

A
**PROTOTYPE 35 mm
MOVIE PROJECTOR**

In the Collection of Soterios Gardiakos

Made by

CARL J. LANG

March 21, 1885 – March 17, 1970

(Lang Manufacturing Works)

Of

Olean, New York

Information Compiled

By

Soterios Gardiakos

March 15, 2010, October 10, 2011

UNIGRAPHICS INC.

Aurora ~ Kalamata

2008

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Soterios Gardiakos
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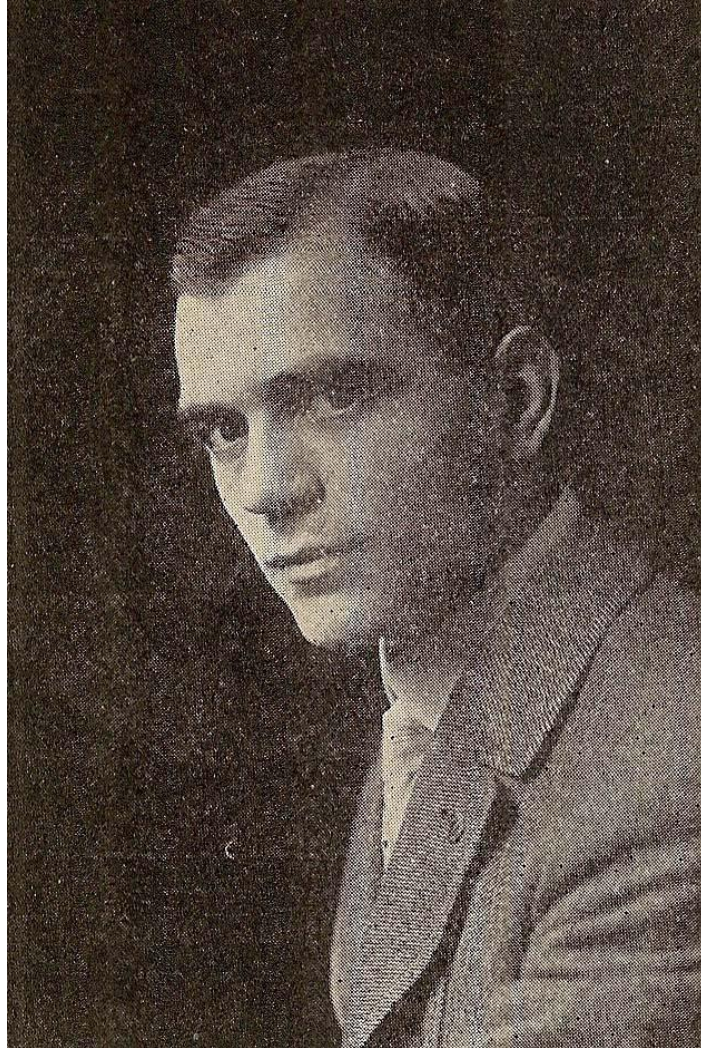
<http://www.bioscope.biz/>

<http://gardiakos.com/>

UNIGRAPHICS INC

Aurora, Illinois. U.S.A.

Kalamata, Messíniás, Greece



Carl James Lang

March 21, 1885 – March 17, 1970

INTRODUCTION

On February 7, 2008 it arrived. I had been the high bidder on this Lang prototype two shutter 35 mm movie projector made by Carl C. Lang of Olean, New York. Bob Wilson, the seller, was kind enough to include some wooden patterns, two of which are here illustrated, and one part of a Lang 35 mm film rewinder. I want to thank Bob for his kindness.

I immediately started searching through my library and of course the internet to find more information, than had been forwarded to me by Bob. It soon became apparent that there was very little on Carl C. Lang, and *The Lang Manufacturing Works*.

I wrote to The Olean Historical Society and to a local historian of the same city for their help in obtaining more information that might be in their archives. They have not replied although I sent a second letter to both.

My other source was the United States Patent office and I am including these patents, though I feel there are other patents by Carl C. Lang that I was not able to find.

As for the prototype projector itself it has very many similarities to the Powers Cameragraph No 5; it differs however in that it has two shutters rather than one. To the best of my knowledge there was only one other machine with external dual shutters and this is the Monarch Projector made in Chicago, Illinois. I have been informed by my good friend Mr. George Kordelakos that the 28 mm Victor Safety Cinema also has two shutters which turn co-axially in opposite directions but are internal.

The machining is of the highest quality and there is also a certain German feel to it, attesting to his German background.

At the end of October 2009 I received an email from Kim Hudson of Rochester, New York, Informing me that she is the great granddaughter of Carl James Lang and found my website <http://bioscope.biz/>, and although she did not really know her grandfather because she was seven when he passed away, but she did know that he knew Thomas Edison and George Eastman. One of her aunts, Lang's granddaughter might provide me with some information.

The result was that her Aunt, Kathy Stewart of Geneseo New York, did write me and sent me the "Film Reel Deluxe" brochure which I have added to this book. She also sent me patent number 911,412 (Lang's patent film rewinder) as well as newspaper clipping on her grandfather which said information is herein partially included, as well as the photos in the Lang Family Photo Album section of this book.

Carl J. Lang was born in Oppenheim Germany on March 21 1885. As youngster he visited the United States every two years with his family and therefore learned English well, and finally settled here at the young age of 16 in 1901.

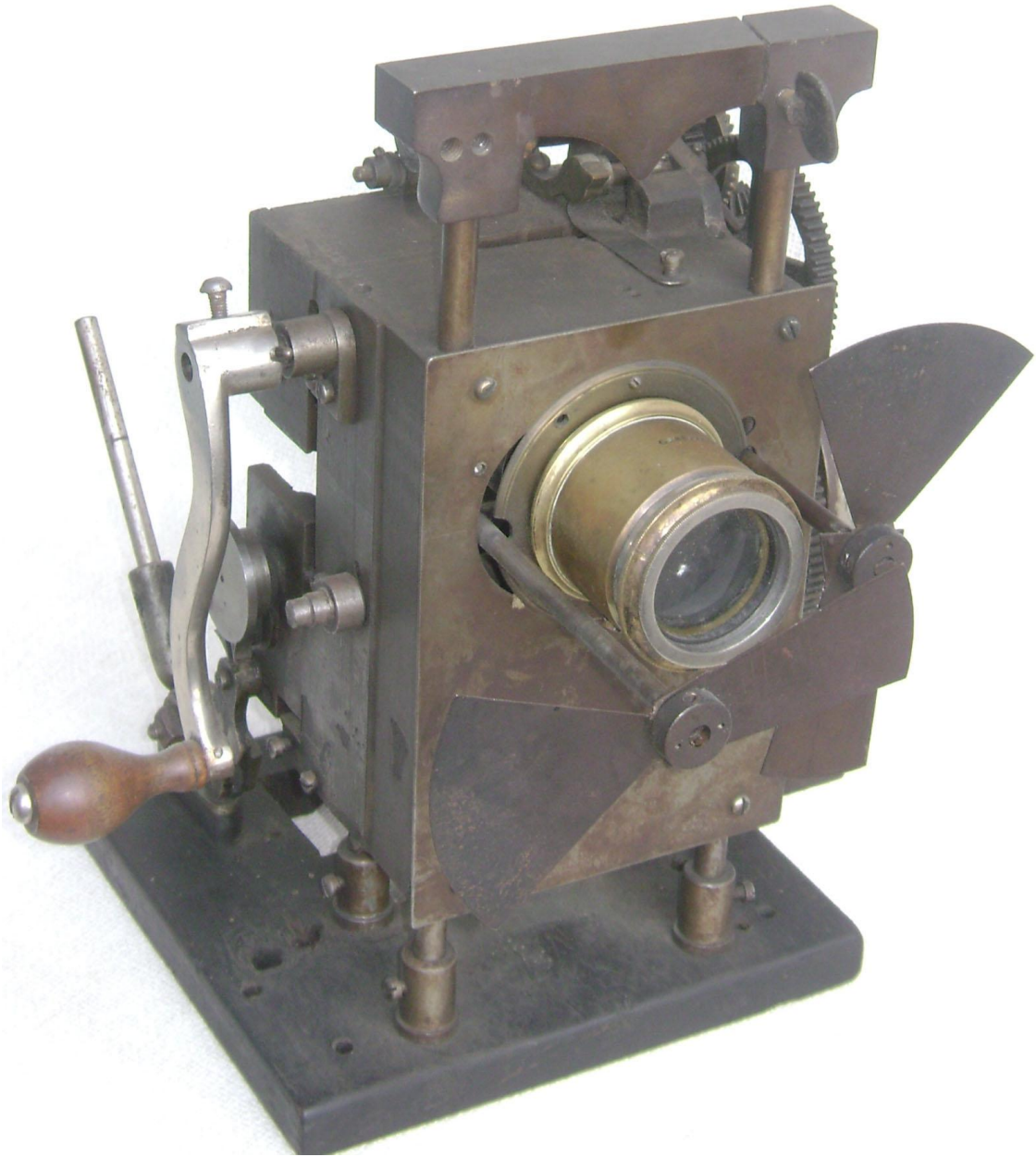
All the information I could find is included in this little pamphlet on Carl J. Lang any errors are mine.

