projektoren:
**Goldene Große Medaille**
Internationale Kinoausstellung Wien 1912

## Ernemann Familien-Normal-Kino

Der Ernemann Familien-Normal-Kino ist ein speziell für Amateurzwecke konstruierter, vereinfachter Präzisions-Malteserkreuz-Projektor, der sehr gut stehende, flimmerfreie und brillante Bilder gibt. — Die Bedienung ist außerordentlich einfach und erfordert keinerlei Vorkenntnisse. — Der Mechanismus ruht auf einem massiven, gußeisernen Bock, alle Wellen und Zahnräder sind aus bestem Material hergestellt. Der Filmtransport erfolgt mittels Präzisions-Malteserkreuz. Der Film wird durch eine Tür eingelegt, so daß auch endlose Bilder Verwendung finden können. — Der Apparat besitzt eine sehr gute Bildverstellung! Das Laternengehäuse besteht aus bestem russischen Blaublech, hat Tür mit Beobachtungsglas und vorzügliche Ventilationseinrichtung. Der Kondensor läßt sich behufs Reinigung herausnehmen.

Der Ernemann Familien-Normal-Kino kann auch mit einer Diapositiveinrichtung versehen als

## Ernemann Kino-Bob Modell X Normal

geliefert werden. — Die Einrichtung zur Vorführung stehender Bilder (Diapositive 8½×8½ cm) ist mit dem Kinowerk auf eine gemeinschaftliche Grundplatte montiert; durch einfaches Verschieben des Lampengehäuses erfolgt der Wechsel von Projektion lebender zu Projektion fester Bilder. Mit dem Ernemann Kino-Bob lassen sich auch Laterna-magica-Bilder projizieren!

## Ernemann Prinz-Projektor

Der Ernemann Prinz-Projektor ist der vollendetste Projektor für wissenschaftliche Institute, Schulen, Vereine und Amateure, die höchste Ansprüche stellen. — Der Apparat, der nach dem gleichen Prinzip wie unser Theater-Projektor gebaut ist, gibt hervorragende, flimmerfreie, vorzüglich stehende Bilder, die denen der Theater-Kinematographen in nichts nachstehen. — Die Ausstattung ist annähernd die gleiche wie bei dem vorher beschriebenen Ernemann Familien-Normal-Kino, nur wird der Film nicht wie bei diesem Modell über eine Wippe, sondern über eine Nachwicklertrommel geführt, die ein ganz besonders präzises Stehen der Bilder gewährleistet.

Auch dieser Projektor kann mit einer Einrichtung zur Vorführung fester Projektions-Bilder im Format 8½×8½ cm als

## Ernemann Prinz-Projektor mit Dia-Einrichtung

geliefert werden. Der Wechsel von Projektion lebender zu Projektion fester Bilder geschieht durch seitliches Verschieben des Laternengehäuses.

Jedem Apparat wird eine ausführliche; auch über die Art und Anwendung der verschiedenen Lichtquellen Aufschluß gebende Gebrauchsanweisung beigefügt.

**Preise:**

| Nr. | Ausstattung | Mark ohne Feuerschutztrommeln | Mark mit Feuerschutztrommeln | |
|---|---|---|---|---|
| 338 | **Ernemann Familien-Normal-Kino komplett,** mit 2 festen und 1 zerlegbaren Filmspule, sowie Laternengehäuse . Ohne Lichtquelle | 120.— | 160.— | C |
| 340 | **Ernemann Kino-Bob Modell X Normal,** wie oben, aber außerdem noch mit Diapositiveinrichtung (Laternengehäuse mit 115 mm Kondensor) zur Projektion von Diapositiven 8½×8½ cm und Laterna-magica-Bildern. Doppelt. Bilderschieber Ohne Lichtquelle | 180.— | 220.— | C |
| 342 | **Ernemann Prinz-Projektor** mit Laternengehäuse, 2 festen und 1 zerlegbaren Filmspule . . . . . Ohne Lichtquelle | 160.— | 200.— | C |
| 343 | **Ernemann Prinz-Projektor mit Dia-Einrichtung,** wie oben, aber außerdem noch mit Einrichtung zur Projektion von Diapositiven 8½×8½ cm und Laterna-magica-Bildern. Doppelter Bilderschieber . . . . . Ohne Lichtquelle | 220.— | 260.— | C |
| | **Zubehör:** | | | |
| | Elektrische Bogenlampe, an Glühbirnenfassung anzuschrauben, mit Anschlußlitze und 2 Paar Kohlen, komplett | | | |
| 641 | mit Widerstand für 110 Volt Spannung . . . . . | 40.— | | C |
| 642 | mit Widerstand für 220 Volt Spannung . . . . . | 50.— | | C |
| 637 | Sauerstoff-Kalklicht-Einrichtung komplett mit Brenner, Reduzierventil, Gasolindose, Manometer und Gummischlauch . . . . . | 120.— | | E |
| 335a | 2 Feuerschutztrommeln komplett . . . . . | 40.— | | C |
| 328 | 1 Filmwickler (zum bequemen und schnellen Umspulen der Films) | 8.50 | | C |
| 329 | 1 feste Filmspule extra . . . . . | 2.50 | | C |
| 357 | 1 starker Projektionstisch, zusammenlegbar . . . . . | 45.— | | C |
| 345 | Transportkoffer, äußerst praktisch, sehr kräftig gearbeitet, verschließbar, mit Traggriff . . . . . | 16.— | | C |
| 346 | Auffangschirm, zusammenlegbar, für Bildbreite 1,5 m . . . . . | 12.— | | E |
| 346a | Auffangschirm, zusammenlegbar, für Bildbreite 2,5 m . . . . . | 24.— | | E |
| | Positivfilm (lt. rückseitiger Spezialliste) per Meter . . . . . | 1.20 | | E |
| | Gebrauchte Films je nach Grad der Abnutzung per Meter von . | —.20 an | | E |

Einzige höchste Auszeichnung für Projektoren:
**Medaille der Stadt Berlin**
Kinoausstellung Berlin 1912

# Besonders zu empfehlende Normal-Films

## (Vierloch-Edison-Perforierung):

Längen: m

**Tierbilder aus dem Zoologischen Garten:**

1n. a) Pelikan . . . . . 5
2n. b) Flamingo . . . . . 6, 12
3n. c) Störche . . . . . 4—8,5
4n. d) Seehund . . . . . 5
5n. e) Lama mit Jungen . . . . . 8,5
6n. f) Giraffen . . . . . 7, 15, 22
7n. g) Marabu . . . . . 3, 6, 12
8n. h) Hirsche . . . . . 6
9n. i) Hirschkopf (Detailstudie) . . . 5
10n. k) Kamel . . . . . 6,5
11n. **Gondelfahrt auf dem Parksee** . 5, 15
12n. **Großmütterchen will nähen** (Prächtiger Charakterkopf) . . . 10
13n. **Großvater raucht sein Pfeifchen** (Charakterkopf) . . . . 5, 10
14n. **Max und Moritz und der Gärtner** 20
15n. **Max und Moritz bei Onkel u. Tante** 27
16n. **Max und Moritz bei der Tante** . . 6
17n. **Max u. Moritz beim Kaffeeklatsch** 9,5

**Leben beim Militär:**

18n. a) Hindernisbahn . . . . . 6, 12
19n. b) Gewehrreinigen . . . . . 8, 13,5
20n. c) Sachen waschen . . . . 5, 10
21n. d) Kartoffelschälen . . . . . 5, 12
22n. e) Frühstück . . . . . 5,5 11
23n. f) Schwimmübungen der Kavallerie mit Pferden . . 5, 10, 15—100
24n. g) Auf dem Schießstand . . . . 3, 7
25n. h) Einzelmarsch . . . . . 3—15
26n. i) Bajonettfechten . . . . . 5—8
27n. k) Beim Rasieren . . . . . 10—25
28n. l) Pioniere schlagen eine Brücke . . . . . 10—30
29n. m) Kleiderklopfen . . . . . 5—10
30n. **Sprengung eines Fabrik-Schornsteines durch Pioniere** . . . 11
31n. **Ablösen der Schloßwache** . . 12—20
32n. **Königs-Parade** . . . . . 5, 10, 30
33n. **Eine Fahrt durch die in Abbruch befindliche alte Augustusbrücke in Dresden** . . . . . 15
34n. **Preisreiten** . . . . . 5, 10, 20
35n. **Preisfahren** . . . . . 5, 10, 20
36n. **Kinder in der Hängematte** . . . 3, 6
37n. **Spielende Kinder a. d. Elbe** 5, 10, 11
38n. **Vor dem Kasperle-Theater** (Kinder-Charakter-Studie) . . . 5—15
39n. **Bilz-Licht- u. Luft-Bad** 5, 10, 15—182
40n. **Carnevals-Rodeln** (Humoristisches Winter-Sport-Bild) 3, 5, 10—60
41n. **Stapellauf eines Flußdampfers** 10—25
42n. **Eine Elbfahrt durch Meißen** . 10—15
43n. **Fischer beim Netzstricken** . . . . 8
44n. **Bestrafte Neugier** (Ein unerlaubter Blick ins Damenbad und seine Folgen) . . . . . 10, 23

Längen: m

45n. **Der verfolgte Ehemann** (oder „Das unfreiwillige Bad") . . . . 12

**Bilder aus der Sächsischen Schweiz** (Elbfahrt durch das Sandstein-Gebirge):

46n. a) Pirna . . . . . 10—15
47n. b) Wehlen . . . . . 6—15
48n. c) Schandau . . . . . 6—12
49n. d) Herrnskretschen . . . . . 10
50n. e) Aussig . . . . . 10, 15
51n. f) Fahrt mit der Straßenbahn von Schandau nach dem Wasserfall . . . . . 10—20
52n. g) Kahnfahrt durch die romantische Edmundsklamm . . . . 6—20
53n. **Bergsport** (Ersteigen eines Felsens) . . . . 5, 15, 25—50

**Polizeihund-Prüfung** (Polizeihund Harras):

54n. a) Apportieren . . . . . 6
55n. b) Erklettern einer Leiter . 5, 10, 15
56n. c) Tauchen in ein Faß Wasser . . 5
57n. d) Erklettern einer 3 Meter hohen Wand . . . . . 3, 5

**Der Parseval-Ballon:**

58n. a) Abfahrt . . . . . 8, 15
59n. b) Im Fluge . . . . . 5, 10, 15
60n. c) Landung . . . . . 12

**Phantastische Films** (für Kinder):

61n. a) Die lebende Puppe . . . 3,5, 5
62n. b) Teddy-Bär und Puppe . . . . 5
63n. c) Der lebende Baukasten . . . 13
64n. d) Die geheimnisvolle Spielzeugschachtel . . . . . 17

**Bilder vom Wintersportfest im Gebirge:**

65n. a) Rodeln . . . . . 3, 5, 10, 60
66n. b) Bobsleighfahren . . . . . 6,5—15
67n. c) Kinder gehen zum Schneeschuhstart . . . . . 5, 15
68n. d) Am Start . . . . . 5—10
69n. e) Am Ziel . . . . . 5, 10, 30
70n. f) Militärpatrouille auf Skier 6, 12, 33
71n. g) Ski-Hochsprung . . . . . 10
72n. **Tiroler Schuhplattler** . . 3, 5, 10, 15
73n. **Potpourri** (4 verschiedene Tänze) je . . . . . 5, 10, 15
74n. **Cakewalk** (interessantes Tanzbild) . . . . . 5, 10, 15
75n. **Walzer** . . . . . 3—46
76n. **Erblühen einer „Viktoria Regia"** (wundervolles Naturbild) . . 32
77n. **Erblühen einer „Königin der Nacht"** (wundervolles Naturbild) . . 17

## Weitere Films auf Anfrage.

**Preis pro m Mark 1.20.** E

Internationale Kinematographen-Ausstellung London 1913:
**Ehrendiplom und große goldene Medaille**

# ERNEMANN'S KINEMATOGRAPH AND ACCESSORY

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Trade Mark

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Photo-Kino-Works, Optical Institute





# Preface

**The Ernemann "Imperator" Projector** is not a new machine, but is a machine, the design of which has been gradually matured during several years of practical experience, and has embodied in it all the real improvements that have been added to other machines from time to time, the collation of these various desiderata in a Projector has been carried out by an expert of great experience; being built in the largest, and most completely equipped factory in the world where every part from the smallest Pin to the Castings, from the Maltese Cross, to the Lens is made under the direction of one man; the **Ernemann "Imperator" Projector** is not a piece of machinery assembled from various parts, but every part of the machine is designed with a view to its co-operation with the other parts of the machine, and it is only by this that the perfect running, wearing and silence of the machine is obtained in combination with a steady, flickerless picture.

**Steel and iron** form the basis of the **"Imperator".** All Sprockets, Pressure Rollers, the Maltese Cross, the Cog Wheels, the Shafts are all made of the best "ATLAS" and "SILVER" Steels, while the skates are of hardened Tool Steel. The Main Body is of Cast Iron, the only other Metal employed is the hardened Phosphor Bronze of the Bearings. Thus the **Steel "Imperator"** is the strongest and the most durable machine existing.

## We claim

**The most absolute steadiness of the picture.**
**Flickerless projection.**
**Preservation of the film.**
**Perfect stability.**
**The least possible noise.**
**Exceptional wearing qualities.**

The perfect running and silence in working are qualities obtained by a scientific knowledge of the properties of metals and their wearing relations to each other, together with the application of recognised mechanical laws in the designing not only of the moving parts, but of the hardly less important solid parts of the machine.

**Steadiness of the Picture** is again due to the application of careful and precise fitting and adjusting of the various sprockets and channels which pass the film on its way, no less than to the **large size Maltese Cross** which gives a quicker pull to the film and thus permits of a small cut-off blade to the fan, consequently reducing flicker to practically nil.

In the following pages the various parts of the machine are described in detail, and we feel sure that a careful perusal of this booklet will decide the reader that this machine is well worth consideration and examination before proceeding to equip his theatre.

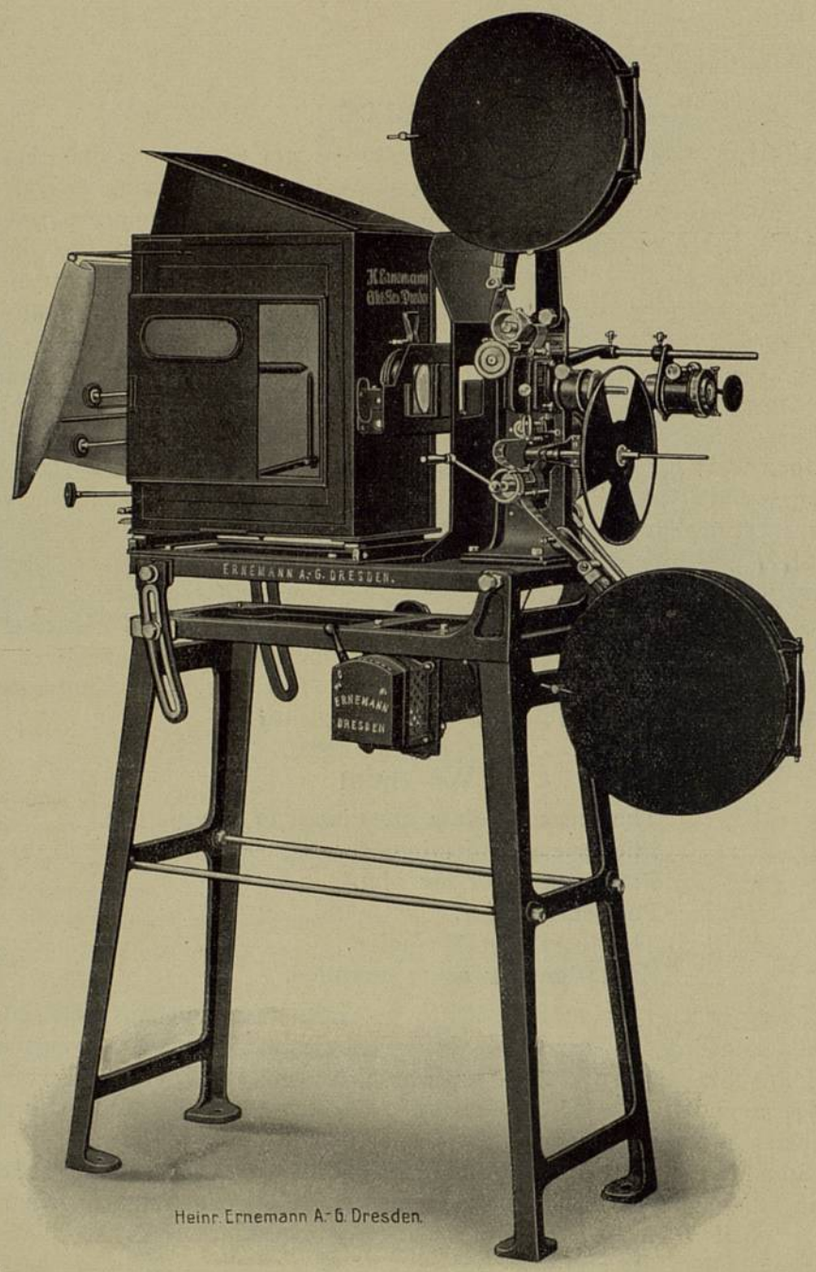


Fig. 1

914

# The Ernemann "Imperator" Projector

with Fireboxes, Lamphouse, Lantern Slide Projector etc.