Soterios Gardiakos
June 7, 2008

Mrs. C. Kathy has continued to furnish me with additional information and the family photograph included in this monogram and to her I am thankful for making this a more complete work on the life and works of Carl J. Lang.
Soterios
January 4, 2009

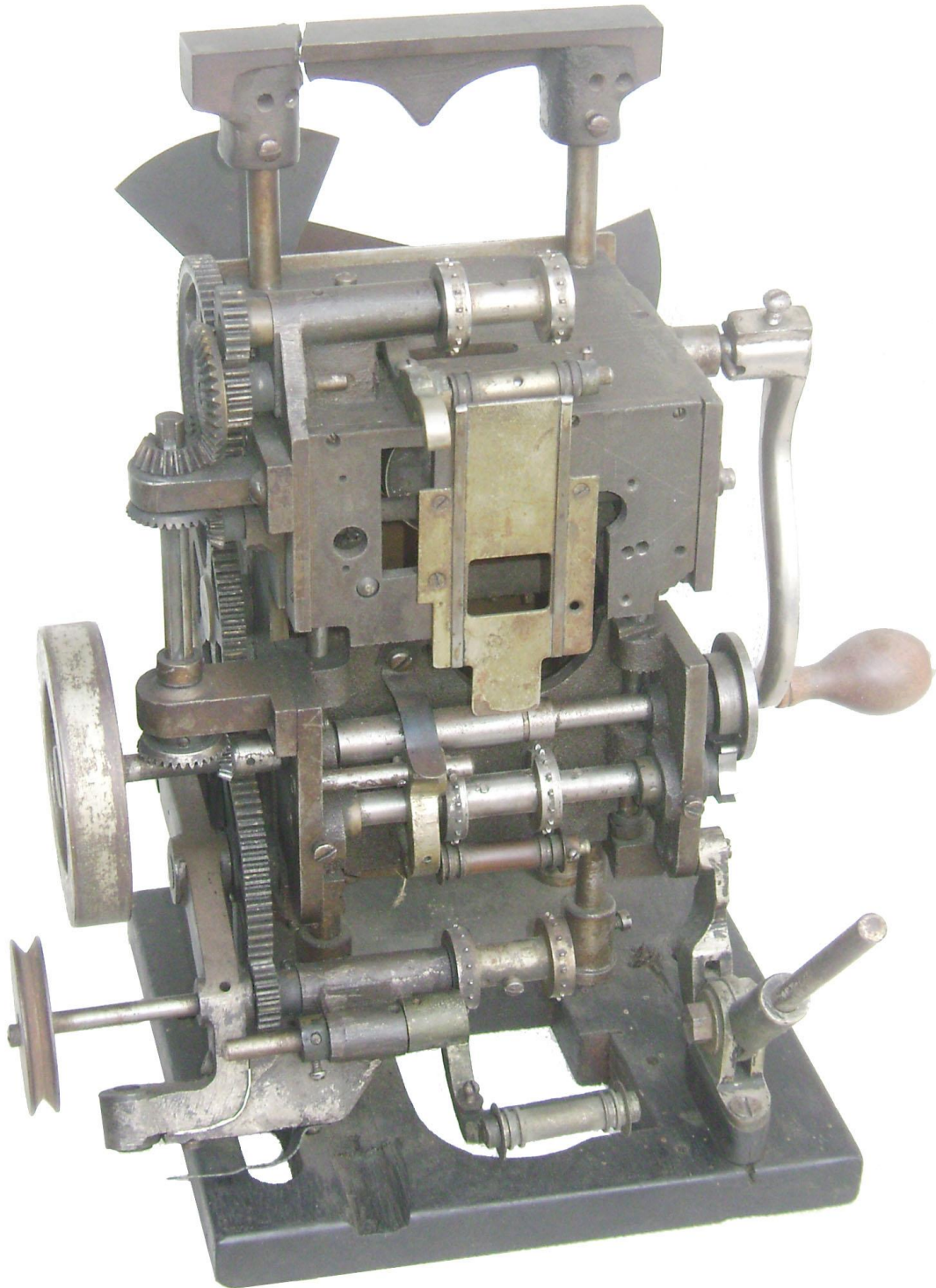
**I
LANG'S PROJECTOR
AND
REWINDER**

THE PROJECTOR



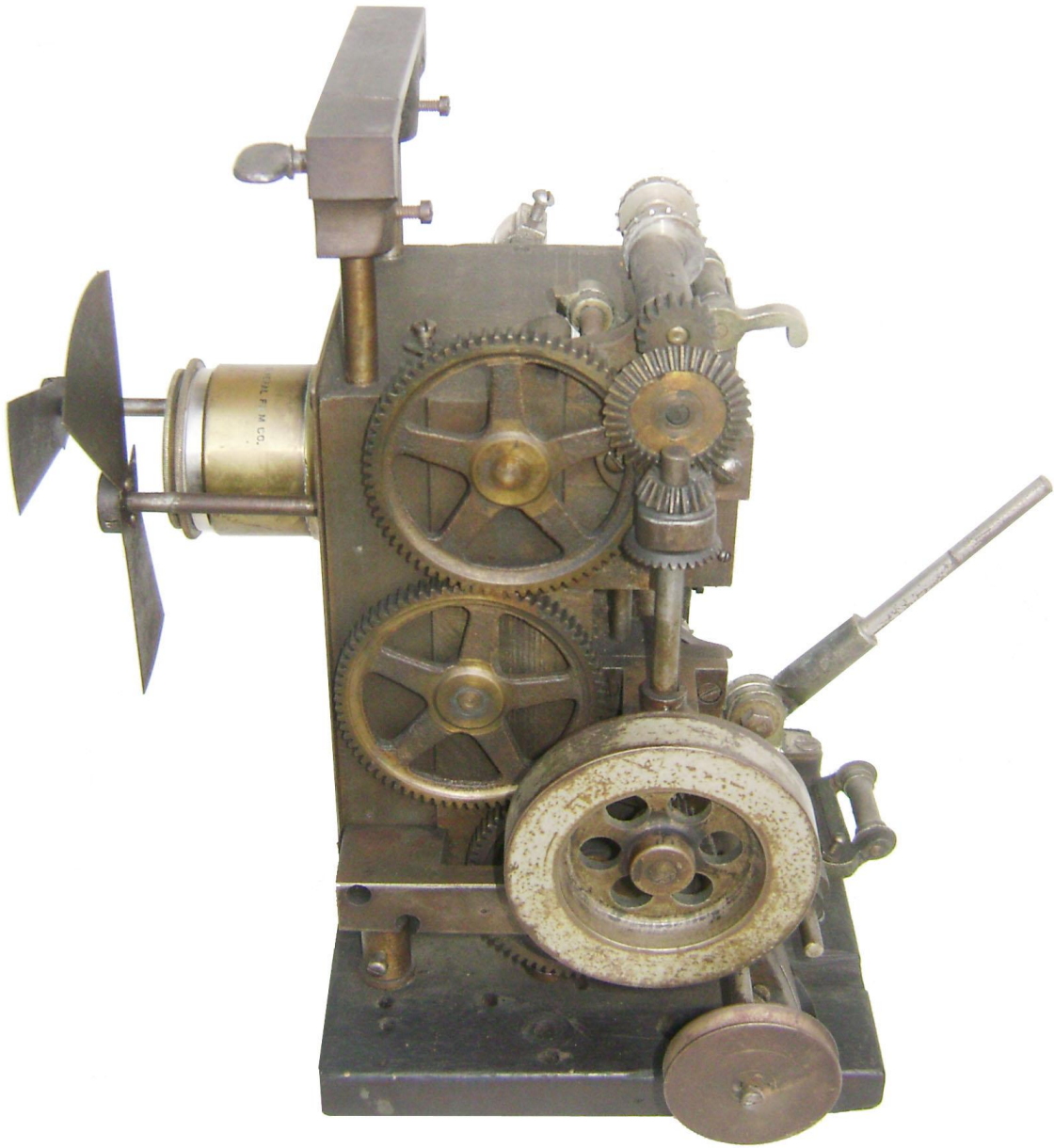
Lang prototype 35 mm Movie Projector

THE PROJECTOR