## The Ernemann "Imperator" Projector

The machine can be supplied in two styles either as a kinematograph Picture Projector only, or as a combined kinematograph Picture and Lantern Slide Projector.

**The kinematograph Projector.** This, being the most important part of the whole outfit, is described first, it consists of a massive Cast-Iron Body which is bolted to the bedplate, the weight and special design of this body are well calculated to reduce vibration to a minimum, a point of no small importance seeing that the whole of the working parts of the machinery are fitted to this body.

We now have to consider the auxiliary parts, first.

### The Maltese Cross Movement

A specially tempered **Maltese Cross** of exceptionally large size, being no less than $2^1/_8$ in. in diameter from point to point, is fitted on to a shaft which is held in a 5" bearing, the Cross thus runs with exceptional smoothness, besides which, it is actuated by a Cam and Pin, the Pin being fitted with a hardened Steel Roller which ensures a prolonged life to the Cross, and easy working, and again Silence, while the long leverage obtained by the big cross imparts a more rapid movement of the picture in the Gate, and at the same time exerts a more gentle pull on the Film at the start of its movement and avoids all jerkiness; this is one of the prime causes of the flickerless Picture obtained with the **Ernemann "Imperator" Projector,** and is the reason why films passed through this Projector are not worn and torn at the perforations as they would be with the movement that is more sharp and sudden as with the smaller crosses.

### The Masking Device and Constant Optical Axis

The present Imperator has one supreme advantage over the old 1910—1911 pattern, in the masking device, whereby the straight line from arc to lens is preserved; once the Light, the Gate, the Condenser, and the Lens are centred in one straight line, it is not altered by the masking of the film. The back-window is a fixed point, its centre being exactly central with the centres of the lens, and of Condenser, and when masking, the sliding body of the Gate is racked up and down and carries the film with it, the sliding body is carried on prisms in spring fittings with screws to take up wear, it receives support from a strong spiral spring and cannot shift up or down without the rack and pinion being actuated; this rack is a broad deeply cut one and is very powerful.

**We centre the mechanical parts, it only remains for the operator to bring his light into line.**

A large disc of light on the gate is unnecessary.

The central direct and most powerful rays of the light alone are used.

Racking up or down does not bring the Gate into the marginal colours. "Rainbows" are things of the past.

**Less current is consumed because a smaller disc. is wanted.**

**The Arc does not require centring every time the film requires masking.**

The fitting is so fitted and so stout that vibration is impossible, the Jacket slides to and fro on a projecting spindle, so that, within reason, lenses of any focus can be employed.

### The Shutter

The shutter is a circular one with three blades, of which one masks the moving film and the other two balance the light, these shutters are fixed to a Boss on the shaft by three set screws, which enable the shutter to be instantly adjusted to the movement of the Driving Sprocket, it is thus not necessary to fiddle about with the Gears and Shaft to obtain the correct position. A new fan of highly compressed pulp is now fitted, this has the advantage of removing all backlash on the bevels, it is easily put straight if accidently bent and reduces the wear and tear all over the mechanism, it is the simplest but most important improvement we have added for sometime.

### The Lenses

As before stated the lenses are made throughout in the Optical Department of **Ernemanns own Factory** and are **Kino Stigmats** giving perfect definition all over the screen and passing an enormous quantity of light.

Although in deference to our clients wishes we are now supplyng jackets to take the usual small Lens or the 2" lenses; it must be borne in mind that how ever big the Lens may be, it cannot pass more light than comes through the film-gate, so there is really no advantage in a lens of larger diameter.

In either case the Lens slides into its jacket and is immediately interchangeable with one of longer or shorter focus.

### The Ernemann Pro-Anastigmat

In addition to the usual lenses, we are now making an Anastigmat Projection Lens which is supplied for any focus from $1^1/_4$ to 8 inches. This is the most highly corrected lens made for projection.

It gives a exceptionally sharp picture from corner to corner with extraordinary detail and a marked stereoscopic effect, and for short throws we cannot recommend it too highly.

The price is 80/—. or 50/— extra if taken with a machine instead of the usual lens.

### The Oil Bath

Is hermetically sealed and is fitted with an oil Gauge-Glass, this will not require frequent attention, a little new oil about once a week being all that is required.

**Only the Special Oils supplied by the Company should be used.** "A" Oil for the Bearings, "B" for the Bath, a trace of "B" may be occasionally supplied to the various gear wheels.

### The Gate

The Gate in the "Imperator" is so fitted that it opens in front of the Main Casting, towards the Lens; thus being to a great extent shielded from the great heat from the Condenser, this keeps the Gate cool, and makes its parts more readily adjustable. Indeed they can be adjusted while the machine is running. The Skates are of a great length, made of a specially hardened Tool-Steel with burnished surfaces, the wear on these Skates is exceptionally slight,





and by means of the Pressure Plates, which swing on a single Spindle at the top and bottom of the Skates, an absolutely even pressure is obtained at the extreme edges of the whole of the film that is in the Gate, these Gates are very sensitive to irregular thickness of film and adjust themselves immediately; the pressure is obtained by means of a thumb screw and spiral spring on each of the spindles. Where necessary the Gate permits the use of very short focus lenses.

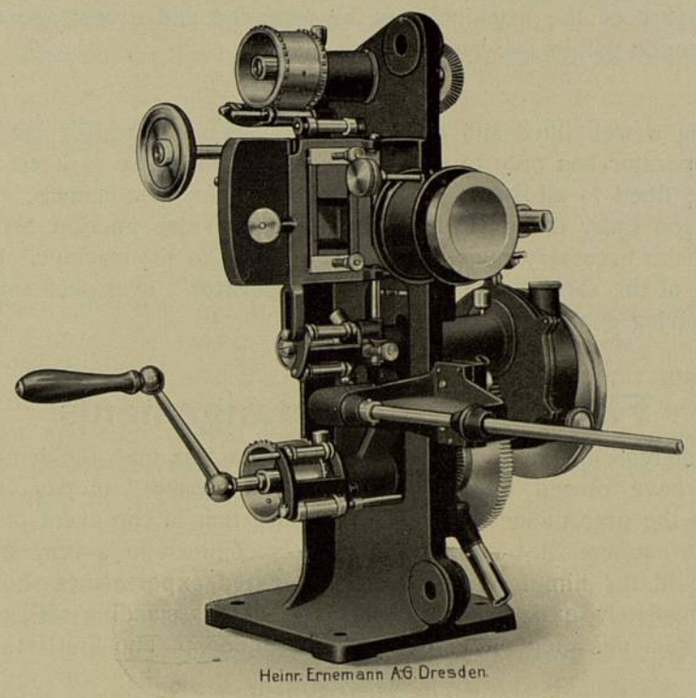


Fig. 2 878

### The Bearings

The Spindles of the Main Driving Shaft bearing the Fly-Wheel and the Maltese Cross and Driving Sprocket are all of specially tempered steel, and are carried in **Phosphor Bronze Bearings,** contained in drilled out lugs that are part of the original casting, so that an extraordinary steadiness, due to the length of bearing, is obtained; needless to say, this is also conducive to prolonged wear, and here again Silence in working is assured.

The Main Shaft has now an extra bearing, beyond the Cam, ensuring steadiness and giving more life to the gearing, the main gear is now diagonal giving steadier, quieter, and longer working.

### The Sprockets

The Sprockets are turned from hard Steel and are most accurately cut by Automatic Machinery, the number of teeth engaging in the film at one time is unusually great, thus assisting in the general reduction of wear and tear; each sprocket is fitted with deeply recessed Pressure Rollers which only press on

the film at a small space on either side of the sprockets, they are of hardened steel and are held in position by strong spiral springs. To prevent the film running round the bottom sprocket, a stripping Roller is fitted to take it off the sprocket and guide it straight into the spool boxes.

**The Driving Sprocket** is attached to its spindle by a key-washer held in place by a single screw, so that this sprocket, the most hardly worked and vulnerable part of the machine, **can be removed** and a new one substituted by any operator within two minutes.

### Lubrication

Having a well fitted and carefully assembled machine like this under his care, the Operator has only to exert a little common sense to keep it in order. **Oilcups** are fitted to all Bearings, but in oiling as in most matters, too much is as bad as too little, the oilcups are of **estimated size** and on being refilled supply just the necessary quantity of oil at a time to the machine. Here again is evidence of the careful designing of the **"Imperator",** even such small matters as this receiving attention.

## Fire Proofing Arrangements

The interests of the showmen and public no less than the demands of the authorities have caused the makers of the "Imperator" to pay very special attention to the precautions necessary to ensure that in the event of a film fire the flame is automatically extinguished and is confined to a very small space. Indeed should the film fire in the gate, **repeated experiments** show that the fire is immediately extinguished whether the film is standing still, or running, but, apart from this there are four other precautions. The first is:

### The Heat Shield

This is a large shield or screen, composed of two sheets of thin steel, between which is an **Asbestos Lining,** and this effectually screens the whole of the mechanism from the top spool-box to the base-board with only a small opening to allow the light to pass through from the Condenser to the Gate.

This shield not only screens the mechanism from the radiant heat from the lamp-house, but it would in event of the film breaking, guide the running film away from the heated lantern. The second fitting is the

### Automatic Light cut off

This is a screen which automatically opens and closes as the mechanism is started or stopped, this is actuated by a very simple, but very efficient friction clutch, which is instantaneous in action and which presents no likelihood of getting out of order owing to its simplicity. The third and fourth precautions are the upper and lower Spool Boxes.

### Fire Proof Boxes

These are of large size measuring $14\frac{1}{2}$ in. internal diameter, they are spun from solid steel of a heavy gauge, and have spun lids swinging on solid belted





hinges, they are also fitted with film channels about $2\frac{1}{4}$ in. long, these channels have hinged tops and are fitted on either end with double recessed rollers, it is absolutely impossible to pass an ignited film through these channels.

Beyond emphasising the minimum of wear and tear on the film, which is assured by the perfect matching and fitting of the whole mechanism and by the entire absence of parts that touch the picture, and again referring the reader to the **Scientific Bearings, The Constant Optical Axis** and the general mechanical principles of the Projector, this completes this the most important part of the Projector.

### The Stand

This is made in four parts of malleable iron.

**The Front Legs**
**The Back Legs**
**The Top**
**The Tilting Table**

These are all bolted together and stayed with nickelled wrought iron stays making the firmest and heaviest stand made for this purpose; the feet are pierced so that the stand may be bolted to the floor of the operating box.

The Tilting table is attached to the top by lugs with adjusting and tilting bolts in front, and large curved slotted lugs at the back permit of considerable tilt upwards or downwards, gripping bolts fixing the table securely in position when the correct tilt is obtained.

### The Lantern Body

This is constructed on a wrought iron frame which is cased by Russian Iron of a considerable thickness, and lined thoughout with Asbestos Boards; the whole of the top lifts up sloping from front to back, thus throwing the heated air from the Arc out at the back; this top, clips by springs automatically into position when lifted, and the aperture at the back is cased in with wire gauze. The Lantern is provided with an exceptionally large Observation-Window fitted in with **Pot-metal Ruby Glass** of a tint that enables the most powerful Arc to be watched with comfort. The back of the lantern is closed by an Asbestos Canvas Curtain hung on an extending Rod. On the right of the lamp is a large door which can be pushed to and fro so that the light can be kept in order without removing the lamp. The lampcase is about 25 in. broad and 45 in. long without the condenser, so that the largest and strongest lamps may be employed. In front of (not inside) the body is a support holding.

### The Detachable Condenser

The Condenser, either a Plano-convex or a bi-convex and Meniscus, as desired, is mounted in a Spring Mount that may be adjusted and set at any distance apart (the wider the glasses are apart, the shorter the focus) and is gripped in a stirrup with handle and adjusting screws, that permit immediate removal and substitution in case of breakage. Two small screws in the slots of the stirrup-support permitting the exact centreing of the whole fitting. We here insist on the advisability of having a Spare Condenser and Stirrup handy.

In front of the Condenser the Iron slide Carrier is fixed, this of the usual push and pull pattern, carrying two slides, a blank iron slide is supplied for pulling in front of the Condenser when the Arc is struck, but the machine at rest. The Lantern is supported on two parallel Steel Slides, to which it is attached by slotted steel blocks to enable it to be slid over so that the Lantern slide fitting and lens may be illuminated; adjustable stops are provided so that the operator can at once push the lantern into its correct centre behind the lantern lens, or pull it back to its exact original position behind the Film Gate.

### Lantern Slide Projector

As before stated the Ernemann Projector "Imperator" can be supplied as a combined Kinematograph-Lantern Slide Projector. In both cases the Picture Projection Portion is identical but when the Lantern Slide Projector is required as well, an extra arm is carried on the body of the machine and slide rails are provided, so that the throw-over Lamp House will supply light to either one or the other.

### The Lantern Lens

Of the fullest diameter (2″) is slung, in a jacket with Rack and Pinion, and Flasher; from an elongated arm attached to the Projector Body and can be at once adjusted to any focus lens.

The standard size lantern slide is $3^1/_4 \times 3^1/_4$ in. Size $8^1/_2 \times 10$ cm costs 5/— extra, $9 \times 12$ cm 30/— extra. Size $9 \times 12$ cm requires a larger condenser and several extra carriers namely $9 \times 12$, $8^1/_2 \times 10$ and $8^1/_2 \times 8^1/_2$ cm.

### Price of the "Ernemann" All Steel "Imperator" Projector

| | | |
|---|---|---|
| **Mechanism** complete with the finest quality lens of any desired focus, with automatic film Take-up complete with two ordinary and one dividing 14 in. spools | £ | **30.10.0** |
| Large Size Lantern House with $4^1/_2$ in Condenser (either Meniscus and Bi-convex, or Plano Convex) fitted with detachable stirrup handle | „ | **4. 0.0** |
| Fitting for Projecting Lantern Slides, complete with large lantern lens, Flasher, Rack and Pinion and metal slide carrier | „ | **4. 0.0** |
| Two fire proof spool boxes | „ | **5. 0.0** |
| Iron Stand with Tilting Top | „ | **4.10.0** |
| **Complete outfit** | £ | **48. 0.0** |
| Motor D.C. or A.C. any voltage, with starting resistance and speed regulator | £ | **5. 0.0** |

The **"Imperator"** can be seen running at our showroom at any time an experienced operator being ready to put any film through that the intending purchaser may bring. Of course we have films there, but we are willing to try anyone's.

We have several trained operators ready to accompany a machine anywhere, either as temporary or as permanent operators; they are men who know the machine, and their business is to get the best out of it with the minimum of wear and expense.





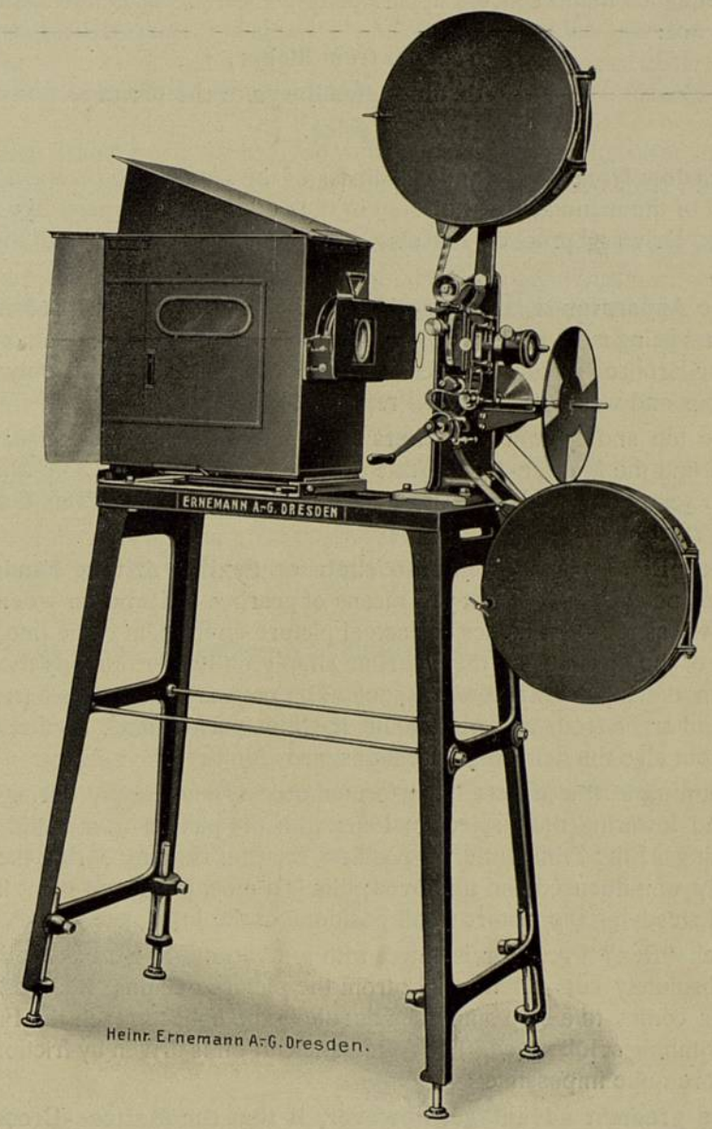


Fig. 3 766

## The Ernemann "Rex" Projector

with Fireboxes, Lamphouse and Iron Table

# The Ernemann "Rex" Projector

is an unequalled Maltese-Cross apparatus of highest precision, the main advantages of which are: —

**Freedom from flicker,**
**Absolute steadiness of the picture,**
**Moderate price.**

**Freedom from flicker** and steadiness of the picture are obtained by the high precision of the manufacture, not only in the more important parts like the Maltese-Cross and Driving Sprocket, but also in the less important parts of the rest of the machine.

**The Apparatus is strong, solid, and constituted only of the best material;** those parts being most subject to wear and tear are made of steel, all other parts of Phosphor Bronze; in consequence the durability of the "Rex" is only excelled by our famous and well-known Steel Projector "Imperator".

The top and bottom **Sprockets** are made of Phosphor Bronze; the Driving Sprocket and the Maltese-Cross Axle are both made of steel. The Maltese-Cross is cut in tempered steel, and the **pressure skates of the Film Gate** are light moulded steel blocks.

**The "Rex" Projector has no chain or flexible driving bands,** all transmission of power being direct by means of gearing. **Minimum wear of the film is ensured,** as in no case does the actual picture on the film come into contact with any part of the mechanism; the film runs simply on its perforations the whole of its way from the top to the bottom spool. The pressure rolls are so arranged that a large number of teeth are engaged in the film perforations, so that not only the picture, but also the delicate perforations, are uninjured.

**Framing of the picture** is performed quickly and simply during running by lifting and lowering the Projection Lens with the picture frame, and that without any forcing of the Film out of its position, the film running during the adjustment absolutely uninfluenced and unmoved; this is a most important point in saving the film, and steadying the picture in all positions of the Film-gate.

Each "Rex" Projector is fitted with an **Automatic Fire Screen** or Cut-off, which absolutely cuts off the light from the picture opening; it closes directly the apparatus comes to a stop, and does not allow the light to reach the Film until the latter is running at full speed. The Automatic Cut-off is driven by friction and failure is therefore quite impossible.

**The greatest advantage, however, is that the Maltese-Cross Sprocket, the most delicate of all parts, can be instantaneously removed, simply by loosening a screw: no other apparatus has this advantage, not even the most expensive.**

The Maltese-Cross Axle is placed in a separate casting as per sketch herewith, and this casting is fixed most solidly by one screw only; if, therefore, the Maltese-Cross gets out of order, it is not necessary to send back the whole of the machine to the works, but it can be ordered and subsequently exchanged at any time. The





Complete Set consists of a Maltese-Cross and Driving Sprocket, also if there is much wear and tear owing to long running, only a new Maltese-Cross Set is necessary to again get absolutely steady pictures as in a new apparatus.

**The Fire-proof Boxes** are made out of one piece of metal, the doors are attached by strong hinges, and the film is conveyed on its way by four pairs of steel rollers.

**The Lantern House** is made out of the best Russian Iron; it is large and well ventilated.

**The Iron Stand** being strong and solid, prevents vibration to a very great extent; a tilting arrangement is fitted so that the optical axis may be directed upwards and downwards.

Before being delivered each Ernemann "Rex" Projector is exminined thoroughly for absolute steadiness of picture, for perfect working and freedom from flicker, and for protection of the film, and we give the highest guarantee with our machines.

We can recommend the Ernemann "Rex" for medium theatres which cannot afford to take the most perfect and most durable apparatus, viz.: – the Ernemann Steel Projector "Imperator", but which, however, require their performance to be as good as other theatres.

The height of the Optical Axis, the arrangement of the fixing screws of the whole of the Machine, is so arranged that the "Rex" can always be interchanged with an "Imperator". Therefore, we recommend every owner of the "Imperator" to have a "Rex" Projector as a reserve apparatus.

## Prices of the Ernemann Kinematograph Projector "Rex"

| | | |
|---|---|---|
| **Projector,** complete with finest quality Lens of any desired focus, on Cast-iron base, **Lamp House,** including $4^1/_2$ in. Condenser with slung detachable handle, **Lantern Slide Projection fitting,** complete with Lens, Flasher and Rack and Pinion, with Metal Slide Carrier, Automatic Take-Up, and Automatic Safety Shutter, **one dividing Spool,** and **two ordinary Spools,** each to take 1,000 ft. of Film (12 ins.) . . . . . | £ | **29. 0.0** |
| Fire-proof Spool Boxes, per pair . . . . . | „ | **3 10.0** |
| Iron Stand with Tilting Top . . . . . | „ | **3.10.0** |
| Motors and Starting Resistances for D. C. or A. C. . . . . | „ | **5. 0.0** |

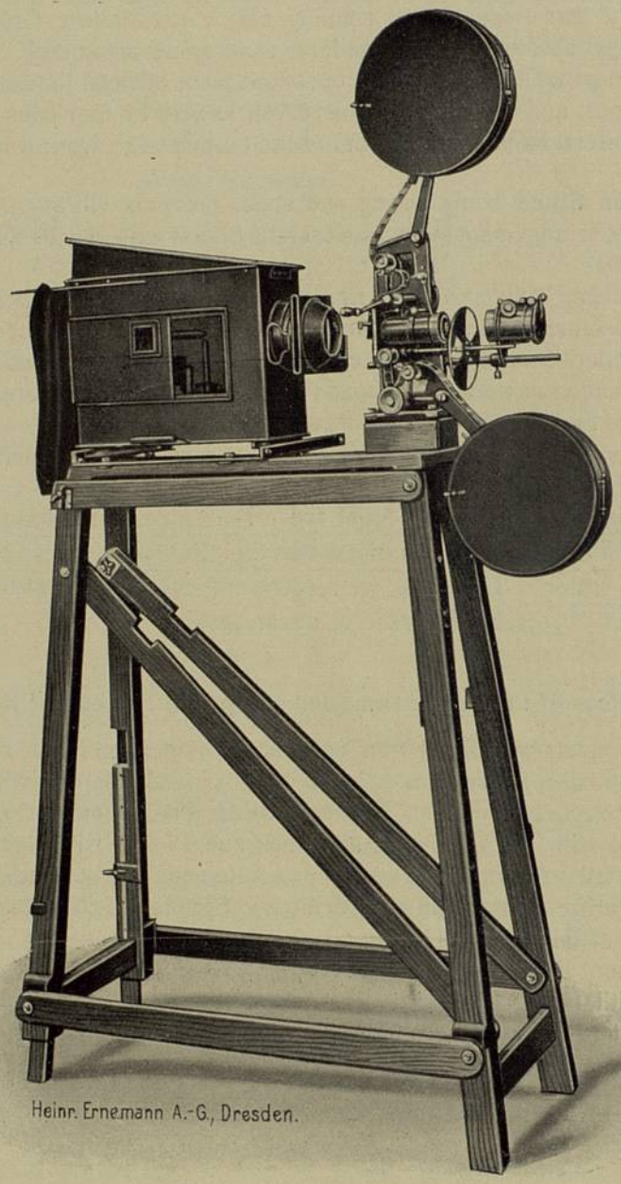


Fig. 4 900

## The Ernemann "Monarch" Projector

with Spoolboxes, Lamphouse, Lantern Fitting and folding stand





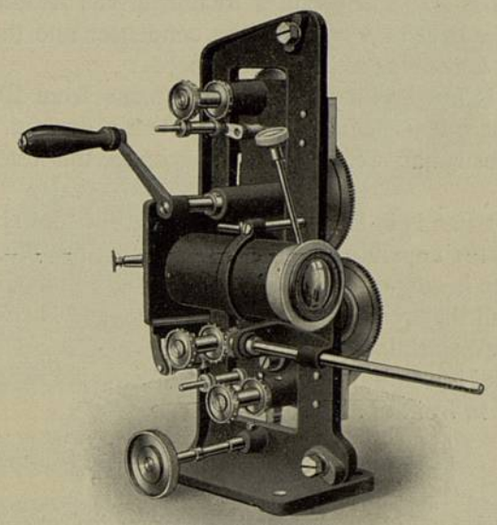


Fig. 5 879

## The Ernemann "Monarch" Projector

The **Ernemann Projector "Monarch"** is a lightly built Maltese Cross apparatus, the construction and handling of which is practically identical with that of our Steel Projector "Imperator" of which it is a slightly reduced model, it has all the characteristics of the "Imperator" including the necessary **Constant Optical Axis,** that is the lens and the film gate remain unaltered and the Arc Lamp can be so regulated that the exact field of the picture and no more, is illuminated, which means of course a saving of current.

The most important parts, such as the **Maltese Cross, Transport Sprockets, Fore and After Sprockets, Spindles etc.,** are of steel, while the **Cog Wheels are of Phosphor Bronze.** The whole mechanism is carried on a massive Cast Iron Body.

Every movement and adjustment is made by a rack and pinion and every transmission of power by direct drive, by this means all chains and flexible spindles are done away with, by simple combinations the racks are reduced to a minimum; this ensures the simplicity and also the certainty and silence when running, of the machine.

The film runs over the fore sprocket through the window under the transport sprocket and over the take up sprocket into a film rewinder.

The masking is of large capacity, and on its entire way through the apparatus from beginning to end the film is only touched on the edges on either side and in no place does the picture come into contact with any of the rollers, sprockets etc. etc. As regards the **flicker-free** and **Rock Steady picture** which is so desirable this with the "Monarch" is the same as with the "Imperator".

The apparatus is also fitted with a friction driven **Automatic Cut-off** which drops a curtain in the light rays between the condenser and the film, and only lifts when the apparatus is running at its normal speed.

The machine is fitted with a lens of any focus from $2^1/_2$—8 in. or, if the highest degree of sharpness, detail, and stereo effect is desired, we recommend one of our New Pro-Anastigmats which costs **50**/— extra, this can be had of a focus of from $1^3/_8$—8 in.

The Shutter or Fan is in front of the objective, the film spools and boxes take 200 yards of film, if the apparatus is fitted with the "P" fire boxes (see page 16) and the large lamp house in connection with a lantern slide fitting, it is then just as suitable for use in small theatres as any other machine, and is strongly recommended for travelling theatres, scientific institutions, etc.

The "Monarch" is so built that the Optical Axis is low enough to permit the use of the projector in front of almost any lantern.

### Prices of the "Monarch"

With lens of $2^1/_2$—8 in, Automatic Cut-off, Automatic Take-up, with two fixed and one dividable spool . . . . . £ **9. 9.0**
No. 2170 Code Monarchie Weight 7.500 Kilos

Lamp house complete with Condenser . . . . . £ **2.10.0**
No. 2043 Code Latus Weight 5.000 Kilos

Fire Boxes, per pair . . . . . £ **2. 0.0**
No. 2038 Code Eftrommel Weight 1.900 Kilos

Lantern slide fitting complete with lens . . . . . £ **3. 5.0**
No. 2062 Code Diamant Weight 3.400 Kilos

Wooden tilting table . . . . . £ **3. 5.0**
No. 2073 Code Holzapfel Weight 9.000 Kilos

The lamphouse is somewhat similar to that supplied with the "Imperator" or "Rex" machine. It is however of Russian Iron asbestos lined, with open top. The door at the side slides, and is fitted with observation glass.

The condensers are $4^1/_2$ inches fitted in a tube.

The Spool boxes have a diameter of 10 inches.





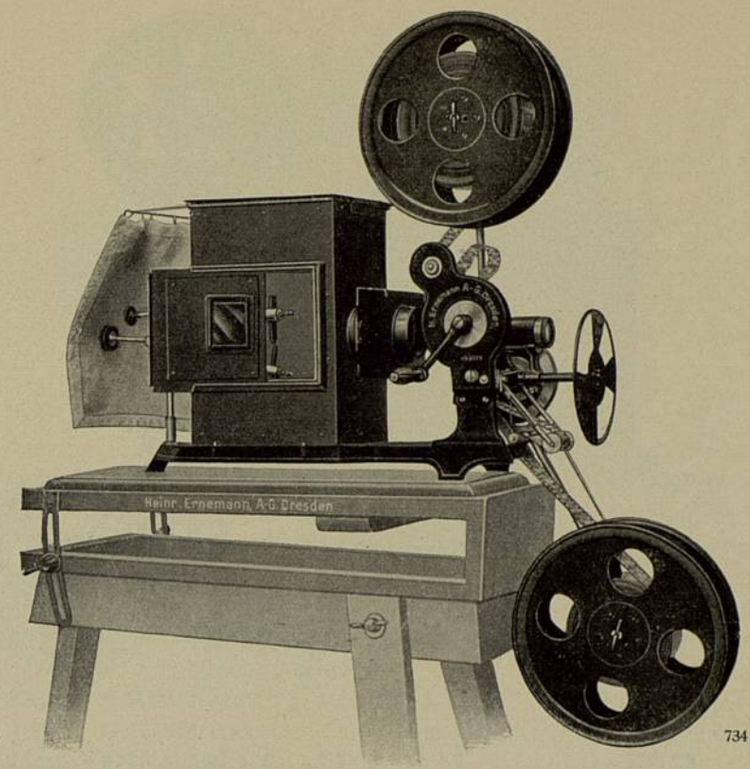


Fig. 6 734

## The Ernemann Family Normal Kino

is a very simple Maltese Cross machine especially designed for use in families, and gives an excellent and steady picture. The construction and outfit is solid and precise as in our larger makes, and the apparatus must not in any way be confoun ded with the toy cinematographs which are placed on the market. The film passes over the first sprocket through the gate, over the transport sprocket, and a spring claw then helps it on its way to the automatic re-winder, taking the pressure of the film, and obviating the re-winder sprocket. The lens is of $2^1/_2$ inches focus, and the fan is in front of the lens. The apparatus can be fitted with fire proof boxes, and lantern fitting if desired.