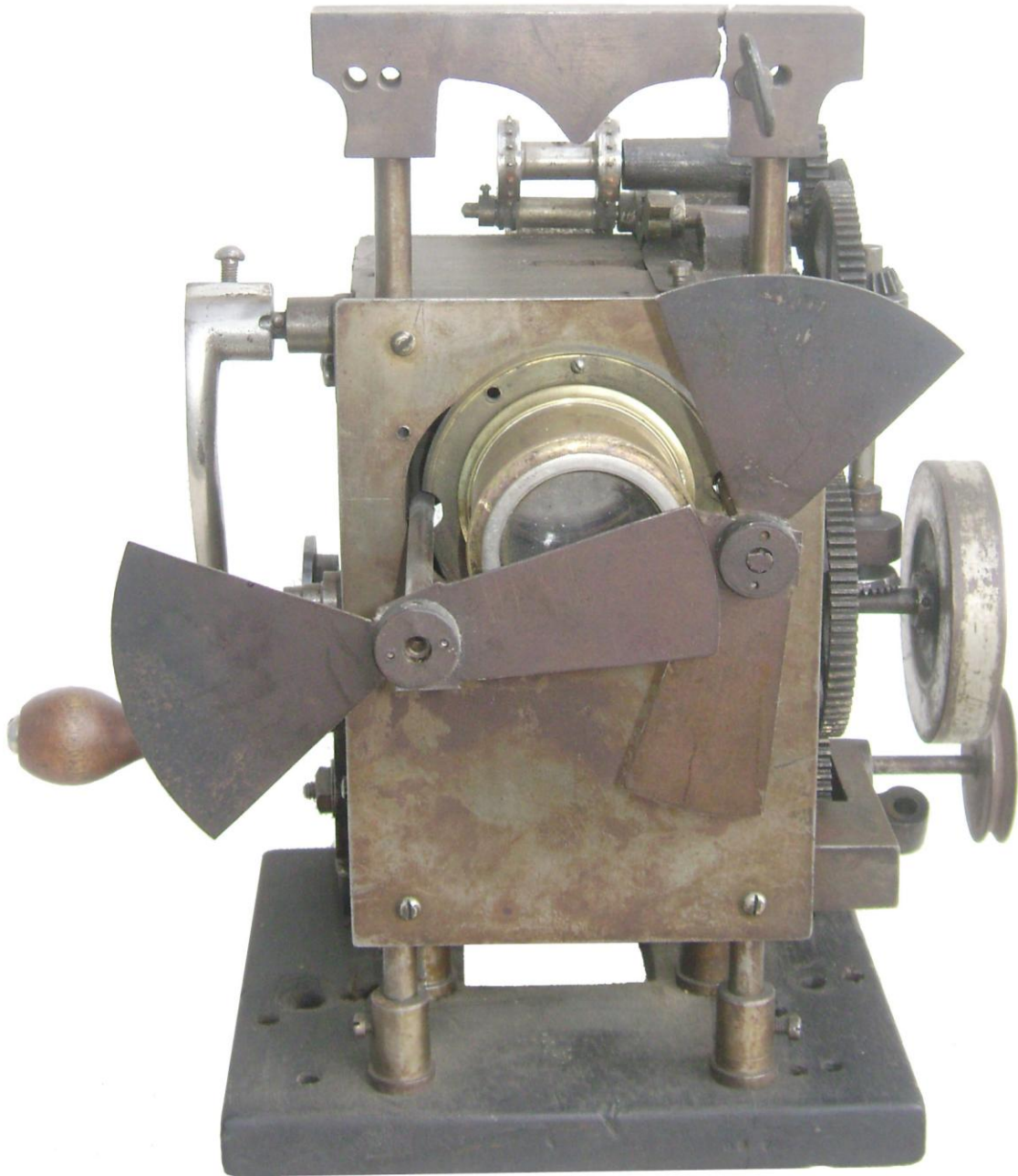
Lang prototype 35 mm Movie Projector

THE PROJECTOR



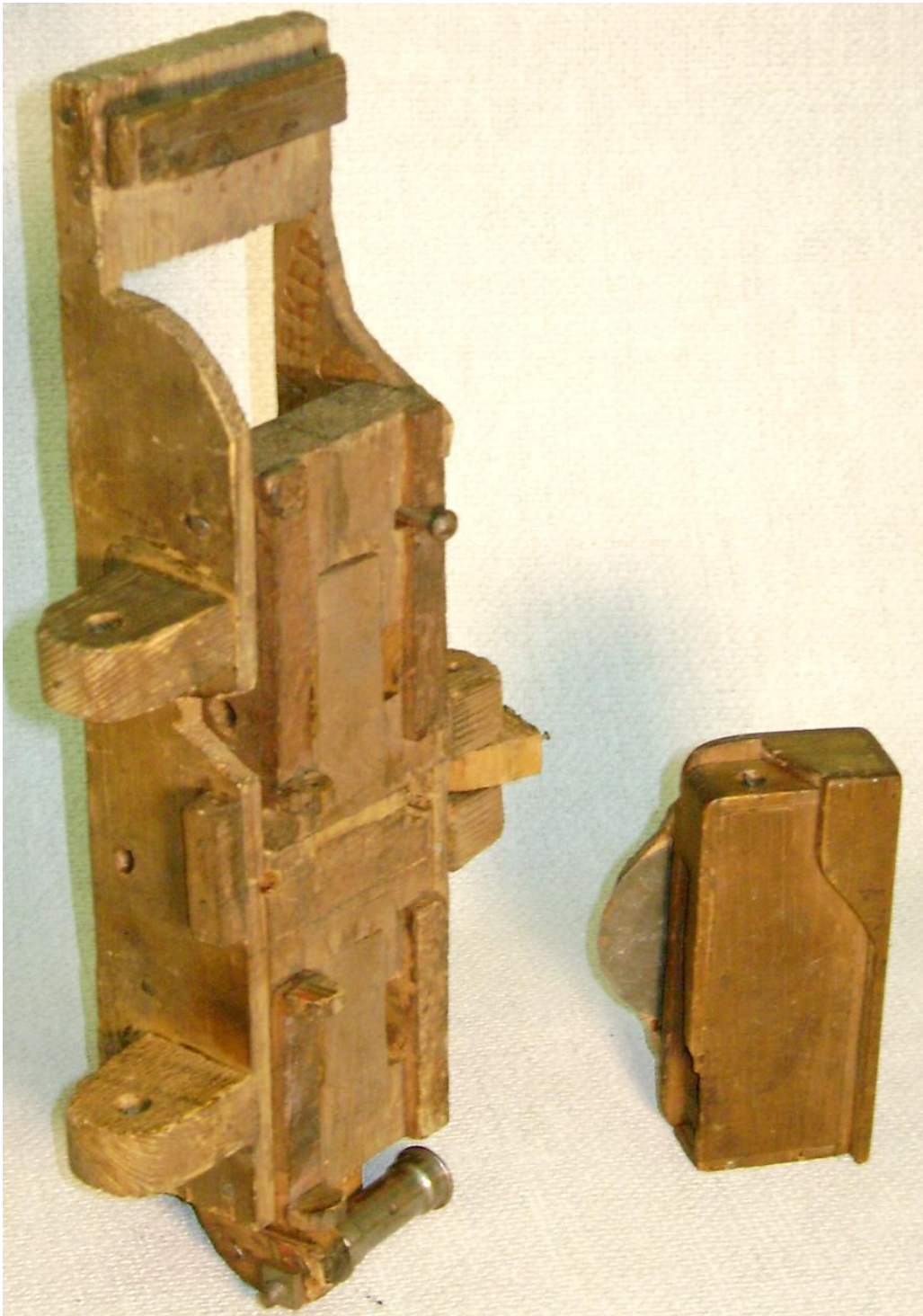
Lang prototype 35 mm Movie Projector

THE PROJECTOR



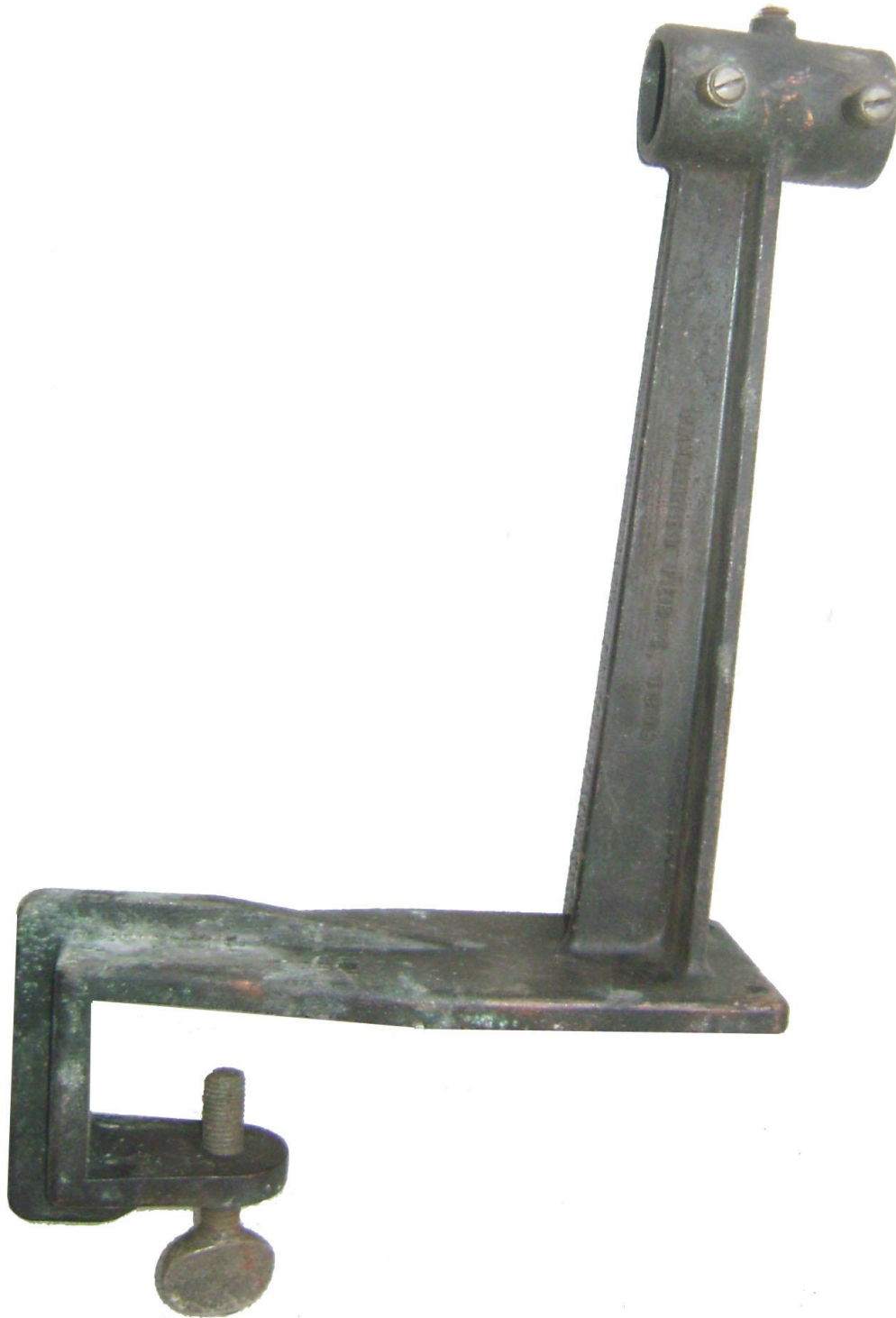
Lang prototype 35 mm Movie Projector

WOODEN PROJECTOR PATTERNS



Lang wooden Projector patterns

LANG REWINDER



Incomplete Lang reel rewriter

KINODROME

879,355.

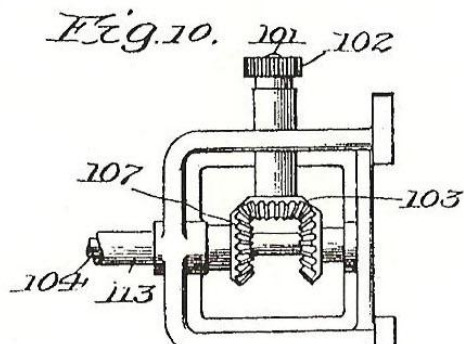
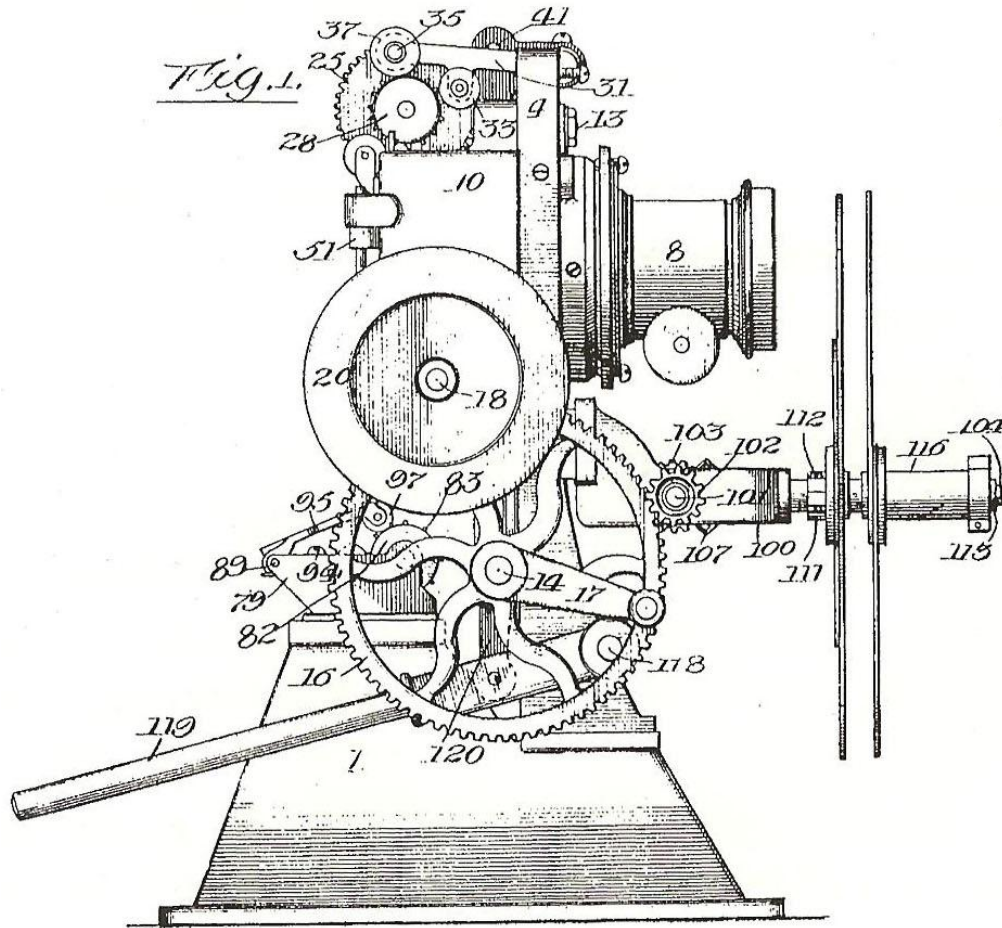
PATENTED FEB. 18, 1908.