### Price

Ernemann Family Normal Kino with lens etc. as above described. . . £ **5. 5.0**
No. 2180 Code: Familie Weight 4 Kilos

Ernemann Family Normal Kino with "F" Lamphouse . . . . . „ **6.10.0**
No. 2181 Code: Famulus Weight 6 Kilos

Ernemann Family Normal Kino with "F" Lamphouse and Fire Boxes „ **8.10.0**
No. 2182 Code: Fama Weight 8 Kilos

Ernemann Family Normal Kino with "P" Lamphouse, Fire Boxes and lantern slide fitting . . . . . „ **11.11.0**
No. 2183 Code: Fament Weight 13 Kilos

Three legged wooden table with tilting top . . . . . „ **1.18.0**
No. 2075 Code: Fatisch Weight 7 Kilos

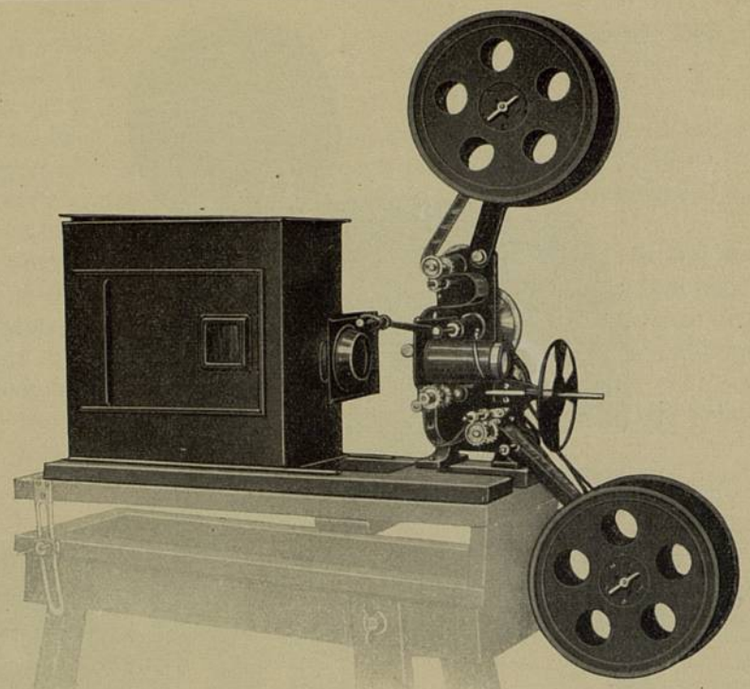

Fig. 7 849

## Ernemann Kino-Projector "Prince"

The Ernemann Kino-Projector "Prince" in spite of its low price gives most excellent results. It is especially adapted for use in small rooms with only a low light power, and it is made for films of not more than 200 yards.

The Film is transported by means of the maltese cross. The apparatus has the same first and second sprockets as the large apparatus so that it gives an absolutely steady picture. Lenses of from $5^1/_2$ to 8 in may be used.

The masking of the picture can be done when at rest, by turning the transport sprocket on its axis after releasing the holding nut. The Prince Projector is fitted with an automatic fire cut off work ed by friction, and can be supplied with fire boxes and lantern fitting if desired.

The Lamphouse is very similar to but more lightly built than the "Monarch", and can be supplied either in model "P" if the machine is required with the lantern slide fitting, or model "F" if without. — The Model "F" as it is not supplied for use with slides has $2^1/_2$ inch. condensers only.

**Price**

| | | | |
|---|---|---|---|
| Complete with lens, automatic fire cut off, one dividing and two fixed spools, without lamp house . . . . . | | | £ 7. 5.0 |
| No. 2005 | Code: Principat | Weight 5.500 Kilos | |
| Complete with "F" Lamp House . . . . . | | | „ 8.10.0 |
| No. 2006 | Code: Princelike | Weight 7.500 Kilos | |
| Complete with "P" Lamp House and lantern slide fitting . . . . . | | | „ 11. 11.0 |
| No. 2007 | Code: Princeps | Weight 13.000 Kilos | |
| Ditto with Fire Proof Spool Boxes . . . . . | | | „ 13.13.0 |
| No. 2008 | Code: Principalite | Weight 15.000 Kilos | |





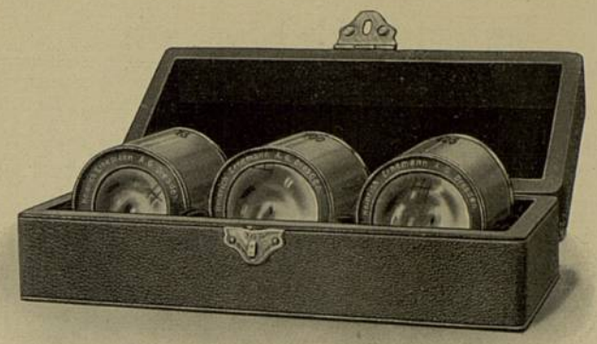

Fig. 8 630

## Lenses

Our special optical institute under our own roof, and own computers of lens measurements, enables us to give by means of careful trial the most perfect lenses for the purpose for which they are required. We work our own lenses from the rough glass block to the final polish, and therefore we have rightly obtained an excellent name for lens proficiency. We supply two sorts: —

1. **Ernemann Kino-stigmat** in which the full aperture of the lens passes light. Supplied in all focuses from $2^1/_2$ inches upwards. The pictures are beautifully plastic and exceptionally brilliant.
2. **Ernemann Pro-Anastigmat** a new lens, focus from $1^1/_4$ in to 8 in. These are most highly corrected lenses that are made for projection. They have the advantage over the usual Kino lens of giving incredibly sharp pictures from the middle to the edge of the mask with an extraordinary stereoscopic effect. We cannot too highly recommend these pro-Anastigmats for use with all the Ernemann Projectors. If taken with a projector in the ordinary way the extra cost is £ 2.10.0, if sold separately the price is £ 4.0.0.

In extreme cases when only a very short throw is possible and where it is desirable to make a picture as large as possible, lenses of shorter focus than $2^1/_2$ inch must be used. Owing to the "Imperator" having a constant optical axis it is possible to construct a special fitting which will permit the use of the very short focus pro-Anastigmat. This however increases the price of the "Imperator" by £ 6.

**For travelling theatres** which have various throws to deal with, we recommend our complete lens set in which there are three lenses of various focus. This set is complete in velvet lined box.

Lenses for Lantern slide projection are of the same construction and quality as the Kino Lenses. — A lantern Slide lens of suitable focus is four times the focus of the Kino Lens and this is usually supplied with our Projectors.

**Price**

| No. | Code | | Weight Kilos | £ |
|---|---|---|---|---|
| | | **Ernemann Kino-stigmat** | | |
| 2020 | Monob | for cinematograph projection any focus . | 0.170 | **1.10.0** |
| 2021 | Dumonob | Lantern slide lens any focus . . . . . | 0.260 | **1.10.0** |
| 2024 | Pronob | **Ernemann Pro-Anastigmat** any focus . . | 1.120 | **4. 0.0** |

### Size of Picture

| Distance between lantern and screen | Focus of lens in. 1 1/4 | in. 1 1/2 | in. 1 3/4 | in. 2 | in 2 1/8 | in. 2 1/2 | in. 3 | in. 3 1/2 | in. 4 | in. 6 | in. 7 | in. 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ft. | ft. in. | ft. in | ft. in. | ft. in. | ft. in. | ft. in. | ft. in. | ft. in. | ft. in. | ft. in. | ft. in. | ft. in. |
| 10 | 8 — | 6 8 | 6 — | 5 — | 3 8 | 4 — | 3 4 | 3 — | 2 6 | 1 8 | 1 6 | 1 3 |
| 12 | 9 6 | 8 — | 7 — | 6 — | 4 3 | 4 — | 4 — | 3 6 | 3 — | 2 — | 1 9 | 1 6 |
| 15 | 12 — | 10 — | 9 — | 7 6 | 5 6 | 6 — | 5 — | 4 6 | 3 9 | 2 6 | 2 3 | 1 8 |
| 20 | 16 — | 13 4 | 11 4 | 10 — | 7 — | 8 — | 6 8 | 5 8 | 5 — | 3 4 | 2 10 | 2 6 |
| 25 | 20 — | 16 8 | 14 4 | 12 6 | 9 — | 10 — | 8 4 | 7 2 | 6 3 | 4 2 | 3 7 | 3 2 |
| 30 | 24 — | 20 — | 17 — | 15 — | 11 — | 12 — | 10 — | 8 6 | 7 6 | 5 — | 4 3 | 3 9 |
| 35 | 28 — | 23 4 | 20 — | 17 6 | 12 9 | 14 — | 11 8 | 10 — | 8 9 | 5 10 | 5 — | 4 4 |
| 40 | 32 — | 26 8 | 23 — | 20 — | 14 — | 16 — | 13 4 | 11 6 | 10 9 | 6 8 | 5 9 | 5 4 |
| 45 | 36 — | 30 — | 26 — | 23 6 | 16 6 | 18 — | 15 — | 13 — | 11 3 | 7 6 | 6 6 | 5 8 |
| 50 | 40 — | 33 4 | 28 6 | 25 — | 18 — | 20 — | 16 8 | 14 3 | 12 6 | 8 4 | 7 7 | 6 3 |
| 60 | 48 — | 40 — | 34 — | 30 — | 22 — | 24 — | 20 — | 17 — | 15 — | 10 — | 8 6 | 7 6 |
| 75 | 60 — | 50 — | 43 | 37 6 | 27 — | 30 — | 25 — | 21 6 | 18 9 | 12 6 | 10 9 | 9 6 |
| 100 | 80 — | 66 8 | 44 — | 50 — | 36 — | 40 — | 33 4 | 22 — | 25 — | 16 8 | 11 — | 12 6 |

## Fire Boxes.

The use of Fire Boxes is now insisted upon in practically every Country and even where they are not a necessity it is in the interest of the Theatre Owner that they should be used as they render extensive burning of the film quite impossible. Our Fire Proof Boxes are spun out of one piece and covered inside with Asbestos, in no case is there any soldering of the joints; the covers are fitted with hinges and have a simple and handy form of fastening.

These Spool Boxes are supplied in three patterns:

Pattern "I" are for the "Imperator" Projector. They have a diameter of 15" and are made for 13 3/4" Spools. The film channels are of the Folding Pattern, extra long and strongly built with sliding rails and rollers which do not come into contact with the picture part of the film at any point.

The "R" Boxes are made for the "Rex" Projector having a diameter of 13 1/2" and take 12" Spools they are fitted with a shorter and simpler channel with rollers than the "I" Boxes.

The "M.P.F." Boxes have a Diameter of 10" and are made for 8 3/4" Spools as supplied with the "Monarch" "Prince" and Family Kinos, the film is passed into the boxes trough Rollers.

### Prices for one Pair Fire Boxes

| No. | Code | Model | Weight Kilos | £ |
|---|---|---|---|---|
| 2036 | Itrommel | "I" for "Imperator" . . . . . | 7.500 | **5. 0.0** |
| 2037 | Ertrommel | "R" for "Rex" . . . . . | 6.500 | **3.10.0** |
| 2038 | Eftrommel | "M. P. F." for "Monarch", "Prince" and "Family" Kino . . . . . | 1.900 | **2. 0.0** |





## Lantern Slide Fittings

Every Ernemann Projector can be fitted with an arrangement by means of which ordinary Lantern Slides 3 3/4 × 3 1/4" can be projected. The fitting carries a Lens in Jacket, with Rack and Pinion and Flasher and it is so arranged that the Lens carried gives a picture of the same size as the picture given by the Films. The Jacket is carried on a Rod and can be slid to and fro until approximate focus is obtained, the fine focussing is done by the Rack, further, on Projectors so fitted a Lantern Slide Carrier is supplied on the front of the Condenser and the Lantern House is built on two Long Sliding Rails with stops so that the Lamp can be pushed over until the Condenser centres with the Lantern Slide and Lens and return to its correct centre for the Films.

The price of the Fitting includes the Lens and all the articles mentioned above. The prices are quoted under the various machines.

### Lamp house Prices

| No. | Code | Model | Weight Kilos | Price £ |
|---|---|---|---|---|
| 2041 | Lateral | "I" Lamphouse for "Imperator" with Hard Glass Condensers 4 1/2 in. . | 12.500 | **5.15.0** |
| 2042 | Latium | "R" Lamphouse for "Rex" with Condensers 4 1/2 in. . . . . | 8.500 | **4. 0.0** |
| 2043 | Latus | "M" Lamphouse for "Monarch" with Condensers 4 1/2 in. . . . . | 5.000 | **2.10.0** |
| 2044 | Laterit | "P" Lamphouse for "Prince" with Condensers 4 1/2 in. . . . . | 4.000 | **2. 5.0** |
| 2045 | Latenz | "F" Lamphouse for "Family" with Condensers 2 3/8 in. . . . . | 2.000 | **1.10.0** |
| 2050 | Konlinse | Planoconvex Condenser lenses 4 1/2 in. . . . . | 0.300 | **3.0** |
| 2051 | Crowhart | Hardglass Condenser lenses 4 1/2 in. | 0.300 | **13.0** |

## Electric Motors

Where Electric Current is to be had it is recommended that the Projectors be invariably run by Motors, this adds to the life of the Machine and gives the Operator both hands free for other work.

We supply Motors of all voltages, direct or alternating, in first class precision work. They have a Horse Power of 1/16th and consume very little current, they are fitted with automatic oilers and each one is fitted with a seven stop Regulating starter.

| No. | Code | Model | Weight Kilos | Price £ |
|---|---|---|---|---|
| 2100 | Gleichung*) | Direct Current . . . . . | 8.0 | **5. 0.0** |
| 2102 | Wechselung*) | Alternating Current . . . . . | 8.0 | **5. 0.0** |

*) When ordering state voltage.

# Spools

We supply two sorts, fixed and dividing, it is convenient to have at least one of these last so that the newly received film may be placed in the spool at once with out any rewinding. The dividing spool has a small brass core which telescopes into a brass tube. Fixed spools are of the ordinary type with a large wooden core and strong clip. With each Projector we supply one dividing and two fixed spools. Both sorts of spools are supplied in three sizes, the largest is only for the **"Imperator"** and are called **"I" Spools,** they have a diameter of $13^1/_2$ in. and take 600 metres of film this almost equals 2.000 ft. The medium spools **"R" Spools** are for the **"Rex" Projector,** and are 12 in. in diameter taking 350 metres of film which is about 1.000 ft. and the small **"M.P.F." Spools** are $8^3/_4$ in. diameter taking about 600 ft. of film for the **"Monarch", "Prince" and "Home" Cinematograph.**

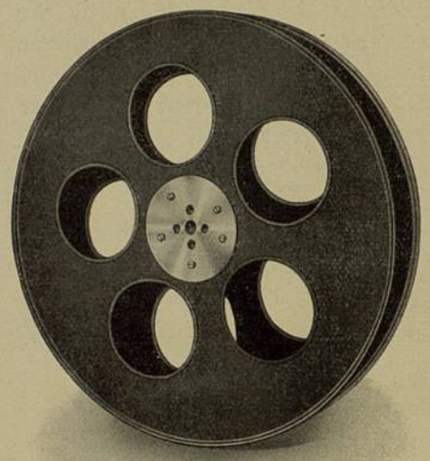

Fig. 9 631

**Prices**

| No. | Code | Model | Weight Kilos | sh. |
|---|---|---|---|---|
| 2028 | Impspule | "I" Fixed Spool for the "Imperator" | 1.350 | **4/6** |
| 2029 | Großspule | "I" divided „ „ „ | 1.350 | **6/—** |
| 2030 | Conjunct | "R" Fixed „ „ „ "Rex" . . . | 0.650 | **3/—** |
| 2031 | Disjunct | "R" divided „ „ „ „ . . . | 0.650 | **4/6** |
| 2032 | Festspule | "M.P.F." Fixed „ „ „ "Monarch", "Prince" and "Home" Cinematographs | 0.400 | **2/—** |
| 2033 | Zerspule | "M.P.F." divided Spool for the "Monarch", "Prince" and "Home" Cinematographs | 0.400 | **3/—** |

In ordering Film Spools it is necessary to take into consideration the entire diameter of the **Spool Boxes,** the new Large Spools require a spool box of at least 15 in. diameter.

# Dimmers or Catseyes

By the use of these instruments the light from the Projector lens may be reduced slightly and imperceptibly at the close of the picture, which gives a very much more pleasing effect than cutting the light off suddenly as is so often done, or allowing the white sheet to appear at the end of a film. The gradual dimming of the light preserves the illusion and prevents the sudden and complete termination which is so unpleasing to many people and so bad for the eyes. By means of a spring clip this can be fitted on to any cine lens whether made by us or other manufacturers.

**Price** . . . . . sh. **12/—**
No. 2055 Code "Dunkler" Weight about 0.200 Kilos





# Rewinders

We supply rewinders in three designs, namely:
**An extra Strong Rewinder with folding arm.**
An extra strong one Mounted on a Base Board, and a small simple rewinder.

The Cog wheels are cut very broad and of a stout gauge, they work at the rate of 1—3 the wheels are encased in casings and as the rewinder is fitted with a winding shield the film can as desired, be wound either on a spool or wooden core.

In **Model I** the full spool is put on the end of the arm, and the whole rewinder is screwed by means of the clamp to the table.

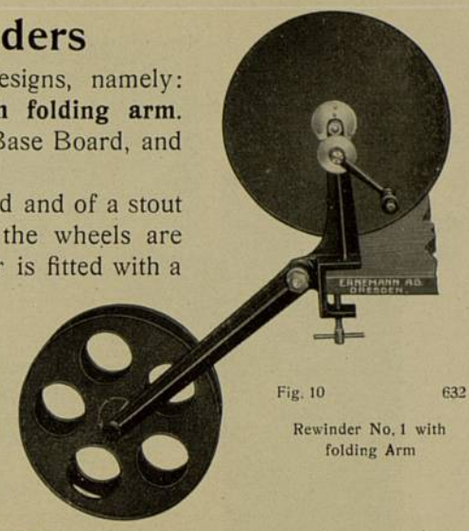


Fig. 10 632

Rewinder No. 1 with folding Arm

In **model II** the film winder is fixed on to a stout board polished to resemble mahogany and if desired our **Film Meter** can be added to this.

This Film Meter is an exceptionally solid and precise instrument and the length of the films may be read off while spooling them.

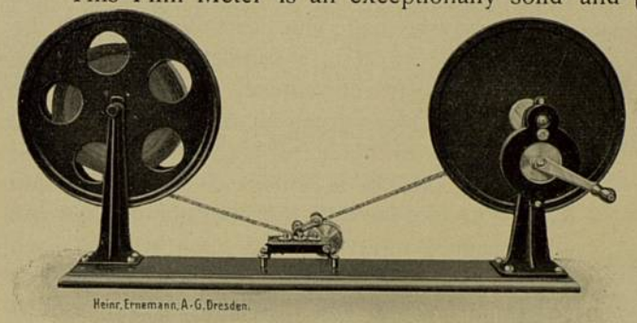


Fig. 11 Rewinder No. 2 with meassure 725

**Film Rewinder No. III** is a simple apparatus for winding the small films of the **"Monarch", "Prince" and "Home" Cinematographs** it has no casing to its cog wheels and is simple to clamp to the table.

**Prices**

| No. | Code | Model | Weight Kilos | £ |
|---|---|---|---|---|
| 2090 | Solidax | I | 4.400 | **1. 8.0** |
| 2091 | Duplax | II | 4.400 | **1.10.0** |
| 2092 | Triplax | III | 1.600 | **8.6** |
| 2095 | Kontrollax | Film meter, extra | 0.860 | **2. 2.0** |

# Water Troughs

Certain authorities insist on the use of a water trough for reducing the heat of the light rays between the condenser and the film.

Our water trough consists of two parallel optically worked glass plates fixed in a strong brass frame. This makes a water tight compartment which is filled with water or in some cases a solution of alum or Hydrochloric Acid.

The trough is arranged to be fixed on the baseboard in front of the condenser, and can easily be put in or removed.

**Price** of the water trough . . . . . sh. **18/—**
No. 2071 Code Cuvette Weight about 1 Kilo

# Chromograph

The usual description of the colour screens it will be understood produee an abrupt change from one colour to another and the whole of the picture must be tinted one colour at a time. With the Chromograph these two objections are removed, the colour filter is not in front of the lens but is between the condenser and the lens so that the light falling on the film is already tinted, by this means it is possible to tint the picture in two different colours, the top part one colour and the lower part a corresponding tint, but an entirely different colour and this without effecting the power of the light or the strength of the picture.

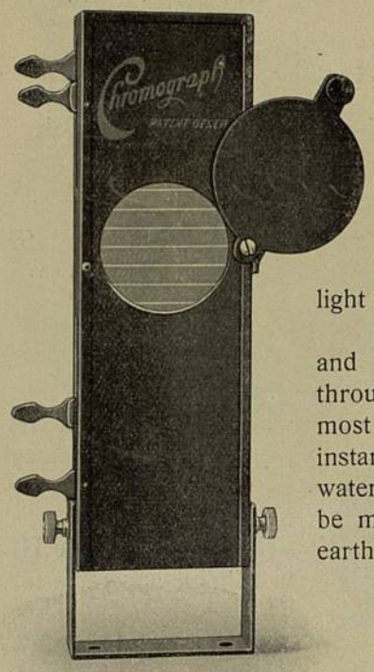


Fig. 12 915

The filters in this apparatus pass over each other and are so arranged that the light can be passed through more than one filter at a time, so that the most pleasing colour combinations are obtained, for instance, sky may be made blue, earth golden, and the water green. The effect of a sun-set or sun-rise can be most marvellously reproduced, the sky red, the earth orange, with deep green shadows and gradually the tone can be made to fade in the sky until the whole picture is coloured with the same tone. The free hand of the operator can get the most beautiful effects and old films may be used again giving them a most interesting value. For nature pictures this apparatus is extremely useful and it is highly recommended to cinematograph theatres.

**Price** of the "Chromograph" . . . . . £ **5. 0.0**
No. 2085 Code "Chromgraf" Weight about 1.750 Kilos

# Fitters Outfit

In the interest of every theatre proprietor it is desirable that his operators should be in a position to manipulate the machine comfortably, and for this reason a good tool chest is desirable. We have therefore made up a tool chest which is particularly adaptable to our Projectors. It contains a double ended spanner, a screw driver, carbon pincers, brush for cleaning the cog wheels, soft brush for dusting the film channels, chamois leather for polishing the film channels and for cleaning lenses, oil can, bottle of oil, film repairer, and a bottle of film cement.

The chest is strongly built of wood, polished to resemble walnut, fastened with hooks with a stout leather handle.





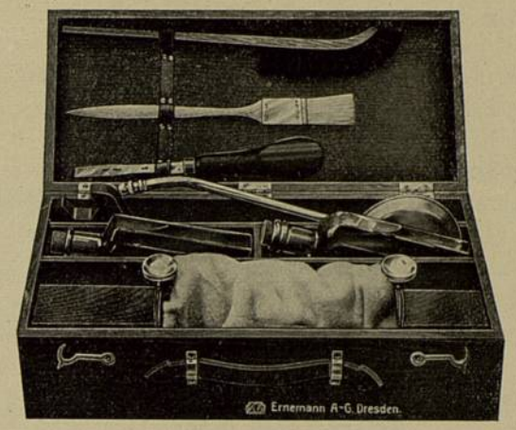


Fig. 13 634

**Price**

| No. | Code | | Weight Kilos | £ |
|---|---|---|---|---|
| 2080 | Werkzeugkasten | Case as described above . . . . . | 2.600 | **1. 8.0** |
| 2081 | Ölflasche | 1 bottle of special oil . . . . extra | 0.150 | **0. 1.0** |
| 2083 | Kittol | 1 bottle of special Film Cement . extra | 0.150 | **0. 1.0** |

# Operating Box Windows

The openings in the Operating Box through which the light from the projector and the lantern pass are as a rule wrongly constructed by the builders, they have not the correct technical knowledge which enables them to place these as they should be placed. We have therefore prepared a complete window consisting of a strong cast iron plate which is fixed at a proper distance from the floor.

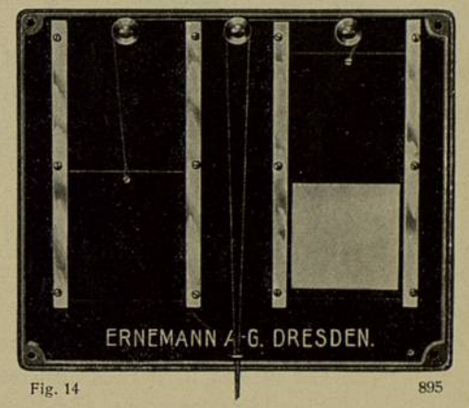


Fig. 14 895

The position of the openings are then correct for the lens centres of our projectors. The openings are cut of such a size that they will accomodate the focus of the shortest focus lens that we supply, and also small enough to prevent any stray light reaching the interior of the theatre. By means of sliding plates it is possible to make these holes correct for any focus lens. On the interior are sliding shutters manipulated by cords and pulleys which can be immediately closed in case of any mishap in the operating box.

The strings can be worked either by hand or by a foot tread.

**Price** complete . . . . . sh. **30**/—
No. 2137 Code Fenster Weight about 5.500 Kilos

# Arc Lamps

We manufacture three principle types of arc lamps viz:

the **Prism Arc Lamps,**
the **Right Angle Arc Lamp** and
the **Scissor Arc Lamp.**

Each of these types are finished in a different way and sized according to the necessary strength of current.

## Ernemann Prism Arc Lamp

This is a favourite pattern lamp in electric theatres. It is only made in the strongest form for currents up to 100 amps.

It is known as the

**Prism Lamp Model II**

It is very strongly built and easily regulated. It is wonderfully precise, and neatly finished off. The screw clamps to the carbons are regulated by the knob at the back end of the lamp, that is, as far as it is possible to get it from the carbon so that when changing the carbons the knob is comparatively cool.

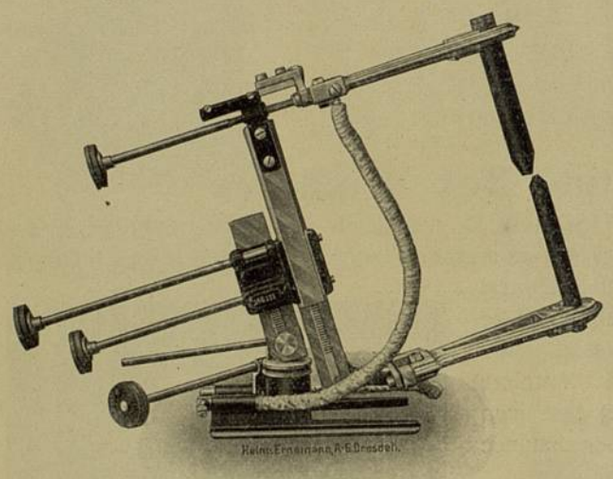

Fig. 15 721

The screw is tightened up by means of a little "Tommy" lever, and this prism lamp is so constructed that it does not, as is the case with many other lamps become jammed and locked owing to the over-heating of the lamps. The only effect of heat is to clamp the carbons tighter.

The Ernemann Prism Lamp II has five regulations:

1. The Arc is regulated by turning the long handle which keeps the carbon holders parallel and advances them together.
2. By means of a rack the lamp is elevated or depressed as required.
3. By means of a rack the lamp is revolved sidewards.
4. The lamp may be tilted, and by means of an eccentric cam can be kept in any desired position. Owing to the simple construction of this it is possible with a large tilt of the lamp to use very long carbons.
5. The top carbon holder by means of a micrometer spindle screw is withdrawn or advanced as necessary.

All the spindles and handles of the regulations are longer than ordinary so that they project well from the lamp-house, and the handling of them is very much simplified.





The end of the leads are passed into the terminals at the foot of the lamp, and the current is conducted by asbestos isolated cables to the two carbons, therefore only the carbon holders are under current, the whole of the rest of the lamp and regulation handles being insulated from the holders.

**The Prism Lamp Model III for alternating current**

This lamp is practically the same as Model II but it has a sixth regulation viz: A side swing to the top carbon. By this means it is possible to get the two craters central again in case they have somewhat burnt to one side. This lamp is however specially recommended for alternating current, while the Prism Lamp Modell II is recommended for Direct current.

**Price of the Ernemann Prism Lamp**

| No. | Code | Model | Weight Kilos | £ |
|---|---|---|---|---|
| 2141 | Mittellux | II | 5.000 | **6. 0.0** |
| 2142 | Riesenlux | III | 6.000 | **7.10.0** |

# Ernemann Right Angle Arc Lamp

With this lamp in use with a direct current the upper or positive carbon is horizontal, the lower or negative carbon vertical the carbon points being exactly at right angles to each other.

When burning the crater of the positive carbon acts as a reflector and therefore the greatest light effect is obtained with these lamps even greater than with the same current on the prism lamp.

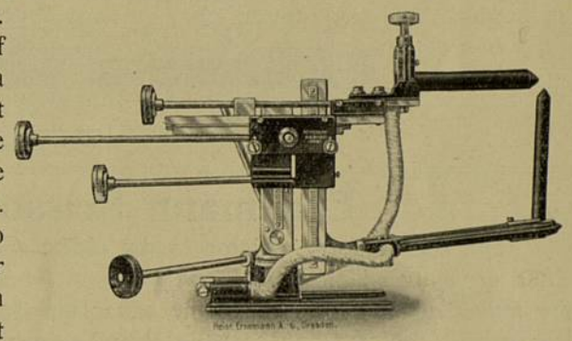

Fig. 16 Right Angle Arc Mod. III 896

It is however necessary to take carbons about 25 % thicker than are taken with the prism lamp. This however does not increase the cost of burning because the carbons do not burn as quickly. The Right Angle Lamp is fitted with five regulations:

1. The arc is regulated by turning the longest handle which lifts also one carbon, and advances the other.
2. Uneven burning of the carbons is regulated by the upper screw which will advance the upper carbon alone, or of course withdraw it if necessary.
3. By means of a rack work the lamp is raised or lowered.
4. By means of a turn table rack the lamp is revolved in its foot.
5. The lamp may be tilted considerably, and by means of an eccentric clamp can be fixed in any desired position.

All the spindles are of an extraordinary length so that they project far outside the lamp house and the use is therefore very much simplified.

The end of the leads are passed into a terminal on the foot of the lamp, and the current conveyed by special covered cables to the carbon holders direct, and the remainder of the lamp being insulated is not alive.

The right Angle Lamp Model I is for currents up to 10 amps, Model II for currents to 30 amps, Model III for currents to 100 amps, and the lamps may be used above these currents without showing any undue overheating. For electric theatres Model III is the lamp to use.

**Price of the Ernemann Right Angle Lamps**

| No. | Code | Model | Weight Kilos | £ |
|---|---|---|---|---|
| 2190 | Sparpfennig | Model I, 10 amps . . . | 1.200 | **2. 10.0** |
| 2191 | Sparsam | „ II, 30 „ . . . | 2.100 | **3. 15.0** |
| 2192 | Sparherd | „ III, 100 „ . . . | 5.400 | **7. 10.0** |

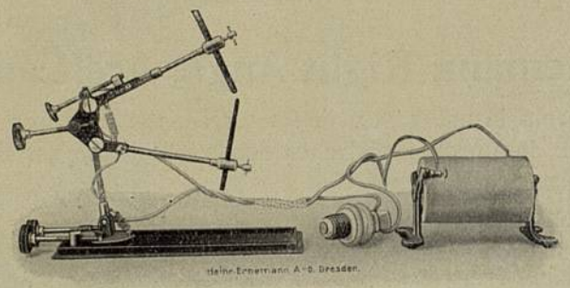

Fig. 17 Scissor Lamp Mod. I 897

## Ernemann Scissor Lamp

The scissor form of lamp is the oldest and cheapest construction in arcs. They are only adaptable for low powers. As in the scissor lamp both carbons are moved together they have the advantage that in low built lamp houses with low optical centres long carbons may be burnt which is the most important advantage the Scissor Lamp offers.

The Scissor Lamp is made in two models. Model I for 10 amps, and Model II for 30 amps.

**Price of the Ernemann Scissor Lamp**

| No. | Code | Model | Weight Kilos | £ |
|---|---|---|---|---|
| 2139 | Scherenlicht | Model I, 10 amps . . . | 1.000 | **1.15.0** |
| 2140 | Scherenlux | Model II, 30 amps . . . | 2.000 | **3. 5.0** |





## Oxygen Lime Light

Where Electric Current is not available the only possible source of light is the Oxygen Lime any other form of lighting being too feeble for Kinematographic Projection, this light is produced by blowing Oxygen through the flame of inflammable gases such as ordinary Coal Gas, Hydrogen, or Aether Gas so that it impinges on a piece of lime and produces a very intensive light. The Oxygen is kept under pressure in steel bottles and is available almost anywhere.