D. J. BELL.

MOVING PICTURE MACHINE.

APPLICATION FILED APR. 23, 1906.

6 SHEETS—SHEET 1.



Kinodrome patent 879,365 for a projector with two counter rotating shutters

CAMERAGRAPH 5



Cameragraph Number 5, 35 mm projector
Supposedly the Lang projector was based on this projector
In the collection of Soterios Gardiakos

MONARCH

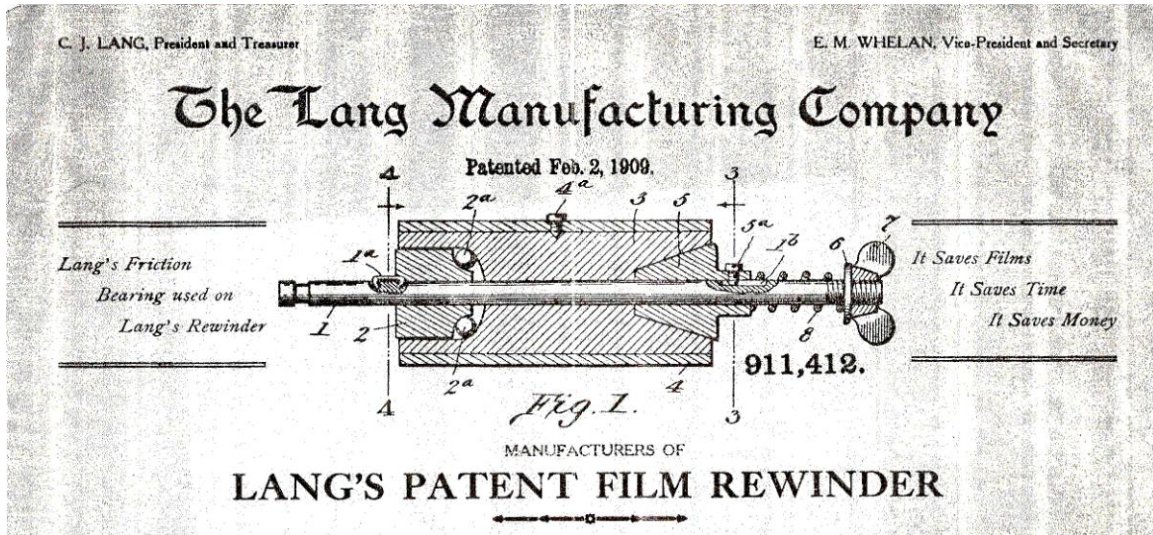


Monarch 35 mm projector with dual shutters
In the collection of Soterios Gardiakos

II

PATENTS

**LANG'S PATENT 911,412
FILM REWINDER**



LANG'S BUSINESS LETTERHEAD
LANG'S PATENT FILM REWINDER
Patent 911,412, February 2, 1909

Courtesy C. Kathy Stewart, Carl J. Lang's granddaughter

LANG'S PATENT 911,412

C. J. LANG.

FRICION BEARING.

APPLICATION FILED AUG. 6, 1908.

911,412.

Patented Feb. 2, 1909.

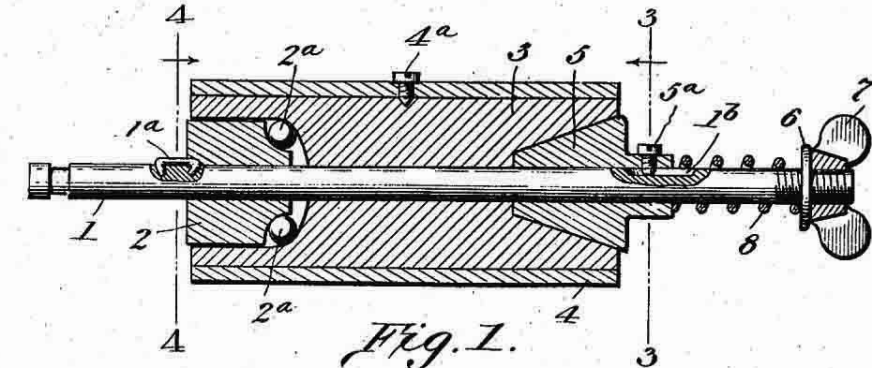


Fig. 1.

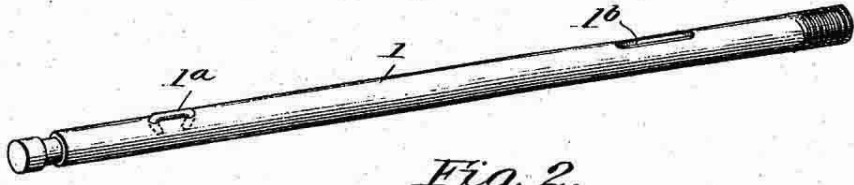


Fig. 2.

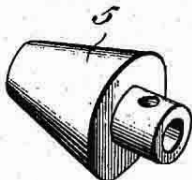


Fig. 5.

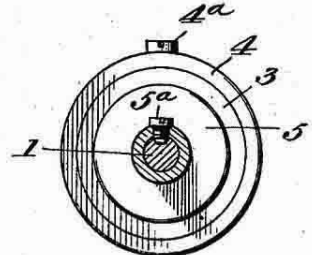


Fig. 3.

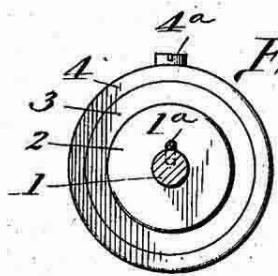


Fig. 4.

Witnesses:
J. M. Shea
Harry J. Blight

Inventor,
Carl James Lang
Walter M. Reynolds,
att'y.

Patented May 12, 1925.

1,537,315

UNITED STATES PATENT OFFICE.

CARL J. LANG, OF OLEAN, NEW YORK.

MOVING-PICTURE SHUTTER.

Application filed December 20, 1922. Serial No. 607,989.

To all whom it may concern:

Be it known that I, CARL J. LANG, a citizen of the United States, residing at Olean, in the county of Cattaraugus and State of New York, have invented certain new and useful Improvements in Moving-Picture Shutters, of which the following is a specification.

This invention relates to shutters for moving picture machines, and has for its object to provide an improved adjustable shutter having a new construction and advantages in operation as will be more fully set forth hereinafter.

It is old to make shutters having wings or blades of various widths in order to correspond to different projection distances. One theatre may project a picture at say 150 feet distance, using a long focus lens and another theatre may project a picture at say 100 feet distance using a shorter focus. In the former, the light beam at the shutter is narrower than the latter, which calls for shutters having blades of different widths, and it is the practice of manufacturers to furnish a shutter as nearly suitable as possible for the existing conditions of size of picture and distance from the machine, but these shutters very seldom have the correct width of wings. By means of the present shutter, the blades can be adjusted in width to suit the width of the light beam and other conditions. By means thereof the shutter can be adjusted to just cover the width of the light beam during the intermittent movement of the film.

It is also common to provide a shutter with one wide blade and with several other narrower blades, which latter serve to equalize the light and the dark periods as the shutter passes in front of the lens opening. If the additional wings are too narrow, the picture on the screen will be blurred, and if the shutter has wings wider than necessary, there is considerable loss of light. By means of the present invention, the width of the main and additional blades can be varied. This also permits the shutter to be adjusted for various kinds of machines. Thus some machines make what is known as a three to one movement, and others a five to one movement, for intermittently moving the film. In the former or slow movement, it is more practical and better (in the three-blade shutter) to have the two light openings next to the main or wide blade of a larger area than the light opening directly opposite

the main blade. In the five to one or fast movement, the three light openings should be all the same area. This result may be effected by the present invention.

I also place, on one of the shutter sections, a scale indicating adjustment for the focal length of various lenses, by means of which accurate adjustment can be made before the shutter is mounted in the machine.

One form of the invention is illustrated in the accompanying drawings in which Fig. 1 is a front plan view of the shutter with the blades in one position. Fig. 2 is a similar view with the blades in another position. Fig. 3 is a rear plan. Fig. 4 is a section on the line 4-4 of Fig. 1.

Referring now to the drawings, what I term the rear section of the shutter consists of a sheet metal disc having blades 6, 7, and 8, connected by rim 9, and these blades are so arranged as to define three openings. That between the blades 6 and 8 is larger than those between the blades 6 and 7 and 7 and 8, and the two latter are the same size. The blade 6 is somewhat wider than either of the blades 7 and 8, and the two latter are the same width. This is clearly shown in Fig. 3, in which the large opening is indicated at *a* and the small openings at *b* and *c*.

With this section is associated a front or shutter section, having three blades 9, 10 and 11, of which the two latter are the same width and the former, 9, is somewhat wider, the blade 9 being the same width as the blade 6, and the blades 10 and 11 being the same width as the blades 8 and 7 respectively. And the front section is so arranged, with respect to the rear section, that the blade 9 laps the blade 6, the blade 10 laps the blade 8, and the blade 11 laps the blade 7, the blade 9, however, being set on a radius relatively different from the blade 6, the distance between the blades 9 and 11 being greater than the distance between the blades 9 and 10 and 10 and 11, the latter being equal. The rim 9^a is curled over the ends of the blades 9, 10, and 11, forming a track for the latter.

These sections or discs are rotatably mounted on a hub 12 carried by a front plate 14, the central part of the disc being held between said front plate and a back plate 13, the plates being held together by screws 28. The front end of the hub is split to receive a collar 15 and screw 16* by

LANG PATENT 912,137

C. J. LANG.
KINETOSCOPE.

APPLICATION FILED NOV. 23, 1907.