The complete outfit consists of a reducing regulator with pressure guage.

The meter, which is screwed on to the Oxygen Cylinder, thus reducing the pressure and permitting proper adjustment, at the same time giving the pressure and contents of the cylinder. Then there is the burner in which the gases are mixed and which carries the lime cylinder these are made in various sizes but the largest burner is desirable giving with an ordinary mixture 1.500 Candle Power, with the addition of Gasolene 2.500 Candle Power and with Coal Gas and Hydrogen 3.000.

A small burner can be supplied which reduces the following estimate by £ **2** this however, only gives two thirds of the light.

The complete outfit also comprises a Gasolene Saturater in which the Sp G of the Gas must not be greater than 0.65, or a mixture of gas and aether may be used, further a supply of rubber tubing for connecting Burners, Saturater, and the Cylinders is supplied, if Coal Gas is used the Gasolene Cylinder is not necessary if Hydrogen is used a further reducing socket is necessary for the Hydrogen Cylinder.

The Steel Cylinder for the Oxygen may be hired but when using them daily, it is better to buy two bottles one of which is on the way to and from the factory while the other is being used.

**Prices of the complete Oxygen Outfit.**

| Nr. | Code | | Weight Kilos | £ |
|---|---|---|---|---|
| 2270 | Kalklum | Consisting of the largest burner with reducing socket Meter Saturator, Tubeing and 1 doz. Lime Cylinders complete . . . . . | 4.000 | **8.15.0** |
| 2271 | Hydrolum | Reducing Joint for Hydrogen . . . | 1.200 | **3. 0.0** |
| 2272 | Saumin | Steel Cylinders for 500 litres . . . | 15.000 | **2. 5.0** |
| 2273 | Saumax | „ „ „ 1,000 litres . . | 22.000 | **3. 0.0** |
| 2274 | Glutkalk | Lime Cylinders, per doz. . . . . | 1.000 | **0. 7.0** |

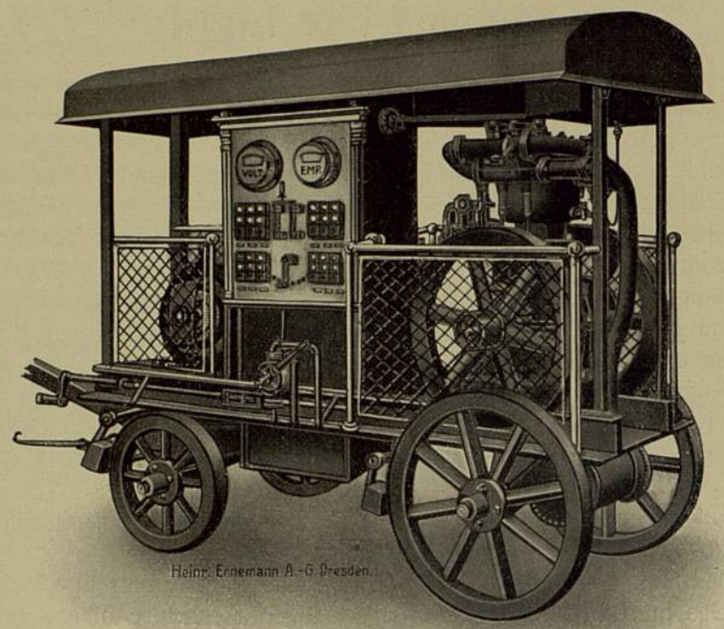


Fig. 17 730

# Electrical Generating Sets

While the Oxygen Limelight gives good results, there is no question that the best light for Kinematographic Projection is the electric arc especially when produced by a direct current.

It is therefore necessary to supply electric theatres in places where no electric current exists, with their own outfit for supplying electricity, and even in places where the electric current is rated at a high price. The outfit when the primary cost has been overcome will supply electricity at a very low price according to the quality of the material from which the power is obtained. The cost is $2^1/_2$ d to $3^1/_2$ d per kilowatt per hour.

Our electric Generating Sets (illustration No. 23) consist of a motor, water cooled apparatus, dynamo and Switch Board. All these are fitted to a very strong and substantial wooden frame work or so called skids. This obviates the necessity of any foundation or such like mounting.

The outfit can be moved about easily from place to place, and as soon as the water cooled tank is filled the machine can be set in motion and current obtained instantaneously.

The power for the motors can be obtained from Benzine, Petrol, or when Gas is available by means of a Gas Outfit.

The consumption of Petrol or Benzine is about 0.4 of a kilo, with Gas 0.8 cub/cm per horse power per hour.





The consumption of oil is reduced to the least possible amount by a very convenient central oil apparatus.

The motor is not an automobile motor, but a strongly built and lasting motor made for the purpose, two heavy fly wheels ensure the absolute quiet and steady running.

The regulation to the revolutions is obtained by a special precision regulator. The sparking is magneto, and as a reserve every motor is fitted with an incandescent sparker.

The whole of the parts with the exception of the fly wheel are protected from dust.

Attention during the work is not necessary as the oiling is automatic.

The Switch Board carries the Amperage Meter and Voltage Meter with switches, and the necessary resistances, for the projection lamp and other lamps three sets of switches are provided.

The outfit is made in five sizes viz: with a motor of 3, 4, 5, 7 or 10 horse power which give 60 volts with respective amperage of 30, 40, 50, 70 or 100.

The whole outfit can be fitted into a waggon, and in this case the machinery part is fitted to an iron base, the roof protecting the outfit from the weather.

The waggon is fitted with four wooden wheels, patent axles, brakes, and shafting for one horse, larger size for two horses. The use of this waggon is recommended for professional shows and for the colonies.

## Price for the Outfit

| No. | Code | Description | Horse power of the motors | 65 volt amp. | Weight Kilos | £ |
|---|---|---|---|---|---|---|
| 2290 | Littleslip | Mounted on skids | 3 | 30 | 550 | **110** |
| 2291 | Slipper | | 4 | 40 | 710 | **130** |
| 2292 | Slipchen | | 5 | 50 | 960 | **150** |
| 2293 | Slipior | | 7 | 70 | 1280 | **190** |
| 2294 | Longslip | | 10 | 100 | 1635 | **235** |
| 2295 | Carcher | Mounted on waggon as described | 5 | 50 | 1800 | **250** |
| 2296 | Carior | | 7 | 70 | 1950 | **280** |
| 2297 | Longcar | | 10 | 100 | 2250 | **335** |

In the above prices the following accessories are included. 1 Tank for motor spirit with conduit pipe, 1 Turning handle, 6 Incandescent tubes, 1 Spirit cask for lamp with tubing, 1 Case of reserve parts, 1 set of spanners, Instructions for Use.

When using Gas the output of the motors is reduced by 10%.

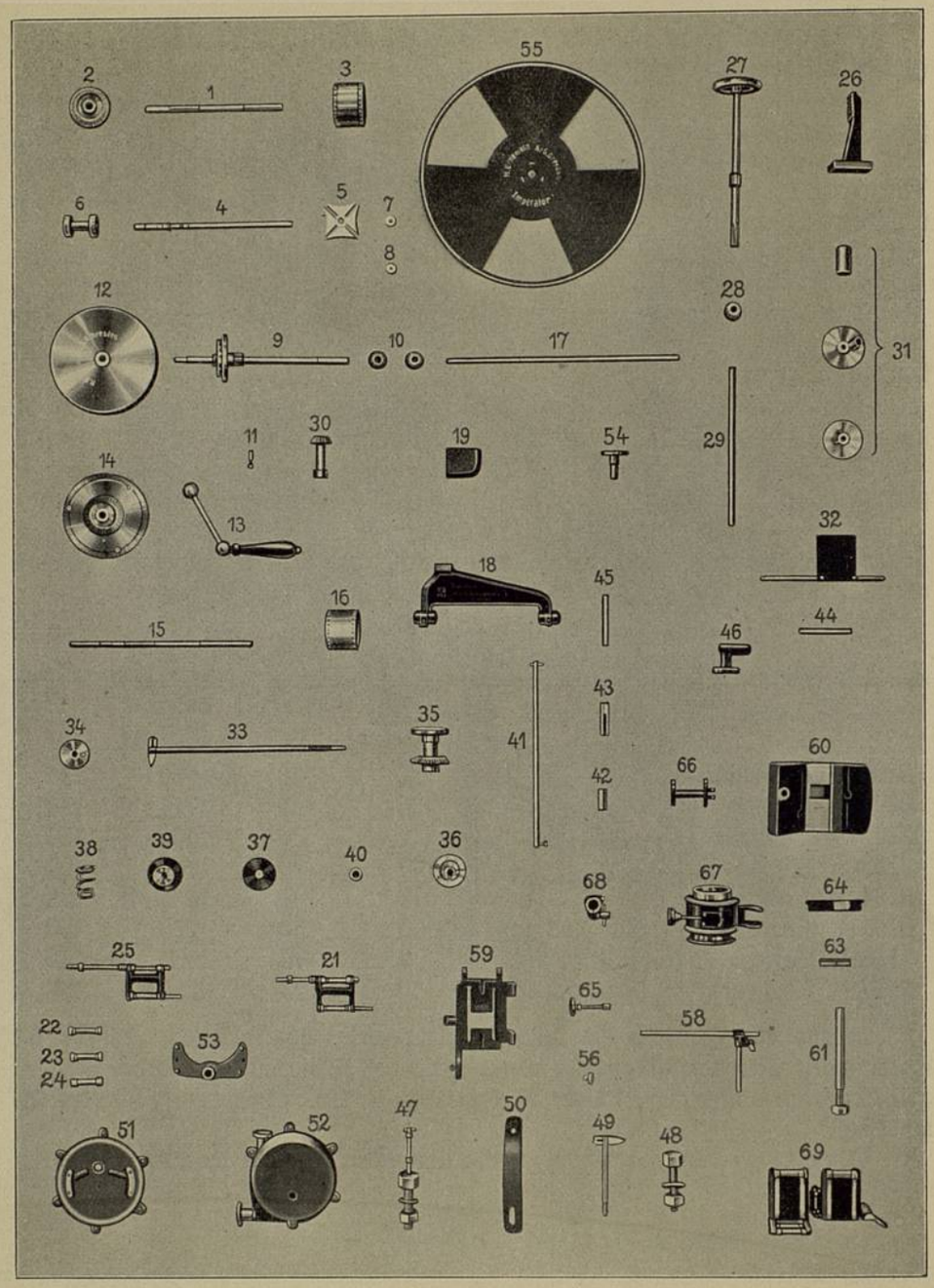


Fig. 18

# Spare parts

1—69

**for Ernemanns Steel "Imperator"**

When ordering the number is alone necessary

911





H. M. the King of Saxony visiting the firm of Messrs. Heinrich Ernemann A. G., Dresden

607

## Spares for the Ernemann Projectors

Like all machines the kinematograph naturally wears out in time and spare parts are required. The part most likely to wear out is the striking sprocket at the end of the Maltese Cross Spindle. This has the hardest work to do and naturally goes first. That is why in our kinematograph it is made of the very best and hardest steel, so that it should not require renewing in less than about 15 months.

On the other hand it is so easily taken off that any amateur can do it without even mechanical knowledge.

After about two years the apparatus should have a thorough overhauling and repair by the makers, and should not be handled by anybody but the factory. It is of course desirable that these repairs should be undertaken in the off season in the height of the summer or autumn, but if the apparatus is not absolutely worn out, it is possible that it may be repaired on the spot with the assistance of the spare parts which we offer.

The spare parts are fully described and pictured overleaf, and it is only necessary to write for so many spare parts No. . . .

A metal worker must be employed to fit these because there is a certain amount of drilling etc. which cannot be done in the factory.

On the other hand we impress the necessity of repairs generally being done by us as very often unskilled labour not only fails in the repair, but causes a great deal of other damage which could be avoided.

# Spare parts
# for the Ernemann "Imperator" Steel Projector

| | | |
|---|---|---|
| (1) | Feed Sprocket Spindle | 7/— |
| (2) | Bevelled gear for same | 7/3 |
| (3) | Feed Sprocket | 20/— |
| (4) | Maltese Cross Spindle | 11/— |
| (5) | Maltese Cross | 20/— |
| (6) | Cross Sprocket | 24/— |
| (7) | Coupling for same | 6 d |
| (8) | Screw for same | 3 d |
| (9) | Fly Wheel spindle with cam | 17/3 |
| (10) | Bevelled gear for fan | 4/— |
| (11) | Maltese Cross pin with roller | 3/3 |
| (12) | Fly Wheel | 9/3 |
| (13) | Handle | 8/— |
| (14) | Large gear wheel with bevel gear | 27/6 |
| (14a) | Ditto with phosphor bronze crown (extra) | 10/— |
| (15) | Main Shaft | 10/— |
| (16) | Take up sprocket | 20/— |
| (17) | Fan spindle | 2/— |
| (18) | Fan bearing | 7/— |
| (19) | Cap to fan gear | 9 d |
| (21) | Complete pressure plate for feed sprocket | 6/6 |
| (22) | Roller for centre of gate | 1/9 |
| (23) | Roller for bottom of gate | 1/9 |
| (24) | Roller for top of gate | 1/4 |
| (25) | Complete pressure plate for take up sprocket | 6/6 |
| (26) | Rack for masking | 2/— |
| (27) | Spindle complete for same | 8/— |
| (28) | Small conical wheel for take up | 5/3 |
| (29) | Connecting Rod (slotted) | 1/3 |
| (30) | Bevel gear | 10/— |
| (31) | Complete fittings for Automatic cut off | 12/— |
| (32) | Automatic Cut off shuitter | 2/— |
| (33) | Spindle for lower arm | 4/9 |
| (34) | Driving Plate for lower arm | 2/— |
| (35) | Conical wheel with friction plate for lower arm | 15/— |
| (36) | Friction plate for lower arm | 2/6 |
| (37) | Leather washer „ „ „ | 3 d |
| (38) | Pressure spring „ „ „ | 9 d |
| (39) | Pressure knob „ „ „ | 3/6 |
| (40) | Adjustment ring „ „ „ | 9 d |
| (41) | Connecting rod „ „ „ | 2/6 |
| (42) | Connecting socket for take up | 1/6 |
| (43) | Long slit socket for lower arm | 2/— |
| (44) | Short Spindle for take up | 9 d |
| (45) | Long „ „ „ „ | 9 d |
| (46) | Take up bearing | 2/9 |
| (47) | Bolts and stripping arm | 2/— |
| (48) | Bolts and nuts for top arm | 1/— |
| (49) | Spindle for top arm | 2/— |
| (50) | Pressure spring for top arm | 9 d |
| (51) | Body of oil bath | 10/— |
| (52) | Cover for oil bath | 6/— |
| (52a) | Packing material for oil bath | 6 d |
| (53) | Bearing in oil bath | 4/— |
| (54) | Steel centre for fan | 2/9 |
| (55) | Fan | 4/— |
| (56) | Skate knobs | 6 d |
| (57) | Skate springs | 2 d |
| (58) | Hinged spindle with corner piece for gate | 2/6 |
| (59) | Gate | 9 9 |
| (60) | Film channel | 12/— |
| (61) | Lens, bar and nut | 2/6 |
| (63) | Skate bridge | 6 d |
| (64) | Skate | 2/6 |
| (65) | Piston for gate | 2/6 |
| (66) | Pressure plate for gate | 2/6 |
| (67) | Lens fitting complete | 32/— |
| (68) | Swing grip for ditto | 1/9 |
| (69) | Channels for spool boxes | 16/— |
| (70) | Pressure plates for stand | 8 d |
| (71) | Oil cups | 4 d |

## Spares for the "Rex" Projector

| | | |
|---|---|---|
| (1) | Take up front sprocket spindle | 7/— |
| (2) | Bevel wheel for same | 7/3 |
| (3) | First Sprocket | 16/— |
| (72) | Complete outfit of maltese cross and intermittant sprocket | 30/— |
| (73) | Fly wheel spindle with cam | 12/— |
| (10) | Bevel wheel for fan | 3/— |
| (12) | Fly wheel | 9/3 |
| (13) | Handle | 4/— |
| (14) | Driving wheel with bevel wheel | 24/— |
| (14a) | Phosphor Bronze Crown for same | 10/— |
| (15) | Second Motion Shaft | 10/— |





| | | |
|---|---|---|
| (16) | Take up Sprocket | 16/— |
| (17) | Fan spindle | 2/— |
| (18) | Fan bearing | 5/9 |
| (21) | Complete clamping rollers for or second sprocket | 6/6 |
| (23) | Bolts and nuts for above or for door | 1/9 |
| (24) | ditto without nuts for upper door | 1/4 |
| (74) | Rack for lifting | 1/— |
| (28) | Small bevel wheel for take up | 5/3 |
| (29) | Take-up spindle for mechanism | 1/3 |
| (31) | Complete Automatic cut off | 12/— |
| (32) | Automatic cut off flap | 2/— |
| (33) | Shaft for lower arm | 2/— |
| (34) | Driving barrel for lower arm | 2/— |
| (76) | Spiral for take-up | 9 d |
| (47) | Bolts with guide complete for lower arm | 2/— |
| (48) | Bolts with nuts for upper arm | 1/— |
| (49) | Axle for upper arm | 2/— |
| (50) | Pressure Springs for upper arm | 8 d |
| (54) | Fan boss | 2/— |
| (55) | Fan | 4/— |
| (56) | Skate knobs | 4 d |
| (57) | Skate springs | 2 d |
| (58) | Pressure screws for gate | 6 d |
| (59) | Gate | 9/6 |
| (60) | Film channel | 12/— |
| (61) | Lens bolts | 2/— |
| (63) | Skate bridges | 6 d |
| (64) | Skates each | 2/6 |
| (65) | Complete catch for gate | 2/6 |
| (66) | Hinges for gate | 2/6 |
| (67) | Complete lens jacket | 32/— |
| (68) | Clamp for ditto | 1/3 |
| (77) | Channels for spool boxes | 6/— |
| (78) | Socket for base | 8 d |

## Spares for the "Monarch" Projector

| | | |
|---|---|---|
| (1) | First Sprocket spindle | 1/— |
| (2) | Cog for first or second sprocket spindle | 2/— |
| (3) | First sprocket | 14/— |
| (4) | Maltese Cross Spindle | 1/— |
| (5) | Maltese Cross | 10/— |
| (6) | Intermittent Sprocket | 14/— |
| (9) | Fly wheel spindle with fly wheel and cam | 15/— |
| (10) | Bevel wheels for fan | 1/6 |
| (11) | Pin for maltese cross | 3 d |
| (13) | Handle | 2/— |
| (14) | Take up wheel | 4/9 |
| (15) | Take up spindle | 1/3 |
| (16) | Take up sprocket | 14/— |
| (17) | Fan spindle | 1/— |
| (18) | Fan boss | 3/6 |
| (21) | Complete pressure outfit for either sprocket | 2/6 |
| (79) | Springs for ditto | 3 d |
| (23) | Hinge and nuts for ditto or for gate | 1/3 |
| (80) | Rack for lifting | 1/— |
| (81) | Spindle for ditto | 4/— |
| (82) | Cog for take-up | 3/6 |
| (32) | Fire proof flap | 1/3 |
| (33) | Axle for lower arm | 4/4 |
| (83) | Spring for lower arm | 4 d |
| (84) | Spiral for take-up | 8 d |
| (47) | Bolts with driver for lower arm | 1/3 |
| (85) | Bolts for upper arm | 6 d |
| (49) | Axle for upper arm | 1/6 |
| (86) | Pressure apring for upper arm | 4 d |
| (54) | Fan boss | 1/— |
| (55) | Fan | 1/6 |
| (87) | Skate springs | 6 d |
| (88) | Pressure frame for gate | 3/— |
| (59) | Gate | 2/6 |
| (60) | Film channel | 6/— |
| (65) | Piston | 1/6 |
| (66) | Pressure fitting for door | 2/9 |
| (67) | Lens carrier | 32/— |

## Spares for the "Prince" Projector

| | | |
|---|---|---|
| (3) | First Sprocket (Magnalium) | 5/— |
| (4) | Maltese Spindle | 1/— |
| (5) | Maltese Cross | 5/— |
| (6) | Intermittant Sprocket | 5/— |
| (9) | Fly Wheel Spindle with fly and cam | 10/— |
| (10) | Bevels for fan | 1/3 |
| (11) | Maltese Cross pin | 3 |
| (16) | Take up sprocket | 14/— |
| (79) | Spring for Pressure Plates | 3 d |
| (23) | Pressure with nut for pressure plate or gate | 1/3 |
| (83) | Driving Spring for lower arm | 4 d |
| (84) | Spiral for take up | 9 d |
| (86) | Pressure spring for lower arm | 4 d |
| (54) | Fan boss | 1/— |
| (55) | Fan | 1/— |

# Ernemann Kinematograph Camera

**for Standard (Edison guage) films**

**Model A**

This Camera takes 200 feet of film. By a simple arrangement the film box can be rapidly exchanged, so that no great pause is necessary in substituting further lengths.

The mechanism is constructed on the "Claw" System, which has been found to give the greatest certainty and steadiness.

The Lens has a large aperture and passes a lot of light, with great depth of focus. It is a double Anastigmat working at f. 5,4, with a focus of two inches, but a longer focus can be mounted if desired. The Lens is fitted in a Focussing Jacket, so that it can be used at various distances.

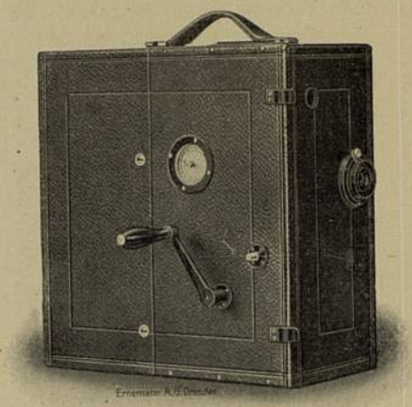

Fig. 19 735

The Fan Shutter is adjustable to various widths of slit. A large finder is fitted which shows a picture of two-and-a-half times the actual size.

As will be seen from illustration No. 2 the Camera contains two boxes or dark-slides, one is filled in the dark-room with the roll of film, the end of which is passed through a slit and over the transporting sprocket, looped, and then passed through the gate, which is hinged, then looped again and passed under the transporting sprocket, and so into the lower box, in which there is a take-up spool.

A dial is fitted showing exactly how many yards of film have been used.

When the film has been used up, the lower film box, which then contains the film, can be removed and the upper film box slipped into the place of it, a filled film box taking its place above.


Fig. 20 726

The handle is detachable and when a picture is being taken it is fitted to the lower spindle.

By means of a simple contrivance the Camera can also be used for **Printing,** in which case the handle is fitted to the upper spindle and so a slower motion is obtained, the positive film being run from box to box as when taking, while the negative film passes from a spool on the top of the Camera through a slot, then in front of the positive film and out of the front at the bottom. The Camera is made of Mahogany covered with the best leather.





**Price of the Ernemann-Kino Model "A"**

| No. | Code | | Weight Kilos | £ |
|---|---|---|---|---|
| 2501 | Anormal | 1 Ernemann-Kino Model "A" with 2 slides each for 200 ft. with Ernemanns 3,5 Double Anastigmat 2 inch. focus . . . . . | 5.500 | **21. 0 0** |
| | | Extra for Tropical finish . . . . | — | **4. 0 0** |
| 2502 | Extrette | Extra slides each . . . . . | 0.400 | **1. 5 0** |
| 2503 | Kopierung | Printing Outfit . . . . . | 0.500 | **1. 5 0** |
| 2504 | Seglertasche | Water Proof Canvas Case . . . . | — | **—.15.0** |
| 2505 | Taschenleder | Solid Leather Case . . . . . | — | **1.10.0** |
| 2506 | Einstellwinkel | Focussing fitting with a magnifying lens | — | **1. 0.0** |

Price for Tripods etc. (see page 39).

**Send for particulars of the Ernemann Jubilee £ 50 Prize Competition for the best pictures taken with the Ernemann-Kino.**

# Ernemann Kinematograph Camera

**Model B**

The Camera is specially adapted for Film Theatres and institutes where highest efficiency is necessary, it is fitted with all the necessary movements for all possible requirements for Trick Films and rapidly changing scenes etc.

It will take 400 ft. of film, the dimensions in spite of its great capabilities are reduced to a minimum. The apparatus is now made with a so-called **Tropical Finish** that is the body and the slides are made of polished Teak with coppered brass fittings. The method of carrying the Film is the so-called "Greifer" or "Claw" which ensures absolute steadiness of the picture. The film passes out of one film box over a sprocket through an exposure window over a second sprocket into the receiving box. The Fan shutter, which is adaptable for various widths of slit, passes very closely in front of the film, and the exposures are easily estimated, for example: with 1 mm slit the exposure given is $^1/_{5000}$ th of a second; the full opening is $^1/_{69}$ th of a second. It is thus possible, in cases where there is very quick movement, to get absolutely sharp pictures without running the film above the normal rate.

Fig. 21 901

The whole mechanism for moving the film and for taking-up and rewinding is built on to a strong metal plate which ensures as much stability and precision as is obtained by our **World Renowned Projector the "Imperator".**

For trick films it is possible to run the film backwards and forwards, and while running backwards the double exposure may be used or not, as may be necessary.

The Slide or Film Box which contains the unexposed film is marked "A" and the slide in which the exposed film is wound up is marked "B". If the handle is turned to the right as under normal exposure it is obvious that "B" will be connected with the take-up mechanism. When reversing however, and running the machine backwards the take-up mechanism automatically couples up to Slide "A" and rewinds the film, or again reversing the action the take-up mechanism reverts to the original slide.

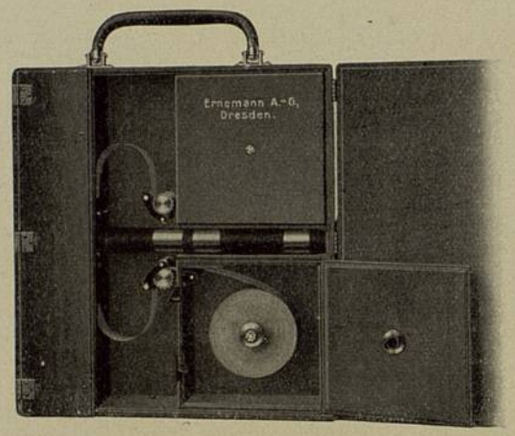


Fig. 22 902

The dial indicates how much of the 400 ft. of film has been used and of course reverses with the rest of the Camera if the film is reversed. As a rule the Camera is fitted with an F 3,5 Double Anastigmat of 2 in. focus and this is fitted on a revolving front on which lenses of different foci can be fitted and can be quickly substiuted one for another giving a wide range of possibilities in the size of the particular object of the picture.

The lens board is not mounted on the Camera Door as heretofore but direct on [illegible]is prevents any slight alteration in the position of the [illegible]eing taken can be watched generally on a large matted can be sharply focussed by the scale on the focussing mount of the lens or on a matted screen or on the film itself in the Film Window and observed from the back of the camera through a tube and a magnifying glass this glass can be adapted to suit every eye-sight, it magnifies the image and permits extraordinary sharp focussing.

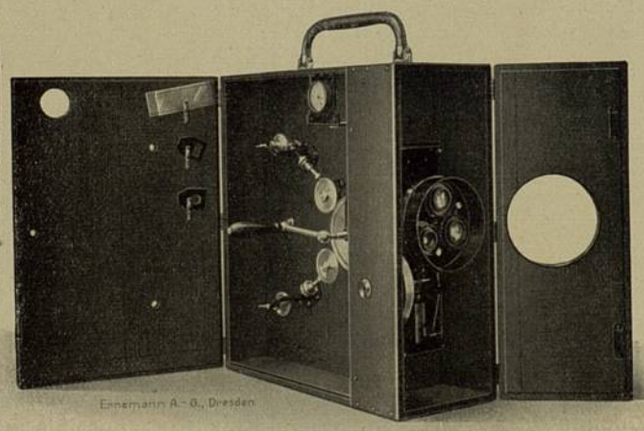


Fig. 35 903





The Film window can be fitted with masks which can give any desired shape to the picture for example, as though it was being taken through telescopes, Opera Glasses, Key holes etc., with every apparatus a collection of these masks and the proper sized sheets without cut-outs are supplied so that any necessary shape needed can be made. A punch is fitted to mark the film at any desired point.

From the above remarks it will be seen that the: — Ernemann Kinographic Camera Model "B" is the most complete and precise instrument that is made for Kinematography.

**Prices of the Model "B" Kino Camera**

| No. | Code | | Weight Kilos | £ |
|---|---|---|---|---|
| 2550 | "Benom" | The Camera complete in tropical finish, with two slides and one Ernemann Double Anastigmat F 3,5 2" focus with focussing magnifier | 8.000 | **47.10.0** |
| | | **Extras:** | | |
| 798 b | Stigmal | Ernemann Double Anastigmat F 3,5 $2^1/_2$" in Focus . . . . . | 0.200 | **4. 5.0** |
| 799 b | Stigmittel | Ernemann Double Anastigmat F 3,5 $3^1/_4$" or $3^1/_2$" in Focus . . . . . | 0.200 | **4.15.0** |
| 801 b | Stigriese | Ernemann Double Anastigmat F 4,5 $4^3/_4$" in Focus . . . . . | 0.200 | **3.10.0** |
| 2553 | Kasextra | Extra Slides, each . . . . . | 0.900 | **2. 0.0** |
| 2554 | Taschensegel | Waterproof Canvas Case . . . . . | — | **1. 0.0** |
| 2555 | Taschenrind | Solid Leather Case . . . . . | — | **2. 0.0** |

## Tripods for Kinematography.

The use of Extra Strong Steady Tripods is essential so that all vibration is eliminated. We recommend two forms both of which are exceptionally stable. The first is a simple double folding Tripod which, when closed up is 30 in. long, when opened is 56 in. high and as the lens is another 8 in. above, this makes a total height of 64 in. which is sufficient for normal working, being about the position of an ordinary person's eye.

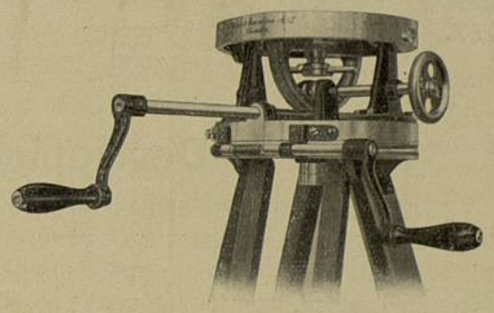

Fig. 24 719

The second Tripod is a very strong but light **Ladder Stand,** when closed it is only 35 in. long but extended it is 75 in. high, which with the lens centre gives a total height of 86 in. the Tripod is three-fold, the lower leg being telescopic and with provision for focussing at various heights, to this is fitted a Standing Rail which can be adapted from 12 in. to 25 in

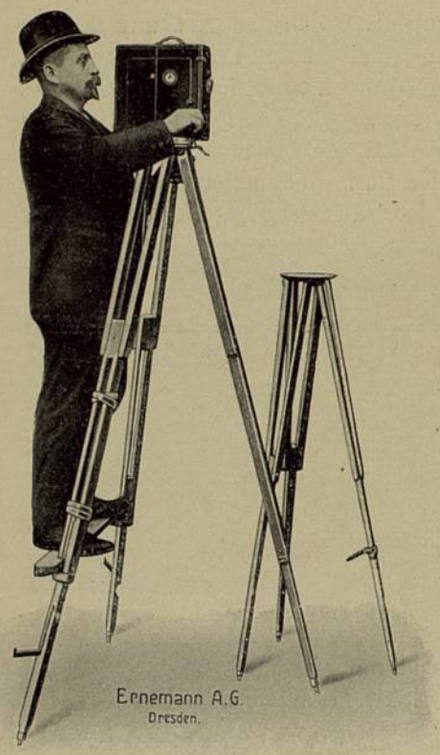


Fig. 25 728

from the ground, the Operator stands on this and is therefore well above the ordinary crowd. This Tripod is especially recommended for use at public processions etc. Our Tripods can be fitted with three forms of top, the first is an ordinary simple top which fits in between the three fastenings of the tripod and has no movements. When taking Mililtary parades, processions, etc., it is desirable that the apparatus should have the means of following certain people and this necessitates the use of a panorama top. Our Panorama tops are fitted with Rack and Pinion and by turning the handle the whole apparatus is slowly revolved in a horizontal position, this is the Simple Panorama Top. There is another fitting however which is illustrated in illustration No. 24 by means of which a vertical movement can be imparted to the Kino by turning a further handle.