Patented Feb. 9, 1909.

3 SHEETS-SHEET 1.

912,137.

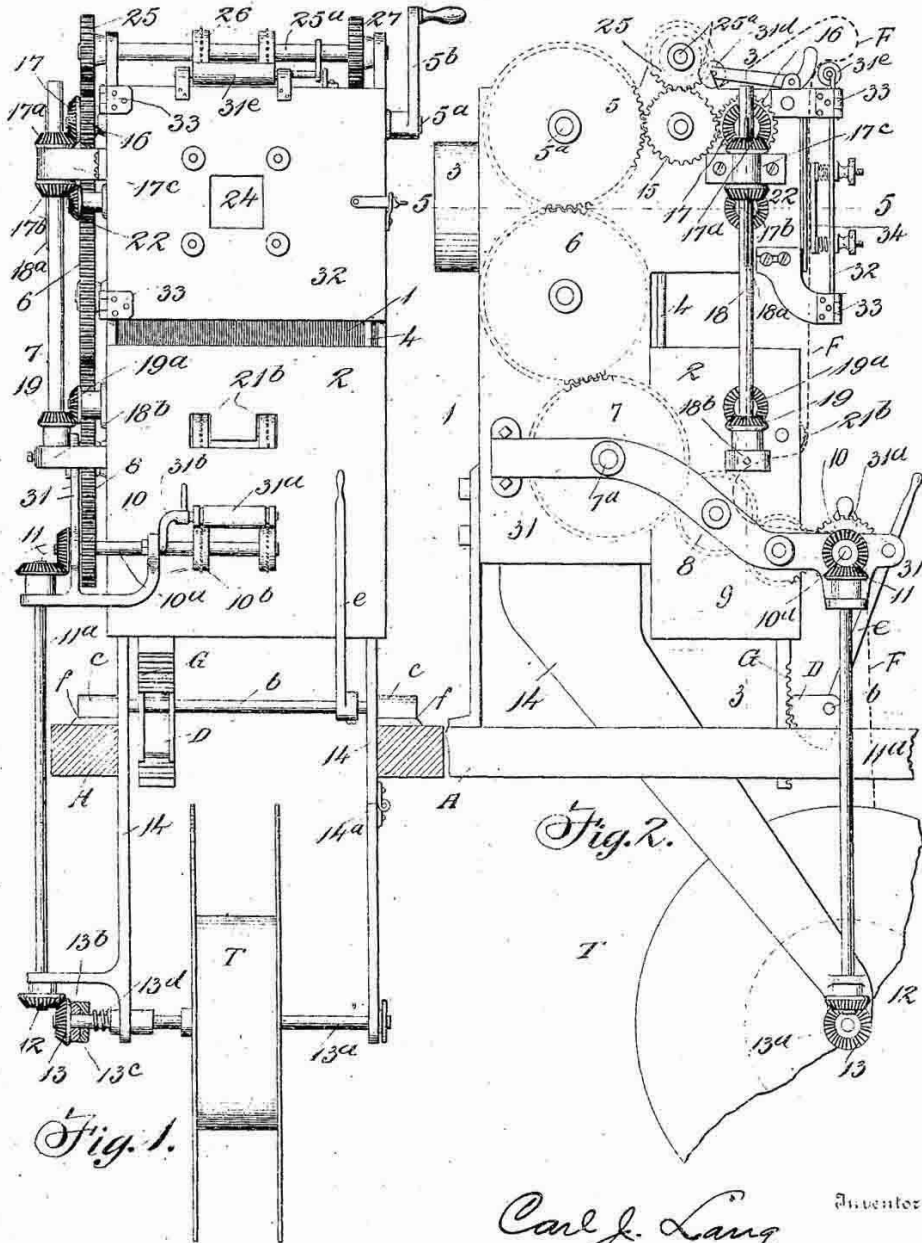


Fig. 1.

Fig. 2.

Witnesses
A. Stewart
Geo. E. Tew

Carl J. Lang Inventor
By *Mrs. B. Swensen* Attorney

LANG PATENT 912,137

C. J. LANG.
KINETOSCOPE.

APPLICATION FILED NOV. 23, 1907.

Patented Feb. 9, 1909.

3 SHEETS—SHEET 2.

912,137.

Fig. 3.

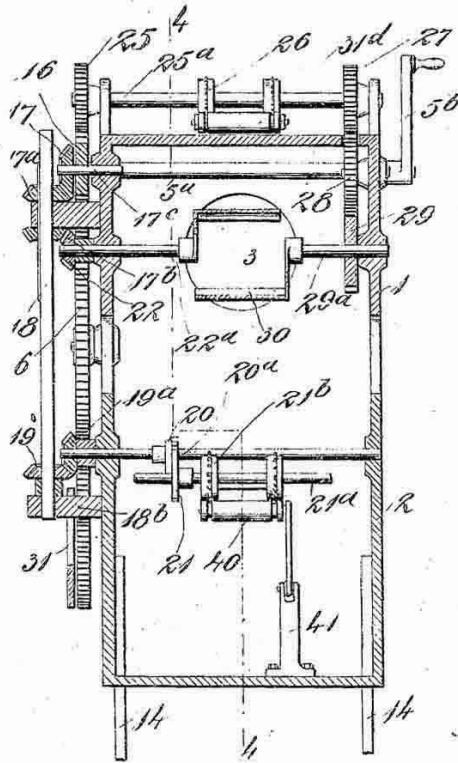
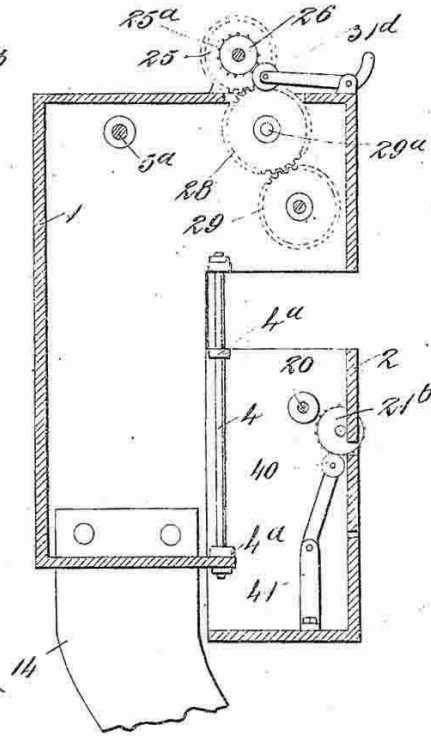


Fig. 4.



Carl J. Lang.
Inventor

Witnesses

A. H. Stewart.
Geo. E. Tew

Wm. B. Swensson.
Attorneys

LANG PATENT 912,137

C. J. LANG.
KINETOSCOPE.

APPLICATION FILED NOV. 23, 1907.

Patented Feb. 9, 1909.

912,137.

3 SHEETS—SHEET 3.

Fig. 5.

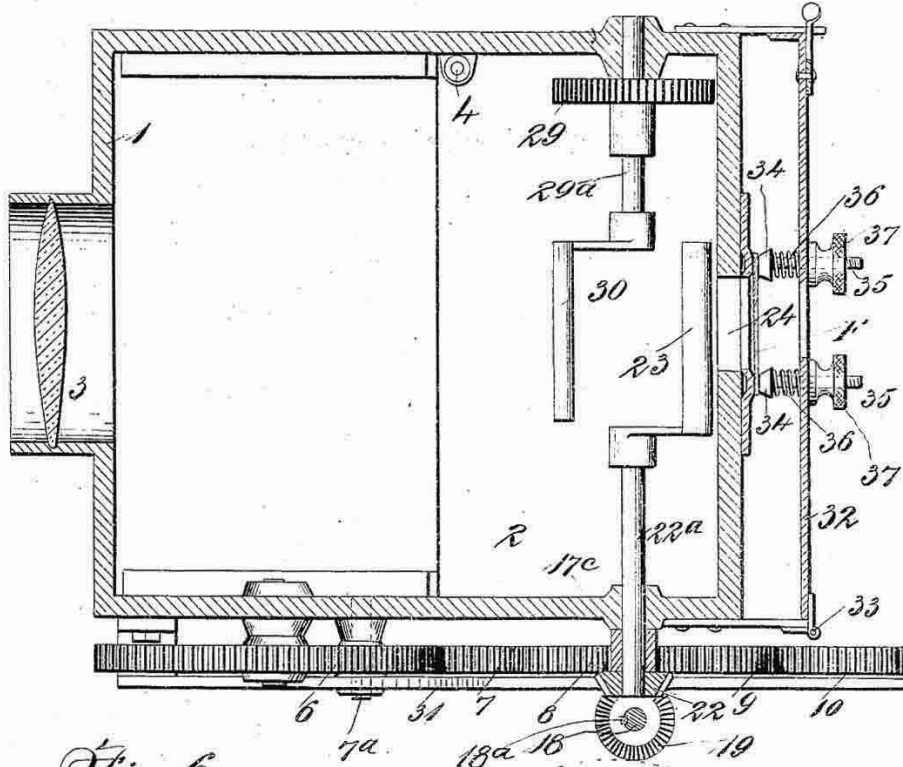


Fig. 6.

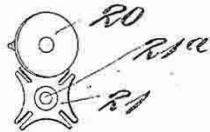
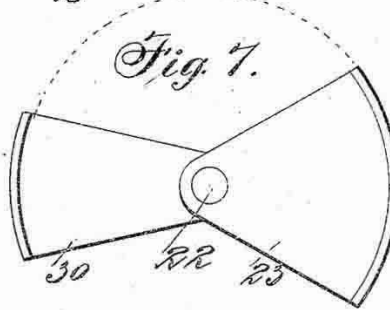


Fig. 7.



Inventor

Carl J. Lang.

Witnesses

A. H. ...
Geo. E. Jew

By

Mrs. ...
Attorneys

LANG PATENT 912,137

UNITED STATES PATENT OFFICE.

CARL J. LANG, OF OLEAN, NEW YORK.

KINETOSCOPE.

No. 912,137.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed November 23, 1907. Serial No. 403,522.

To all whom it may concern:

Be it known that I, CARL J. LANG, a citizen of the United States, residing at Olean, in the county of Cattaraugus and State of New York, have invented certain new and useful Improvements in Kinetoscopes, of which the following is a specification.

This invention relates to kinetoscopes of the intermittent-feed type.

An object of the invention is to provide an improved construction by means of which successive exposures are produced. These means include a revolving shutter and also a revolving cut out plate for preventing "flickers" by throwing shadows which prevent or avoid flickering of the picture on the screen.