**Prices of the Ernemann Tripods**

| No. | Code | | Weight Kilos | £ |
|---|---|---|---|---|
| 2560 | Stativzwerg | Two fold ordinary Tripod . . . . | 4.400 | **1.12.0** |
| 2561 | Stativriese | Three fold ladder Tripod . . . . | 7.700 | **4. 4 0** |
| | | **Extras:** | | |
| 2570 | Simpelkopf | Simple Focus Head . . . . . | 0.500 | **6 0** |
| 2571 | Drehkopf | Simple Panorama Head . . . . . | 1.100 | **3.15 0** |
| 2572 | Doppelkopf | Panorama Head, vertical and horizontal movements . . . . . | 2.250 | **9. 9.0** |

# Developing outfit

The outfit for development is arranged according to the quantity of the films, we recommend that when a picture is taken on several different occasions it is desirable to cut the film at the end of each episode and develop the piece that has been exposed, later joining up the negative and making the positive in one piece.

One method of developing is called Frame Development, where the film is wound round a frame and developed in a large dish, for short lengths glass dishes of 20×24 in. are made and simple aluminium frames which will take





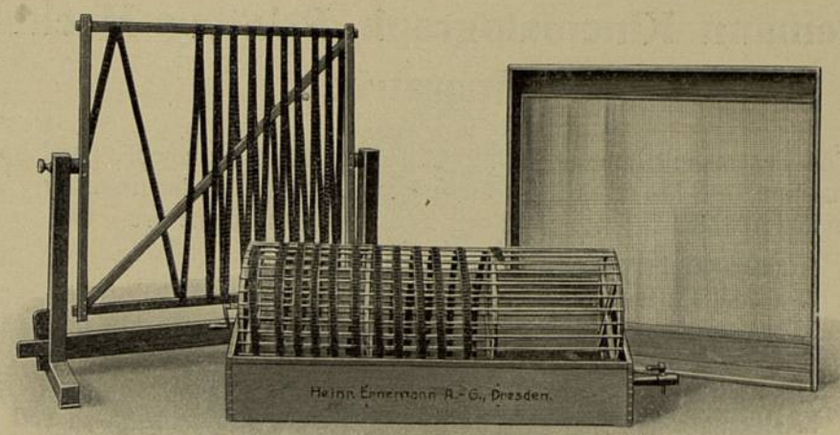


Fig. 26 727

about 45 ft. of film, or double wooden frames which will take up to 74 ft. can be used, if however long lengths have to be developed, such lengths as are taken in the Ernemann Model "B" Camera, then a dish about 40×30 in. must be used, these are best made with Pitch Pine edges and Plate Glass bottoms and the Developing Frame will take 60—70 yds of film, we also make a useful stand for winding films on, and off the frame, and for holding the frame while the film is drying.

When the Dark Room is limited in size we recommend development on drums, the drums we make take 60 yds of film and are made of pitch pine as also are the troughs in which the drums revolve. The troughs are fitted with a tap and the frame with a water wheel which keeps it revolving under running water for washing purposes, for proper photographic work in every case at least three dishes or troughs are desirable which answer, one for developing, one for fixing, and one for washing. To dry the film leave each length either on the frame or the drum as the case may be.

**Prices**

| No. | Code | | Weigth Kilos | £ |
|---|---|---|---|---|
| 2601 | Papierwickel | Papier Mache developing dish 20×24 in. | 4 800 | **0.12.0** |
| 2602 | Glaswickel | Glass developing dish 20×24 in. . . | 9 000 | **1. 5.0** |
| 2603 | Alurahmen | Aluminium Frame, 20×24 in. . . . . | 0 300 | **0. 6.0** |
| 2604 | Doppelwicklung | Double Wooden Frame 20×24 in. . | 1.500 | **1. 5.0** |
| 2605 | Drahtschale | Developing Dish 30×40 in. Wooden sides Plate glass bottom . . . . . | 24.500 | **4. 0.0** |
| 2606 | Doppelente | Double Developing Frame taking 60 yards of film . . . . . | 3.700 | **1.15.0** |
| 2610 | Bockfilm | Stand for Revolving the frame on . . | 5.600 | **1.10.0** |
| 2620 | Ententrommel | Developing Drum . . . . . | 6.000 | **3. 0.0** |
| 2621 | Ententrog | Developing Trough . . . . . | 29.000 | **3. 0.0** |

# Ernemann Kinematograph Printing Machine "Imperatrix".

The Ernemann "Imperatrix" Model 1913 is the most complete and up to date machine that has ever been offered to the Film Printing Industry. The characteristics which are not combined in any other machine are

1. absolute sharpness of the printed picture,
2. absolute steadiness of the picture when projected,
3. extraordinary durability of the machine due to the use of the best wearing material possible, and to the heavy construction,
4. most rapid action, and therefore enormous output,
5. automatic stopping as soon as the negative has come to an end.

We have in this printing machine the "Imperatrix" assembled a machine which we are certain combines all the highest ideals of film manufacturers. It is un-excelled for the quality and quantity of the films it will turn out, and the certainty with which the action takes place.

The Copying Machine itself is a double walled case built of oak stood upon a table. Underneath this is a case for receiving printed film and the negatives.

The machine is driven entirely by an electric motor, and where possible direct current should be used. The exposure is made by the Metal Planet system, the total consumption of electric current is less than 1 amper.

The materials of the machine are the same as are used in our well known Steel Projector the "Imperator" viz:–best silver steel for all spindles, phosphor bronze for the bearings, while the eccentrics and cams are of hardened tool steel. The Transport Mechanism is carried on a strong cast iron plate strengthened with ribs so that warping is quite eliminated. The cover plates are of bronzed steel plating.

The Channels, on which depend the quality of the copy, are run in ground steel prisms which after many years use, if they show the slightest wear, can be regulated by the prism bearings at once.

The Film Transport is the claw system. This system offers the most certain method for obtaining steadiness of the picture. By the use of a light break on the negative film the steadiness of the picture is further insured even when there is a slight difference in perforations of the negative and positive films.

In order to prevent accidental exposure when inserting the Films there is a ruby glass slide easily approached from the outside. This permits a red light in the interior when filling the films without influencing the emulsion at all.

At the moment of exposure the negative and positive films are pressed into contact by a similar ruby glass screen, and as the light cut off of the exposure fan is also composed of a light screen, an uninterrupted view of the films may be obtained during the whole process. The machine is fitted with an interchangeable green and yellow filter. By the use of these, thin negatives may be made to give positives rich in detail with soft half tones. The arrangement of





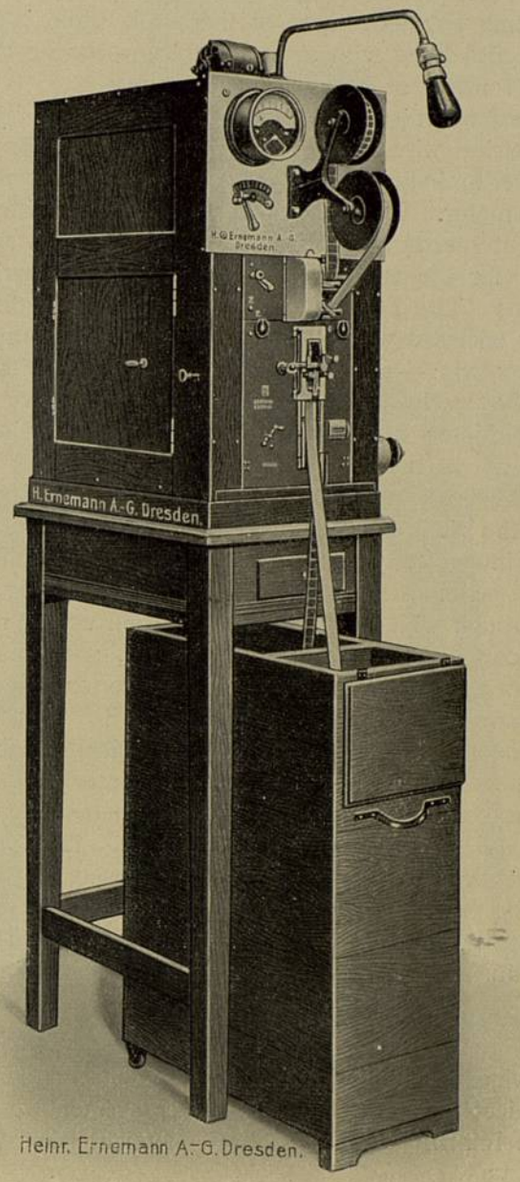


Fig. 27 933

## The Ernemann Kinematograph Printing Machine "Imperatrix"

the masking of the picture is governed by an automatic cam brake which absolutely prevents any movement of the mask while copying is in process. The machine is also fitted with a meter which totals up the actual number of pictures copied (1 meter of film gives 52 pictures).

The electrical outfit is fitted on a switch board which by the simple connecting the two electrical wires makes the machine ready for use. On this switch board is a voltmeter for indicating the voltage of the lamp, and one resistance each for the lamp and the motor. It has eight plugs so that eight different light intensities, and eight different speeds are obtainable, besides on this switch board is found the main switch for the current, and lastly the spool carriers for the negative and positive films. The Driving of the machine from the motor is not done by belts but by enclosed worm-gearing therefore the many troubles connected with belt driving viz: — slackness, dropping and tearing during action are obviated, and the slackening off of the machine during exposure absolutely eliminated. The Motor can run continuously, and it is only by moving over the clamping cams on the lower shafting that the driving gear is brought into action and the motor coupled up with the copying machine. By pressing on a small knob on the right hand side this coupling is again thrown out, and the printing machine immediately stops without having to cut off the current. Particular notice should be taken of the fitting which prevents rolling up the Positive Film after running through with the negative. As soon as the negative film has run to an end the coupling automatically drops out, and the machine stops itself dead. When an operator has to attend to two or three machines this is a most important advantage.

The machine stands on a heavy table with lock up drawers.

Negative and Positive Films run into separate compartments underneath the table. These compartments are on rollers so that they are easily run from the Copying Room into the Developing Room. The Compartment for the Positive Film is light tight and fitted with closing flaps so that the film if necessary may be passed through normal lighted rooms.

The above description proves that the **Ernemann Copying Machine** "Imperatrix" is the most complete apparatus at present offered to Film Factories.

**Price**

| | | |
|---|---|---|
| Ernemann Copying Machine "Imperatrix" including motor and complete electrical outfit and lighting arrangement . . . . . | | £ **77.10.0** |
| Code Imprix | Weight Kilos 74.000 | |
| Oak Table and Film Cases . . . . . | | £ **7.10.0** |
| Code Tischkasten | Weight Kilos 40.000 | |

NB. When ordering the voltage and description of current must be given.





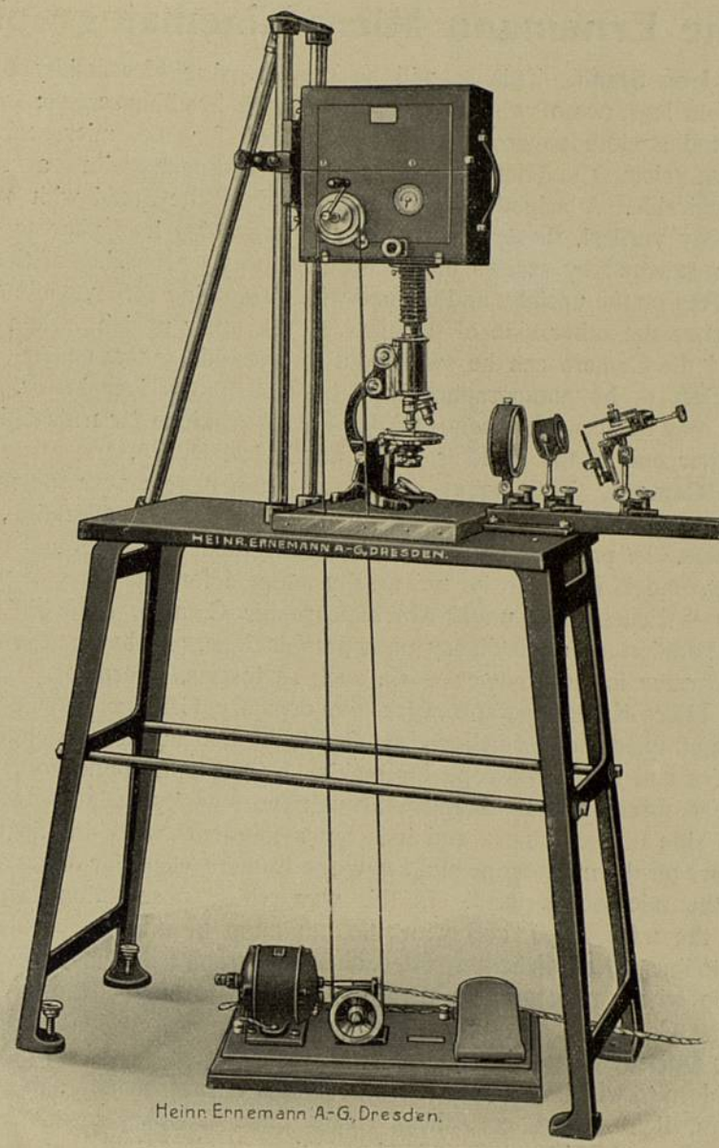


Fig. 28 913

## Ernemanns Micro-Kine Apparatus

special list on application

# The Ernemann Micro-Kinematograph.

**The Iron Stand.** This as will be seen consists of a solidly constructed table on four legs, two of which are provided with levelling screws; on the table top is found a cloth covered wooden baseboard for the microscope with a screw-down clamp to hold it steady a microscope with a horse-shoe foot is desirable. A tripod occopies one end of the Stand with two of its legs perfectly vertical, these serve to carry a travelling iron plate to which the Camera is attached by screws in the ordinary way. One side of the Camera-plate revolves on the upright, and is fitted with a clamping screw, while a clamping lever attaches the other side of the plate to the other upright, when this lever is released the Camera can be swung out to one side so that ocular observation of the object to be photographed may be made, thus illuminator, light, and objectives may be accurately centred just as is always done for critical observation. To the other end of the stand is fixed the Optical Bench,

**The Camera.** This points downwards immediately over the microscope, a condition of affairs that might strike one on first consideration, as being objectionable. In practice, however, this arrangement will be found to be most convenient, and is likely to be universally adopted for this class of work.

This is Ernemann's unual Kinematographic Camera, Modell "A", which, with the addition of an ordinary photographic lens, can be removed from the micro apparatus for low power work, such as insects, caterpillars, etc. etc.

For Micro-Kinematograph work the ordinary Camera Lens is removed, and the small quadrangular bellows attached to the lens board is extended between the Camera and the microscope for making a light-tight connection.

Direct observation is obtained through the magnifying loup tube projecting from one side of the camera and it is but a moments work to slip the expanding bellows off the microscope and swing the Camera clear for direct observation through the microscope itself. In this way critical observation can be made direct at the microscope, and with the minimum of time the camera can be thrown into line, extension bellows fitted, and photograph taken, and the observation during the whole photographic period, continued through the magnifying loup tube of the Camera.

**The Optical Bench** is a carefully planed up and trued iron girder, which carries riders to which are attached the various fittings, namely: the illuminant, condensers, light filters, etc., these riders have clamping screws and are all accurately centred, with means of using obligue illumination of necessary.

Next, is a 60 mm diameter condenser, an adaption of the Herschel type, consisting of a combination of a Meniscus and Plano Convex Lens.

Betwen the light and the swivel mirror at the base of the microscope is a liquid light filter and heat absorber, which appears to be most efficient.

**The Motor** is a $^1/_8$th H P. and works against a worm gearing which drives a fly-wheel, this wheel is connected by a belt with the driving pulley of de Kinematograph, and by means of the triplecut wheel various speeds can be obtained.





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