A further object of the invention is to provide a vertically adjustable frame by means of which the film may be adjusted to proper position with respect to the aperture plate.

A further object of the invention is to provide improved means for holding the film against the aperture plate and for guiding the same in its movement across said plate.

Another object of the invention is to provide an improved construction for taking up the film on the take-up reel.

Other improvements in the details of the machine will be evident from the following description and the accompanying drawings.

In the drawings, Figure 1 is an elevation of the machine, from the rear. Fig. 2 is a side elevation. Fig. 3 is a vertical section on the line 3-3 of Fig. 2. Fig. 4 is a vertical section on the line 4-4 of Fig. 3. Fig. 5 is a horizontal section on the line 5-5 of Fig. 2. Fig. 6 is a detail of the stop motion. Fig. 7 is a detail of the shutter and flicker cut out.

Referring specifically to the drawings, 1 indicates a box frame which supports the operative parts and which is suitably mounted upon sills A at each side. The lower rear part of the sides of this frame is recessed to receive the adjustable sliding frame or box 2 which is held in position for vertical movement by lugs 4^a projecting from the side of the frame and slidable up and down on a bar 4 which is fastened to the side frame 1. The sliding frame is moved up and down by means of a lever e projecting from a cross shaft b which is mounted in bearings c upon lips f which rest upon the sills A. The shaft b carries a toothed quadrant D which engages a rack G which is fastened to and projects downwardly from the side of the frame

2. By manipulation of the lever the sliding frame is moved up and down, and may be locked in position by any suitable key or blade inserted between the gear teeth. Or the lever handle may be fastened in any suitable way.

The main shaft 5^a extends across the top of the main frame and may be rotated by a crank 5^b or any other means. At one end the shaft carries the main driving gear 5 which drives a train of gears 6, 7, 8 and 9, the last of which drives the lower sprocket gear 10 and it has a shaft 10^a which carries the lower sprockets 10^b. The gears 7, 8, 9 and 10 are supported by an arm 31 which is fastened to one side of the main frame 1 and extends rearwardly beside the same, with space enough to allow the gear wheels and hubs to clear the movable frame 2. The shaft 7^a of the wheel 7 extends through the arm and also through the adjacent side of the frame 1, to help support said arm. The shaft 10^a also carries one of a pair of beveled gears 11 the other of which is mounted upon the upper end of a vertical shaft 11^a which is mounted at the top in a bearing projecting from the arm 31 and at the bottom in a bearing projecting from one of a pair of arms 14. At the lower end the shaft 11^a has a beveled gear 12 meshing with a beveled gear 13 loose on the shaft 13^a which carries a take-up reel T. Said gear 13 carries one member 13^b of a friction clutch, the other member 13^c of which is pressed to contact by a spring 13^d coiled around the shaft. The friction clutch is provided to give the proper tension in winding up the film and to allow slip on occasion, to avoid breaking the film. The arms 14 are secured to and project downwardly from the side plates of the frame 1, and each arm has a lip f which rests on the sills A. The arm at the right is hinged as at 14^a, so that it can be opened to take out the take-up reel by sliding the same off the shaft. The first wheel 5 also meshes with a counter gear 15 which drives a spur gear 16 and a beveled gear 17 which latter meshes with a beveled gear 17^a on a vertical shaft 18. The gear 17^a is formed double with a beveled gear 17^b and said gears are held by bearing bracket 17^c. The shaft 18 has a long key 18^a which engages and drives the gears 17^a and 17^b and also allows said shaft 18 to be raised and lowered at will, in connection with the frame 2, the lower end

LANG PATENT 912,137

912,137

of said shaft being mounted in a bearing bracket 18^a projecting from the side of the frame 2. The shaft carries a beveled gear 19 which meshes with a beveled gear 19^a on a shaft 20^a which carries the member 20 of an ordinary stop motion the other member 21 of which is carried by a shaft 21^a which carries the intermittent sprockets 21^b whereby the intermittent feed of the film is produced. The film, which is indicated at F, is held in contact with the sprockets 21^b by means of grooved rollers 40 supported by an arm 41 projecting from the bottom of the frame 2, and said film is held in contact with the sprockets 10^b by means of a grooved roller 31^a supported by a bracket 31^b mounted on the arm 31. The upper or feed sprockets 26 are mounted on a shaft 25^a which has a gear 25 in mesh with the counter gear 15. The film is held to the sprockets by a grooved roller 31^d.

The beveled gear 17^b carried by the shaft 18 meshes with a beveled gear 22 on the outer end of a shaft 22^a which carries the segmental shutter plate 23, the axis of which is transverse to the frame, whereby said shutter plate revolves in front of the aperture 24 in the front plate of the frame, while the film is moved over said aperture. The shaft 25^a carries a spur gear 27 which meshes with a counter gear 28 which drives a gear 29 fast on a stub shaft 29^a which carries at its inner end the flicker cut out 30 which consists of a segmental plate and which is arranged to revolve around the shutter 23, the shafts 22^a and 29^a being concentric and located on opposite sides of the frame. The shutter plate 23 revolves in the opposite direction to the cut out, and at the same speed, the latter being one-half the width of the former and of less width than the aperture 24, and as the cut-out revolves in front of the aperture, only a portion of the aperture is covered, and shadows are thereby thrown which have the effect of preventing flicker in the picture on the screen.

At the back of the main frame, behind the aperture plate, is a gate 32 which swings on hinges 33 and which carries presser bars 34 which press upon the edges of the film as it slides over the plate. These presser bars are carried by upper and lower pins 35 having springs 36 which press said bars against the film, and the pins are threaded on the outer ends to receive the nuts 37 by means of which the tension and position of the presser bars can be regulated. The gate is provided at the top with a guide roller 31^e to guide the film to the aperture plate. At the front the frame 1 has the mount or case 3 for the lens.

The course of the film through the machine is as indicated on the drawing, feeding from the top sprocket across the aperture plate and then over the intermittent and

lower sprockets to the take-up reel. The sliding frame 2 may be adjusted up and down to register the film exactly with the aperture plate without varying the position or adjustment of the lower sprocket and its driving gears. The use of the vertically adjustable shaft 18 permits the movement of the frame 2, referred to, without interfering with the operation of the machine.

I claim:

1. In a kinetoscope, the combination of two concentric shafts on opposite sides of the projection aperture, a revolving shutter carried by one shaft, and a revolving cut out carried by the other, the shutter and cut out extending and being revoluble across said aperture.

2. In a kinetoscope, the combination of two shafts located end to end on opposite sides of the projection aperture, a segmental shutter extending from the end of one shaft, and a segmental cut-out extending from the end of the other shaft, the shutter and cut-out being revoluble in front of said aperture, the line of revolution of one being within that of the other.

3. In a kinetoscope, the combination of a fixed frame, an adjustable frame below the same, and having film feeding devices mounted thereon, an arm secured to the fixed frame and projecting rearwardly beside the adjustable frame, and take-up sprockets and driving devices therefor supported by the arm behind the adjustable frame.

4. In a kinetoscope, the combination of a frame having a rearwardly projecting arm and a downwardly projecting arm, take-up sprockets supported by the former arm, behind the frame, a take-up reel supported by the latter arm and gearing for simultaneously driving the sprockets and reel.

5. In a kinetoscope, the combination of a frame, having a rearwardly projecting arm and a downwardly projecting arm, shafts supported by said arms respectively and having take-up sprockets and a take-up reel thereon, respectively, and gearing between the shafts, including a friction clutch on the shaft of the take-up reel.

6. In a kinetoscopic apparatus having a light opening, means for giving an intermittent movement to a film across said opening and an objective lens, a shutter consisting of sections journaled on opposite sides of the lens and the light opening and movable past each other in opposite directions and means for operating said shutters, substantially as described.

7. In a kinetoscopic apparatus having a light opening, means for giving an intermittent movement to a film across said opening and an objective lens, a shutter consisting of sections rotatably journaled on opposite sides of the lens and the light opening and movable past each other in opposite direc-

LANG PATENT 912,137

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8

tions and means for operating said shutters, substantially as described.

8. In a kinetoscopic apparatus having a light opening, means for giving an intermittent movement to a film across said opening and an objective lens, a shutter consisting of sections mounted on opposite sides of the lens and the light opening and movable past each other in opposite directions and means

for operating said shutters, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses.

CARL J. LANG.

Witnesses:

F. L. STOWELL,
LEMUEL PATTERSON.

LANG PATENT 1,537,315



Courtesy C. Kathy Stewart

LANG PATENT 1,537,315

May 12, 1925.

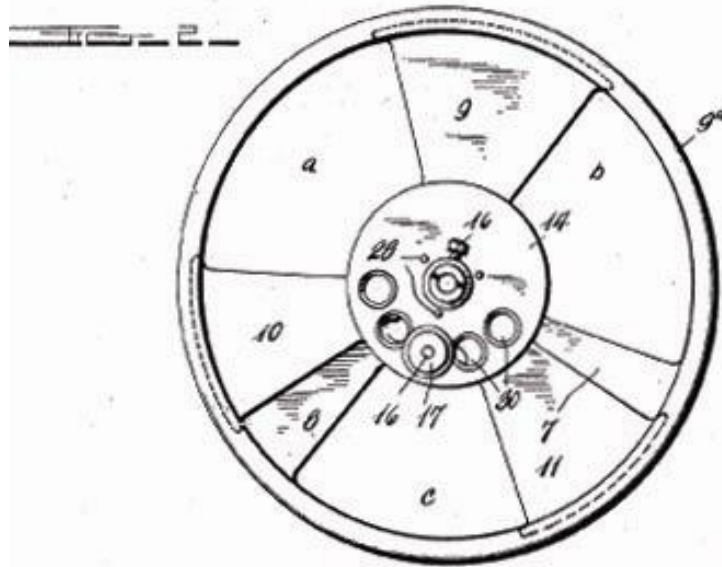
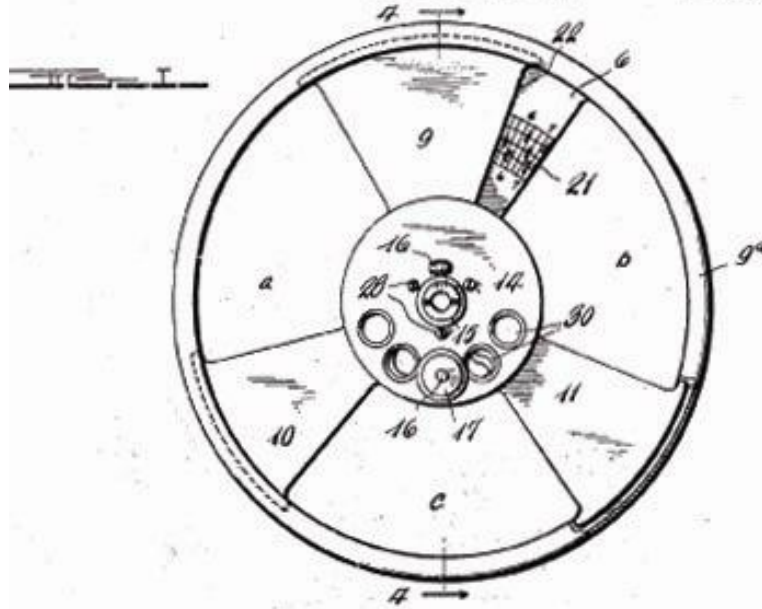
1,537,315

C. J. LANG

MOVING PICTURE SHUTTER

Filed Dec. 20, 1922

2 Sheets-Sheet 1



Inventor

Carl J. Lang

By Geo E. Law Attorney

C. J. Lang Motion Picture Shutter patent 1,537,315

Patented May 12, 1925.

1,537,315

UNITED STATES PATENT OFFICE.

CARL J. LANG, OF OLEAN, NEW YORK.

MOVING-PICTURE SHUTTER.

Application filed December 20, 1922. Serial No. 607,889.

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It is also common to provide a shutter with one wide blade and with several other narrower blades, which latter serve to equalize the light and the dark periods as the shutter passes in front of the lens opening. If the additional wings are too narrow, the picture on the screen will be blurred, and if the shutter has wings wider than necessary, there is considerable loss of light. By means of the present invention, the width of the main and additional blades can be varied. This also permits the shutter to be adjusted for various kinds of machines. Thus some machines make what is known as a three to one movement, and others a five to one movement, for intermittently moving the film. In the former or slow movement, it is more practical and better (in the three-blade shutter) to have the two light openings next to the main or wide blade of a larger area than the light opening directly opposite

the main blade. In the five to one or fast movement, the three light openings should be all the same area. This result may be effected by the present invention.

I also place, on one of the shutter sections, a scale indicating adjustment for the focal length of various lenses, by means of which accurate adjustment can be made before the shutter is mounted in the machine.

One form of the invention is illustrated in the accompanying drawings in which Fig. 1 is a front plan view of the shutter with the blades in one position. Fig. 2 is a similar view with the blades in another position. Fig. 3 is a rear plan. Fig. 4 is a section on the line 4-4 of Fig. 1.

Referring now to the drawings, what I term the rear section of the shutter consists of a sheet metal disc having blades 6, 7, and 8, connected by rim 9, and these blades are so arranged as to define three openings. That between the blades 6 and 8 is larger than those between the blades 6 and 7 and 7 and 8, and the two latter are the same size. The blade 6 is somewhat wider than either of the blades 7 and 8, and the two latter are the same width. This is clearly shown in Fig. 3, in which the large opening is indicated at *a* and the small openings at *b* and *c*.

With this section is associated a front or shutter section, having three blades 9, 10 and 11, of which the two latter are the same width and the former, 9, is somewhat wider; the blade 9 being the same width as the blade 6, and the blades 10 and 11 being the same width as the blades 8 and 7 respectively. And the front section is so arranged, with respect to the rear section, that the blade 9 laps the blade 6, the blade 10 laps the blade 8, and the blade 11 laps the blade 7, the blade 9, however, being set on a radius relatively different from the blade 6, the distance between the blades 9 and 11 being greater than the distance between the blades 9 and 10 and 10 and 11, the latter being equal. The rim 9 is curled over the ends of the blades 9, 10, and 11, forming a track for the latter.

These sections or discs are rotatably mounted on a hub 12 carried by a front plate 14, the central part of the disc being held between said front plate and a back plate 13, the plates being held together by screws 28. The front end of the hub is split to receive a collar 15 and screw 16* by

LANG PATENT 1,537,315

2

1,537,315

means of which the hub may be clamped on a spindle, the construction permitting angular adjustment of the sections to vary the effective width of the blades.

5 This adjustment is effected by means of a pin 16 provided with a knob 17 at its outer end and mounted in a bearing in the front plate 14 behind which the pin carries a pinion 18 which meshes at one side with a segmental rack 19 formed in or on the central part of the front section of the shutter, and on the other side with a segmental rack 29 on the rear section of the shutter, the back plate 13 being recessed to provide space for the pinion to turn. The pin 16 is threaded to receive a thumb nut 20 which may be screwed down against the front plate 14 to lock the sections at adjustment.

10 The front face of the blade 6 has a scale 21 which is graduated to indicate the focal length by relation to the edge 22 of the blade 9 of the adjustable section.

By turning the knob 17, the sections, by means of the rack and pinion connection, may be swung on the hub as a center to vary the effective width of the blades and accordingly the spaces between the blades. Thus for the fast operation, to produce three spaces of the same size the sections are turned until the blades 10 and 11 match with the blades 8 and 7 respectively in which position the blade 9 is out of line with the blade 6 to an extent sufficiently to partly cover the large opening *a* in the rear section, as shown in Fig. 1. For the opposite adjustment, the knob is turned in the other direction, and the blade 9 may be swung until it is in line with the blade 6, as shown in Fig. 2, or even beyond, and when this is done, the blades 10 and 11 will uncover the blades 8 and 7 accordingly, the effect of which will be to produce two relatively wide openings *a* and *b* of the same width and narrow the opening *c* to a lesser width.

Accordingly by the arrangement shown the width of each opening may be varied, producing in one position three openings of the same width and in another position two openings of the same width and one narrow opening, the openings in the latter instance being adjustable according to the angle of lens or other local conditions.

As will be understood, the shutter is attached to a spindle which is timed with the intermittent movement of the film, so that the shutter makes one complete revolution at each operation of the film. The wide

blade or blades cover the lens during the movement of the film, and the other blades pass the lens during the stationary period of the film. With a three-blade shutter, the two narrow blades pass the lens during said period. But the invention may be embodied in shutters having different numbers of blades. Thus it may be embodied in a two-blade shutter, each section of the shutter having two blades directly opposite each other and of about the same width. The two-blade shutter being usually used when the machine is operated by alternating current, and the three-blade shutter when direct current is used.

The front plate 14 may have some openings 30 cut therein, to correspond to the weight of the adjusting devices, so as to balance the shutter.

The invention is not limited to the particular form shown, but various modifications may be made within the scope of the following claims.

I claim:

1. A shutter comprising two sections fastened together to rotate in the same direction and each having a plurality of cooperating radial blades and intervening openings, said sections being adjustable angularly with respect to each other, to vary the effective size of said openings, both sections having cooperating wide and narrow blades in the respective sections, the wide blades of the respective sections being located at respectively different angles to the narrow blades thereof.

2. A shutter having a central hub structure and a plurality of blade sections thereon angularly adjustable with respect to each other and provided with segmental racks, and a manually rotatable pin mounted in a bearing in the hub structure and provided with a pinion engaging said racks to turn the sections.

3. A shutter having a central hub structure and a plurality of blade sections thereon one of which is angularly adjustable with respect to the other and is provided with a segmental rack, and a manually rotatable pin mounted in a bearing in the hub structure and provided with a pinion engaging said rack to turn the adjustable section.

In testimony whereof, I affix my signature in presence of two witnesses.

CARL J. LANG.

Witnesses:

JAMES M. CLEMENTS,
CARL W. BENSON.

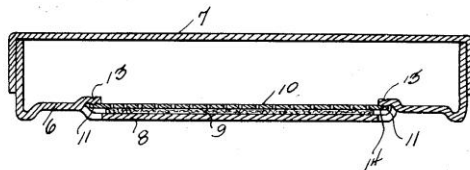
LANG PATENT 1,726,573

C. J. Lang Motion Picture Shutter patent 1,726,573, September 3, 1929

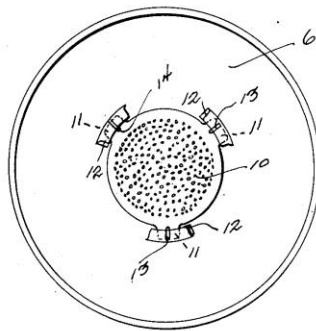
Sept. 3, 1929.

C. J. LANG
HUMIDOR FOR FILMS
Filed Dec. 12, 1927

1,726,573

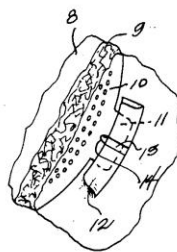
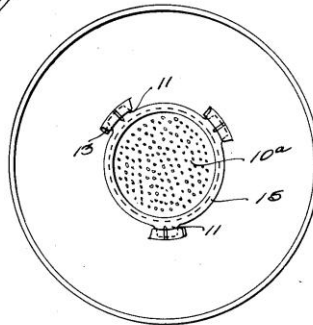


- FIG-1-



- FIG-2-

- FIG-3-



- FIG-4-

INVENTOR.

Carl J. Lang
BY
G. E. Dew
ATTORNEY.

Patented Sept. 3, 1929.

1,726,573

UNITED STATES PATENT OFFICE

CARL J. LANG, OF OLEAN, NEW YORK.

HUMIDOR FOR FILMS.

Application filed December 12, 1927. Serial No. 239,455.

It is known that motion picture films should be kept moist, and for this purpose the present invention provides a humidor consisting of a case with a pad or piece of absorbent material held therein, the object of the invention being to provide improved means for holding the pad in place, so that it can be readily renewed or removed when desired. Said means comprising a screen which in one form has tongues at the edge which by turning the screen will slide or snap under clips struck up from the metal of the case, at the edge of a depression at which the pad is received. In another form the screen is held in place by a ring which is fastened in much the same way.

The invention is illustrated in the accompanying drawings in which Fig. 1 is a cross section of the case or container. Fig. 2 is an inside plan view of the bottom part thereof. Fig. 3 is a similar view of a modification. Fig. 4 is an enlarged detail of the fastening device.

In the drawings 6 indicates the bottom part of an ordinary tin or sheet metal container such as is used for storing motion picture films. 7 is the removable top or cover part. The bottom part 6 has a central depression 8 formed or stamped therein to receive the pad 9 of absorbent material which will be saturated with water or other liquid used to keep the film moist. This pad is retained by a screen 10 which may be made of perforated metal, and the edge of this screen is provided with a plurality of tongues 11 projecting outwardly therefrom and adapted to engage under clips 12 formed by slotting and upsetting the bottom of the case at the edge of the depression 8. These clips or slots are open at one end and are so located as to match the tongues 11 in number and position. Preferably each clip has a rib 13 formed or bent therein to engage in a corresponding groove or channel 14 pressed in each tongue 11.

In the modified form shown in Fig. 3 the screen 10* is made circular, to fit the depression, and is held in place by a separate ring 15 which fits thereover and is provided with tongues 11 similar to the form above described and for the same purpose.

In assembling the parts shown in Figs. 1 and 2 the pad 9 is placed in the depression and the screen 10 is placed thereon, and then by turning the screen the tongues 11 slip through the slots until they engage under the clips 12, the ribs 13 snapping into the grooves 14 to hold the screen against accidental displacement. In the form shown in Fig. 3 the ring 15 is placed upon the screen and turned in the same manner to engage the tongues under the clips. Obviously the screen or ring, as the case may be, may be turned back by special pressure to disengage the tongues and permit removal of the pad for any purpose desired.

The parts can be cheaply stamped out of sheet metal, and quickly assembled for the purpose described. The moisture in the pad will keep the film moist when a reel thereof is placed in the container for packing or shipping.

I claim:

1. A container having a recess in one wall thereof and slots at the edge of said recess, a pad in the recess, and a screen upon the pad having tongues at its edge engageable in said slots by a turning movement of the screen.

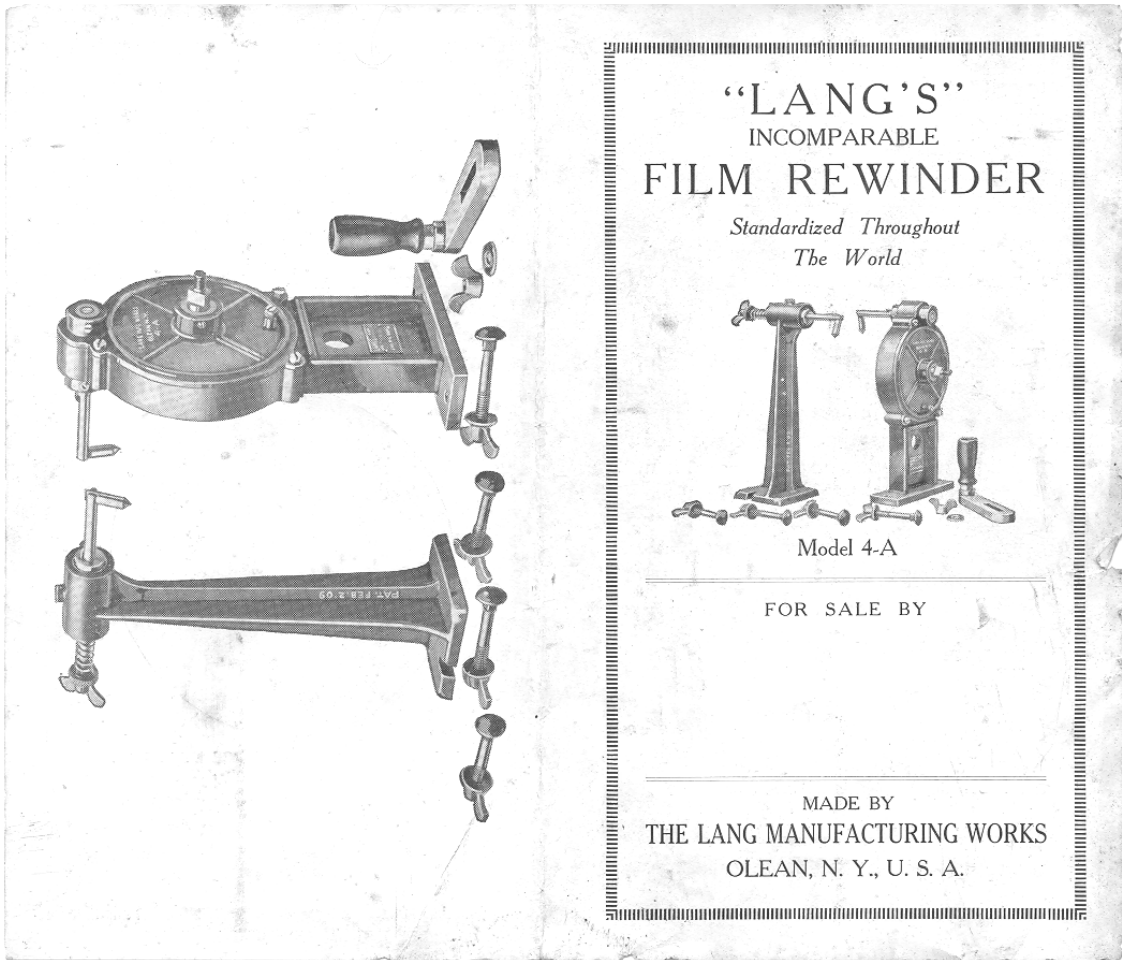
2. A container for reels or the like, made of sheet metal and provided with a recess in one wall thereof, said wall being slotted and struck up at the edge of said recess to form clips, a pad in the recess, and a screen upon the pad, having tongues projecting at its outer edge engageable under said clips by turning movement of the screen.

In testimony whereof, I affix my signature.

CARL J. LANG.

III BROCHURES

LANG FILM REWINDER BROCHURE



“LANG’S” INCOMPARABLE FILM REWINDER
Standardized Throughout The World
Collection Soterios Gardiakos

Undated brochure

LANG FILM REWINDER BROCHURE

THERE is not a film winding device on the market at the present time that you could compare with Lang's No. 4-A film rewinder in design, quality, workmanship or price.

For twenty years we have manufactured film rewinders and know what we are talking about.

Take for example the back frame. We were the first in the field to incorporate a tension bearing in the back frame. This bearing, when properly adjusted, will wind film tight and evenly on the reel of main frame (geared end) without the usual (pulling down) process, which latter causes 99% of all longitudinal scratches on the surface of the film commonly known as rainstorm.

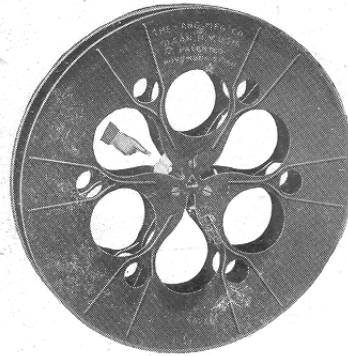
The main frame is fitted with jointed spindle, one-piece adjustable crank and genuine interchangeable Phosphor Bronze bushings. The main frame is geared $4\frac{1}{2}$ -1 gears running in oil and bearings are lubricated by splash feed.

The whole machine is made of first quality of materials and the best of workmanship.

ALL parts are guaranteed interchangeable and will fit perfectly.

The Lang No. 4-A Rewinder is nicely finished in Copper-Oxidized Electro Plate. This rewinder will hold reels up to and including 18" reels.

Price complete with bolts and wing nuts for fastening to rewinding table, \$15.00 net. One 14" Lang Reel is included with every No. 4-A Lang film rewinder.



LANG'S 14" FILM REEL. PRICE \$2.25 EACH.

The above machine and reel were designed and patented by Mr. Carl J. Lang, motion picture engineer.

An authority on film rewinders and reels.

If you want the best order Lang-Made products they can't be beat.

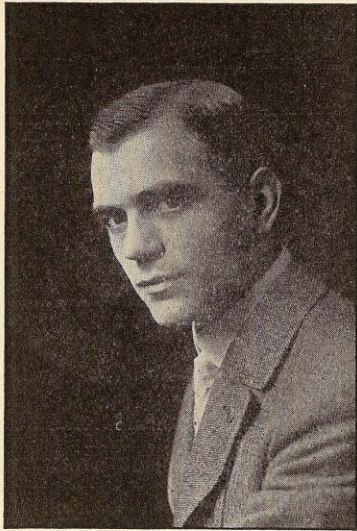
OLEAN PRINTING CO., OLEAN, N. Y., U. S. A.

“LANG’S” INCOMPARABLE FILM REWINDER
Standardized Throughout The World
Collection Soterios Gardiakos

Undated brochure

LANG FILM REEL DELUXE

The picture below shows a good likeness
of the man who solved the
film reel question

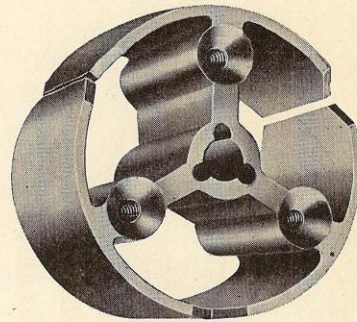


CARL JAMES LANG

Mr. Lang is the inventor of the many
improvements in Film Rewinders and
Reels which are standard throughout
the world. The U. S. Government has
adopted the Lang Film Reels.

“LANG’S” THE FILM REEL DELUXE

Standard Throughout
the World



Made in
Three Standard Sizes
10 inch, 12 inch and 14 inch

For Sale by

“LANG’S” THE FILM REEL DELUXE
Standard throughout the World
Collection Soterios Gardiakos
Courtesy Kathy Stewart, Carl J. Lang’s daughter

Undated catalog

LANG FILM REEL DELUXE

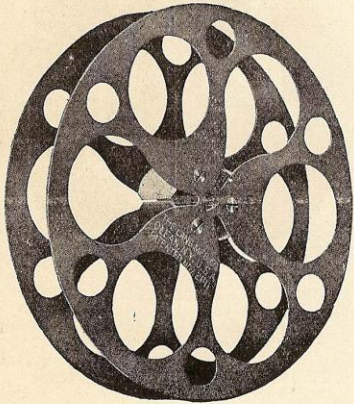
“LANG’S”

- THE -

FILM REEL THAT IS DIFFERENT

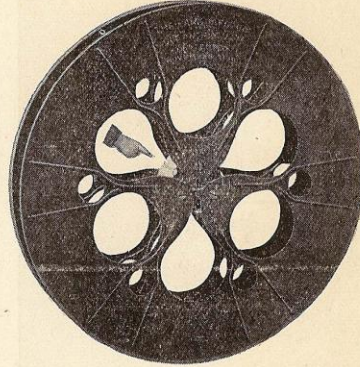
It Stands Supreme

The Only Machine Screw Assembled
Reel Made



This view shows the 10 and 12 inch Models. The sides are made plain. Note how easy it is to thread our reel. It has three distinctive places to insert the end of film from the outside. The

Hub has three Keyways, either one of which will readily slip on the key of any spindle made. It will fit all standard Motion Picture Machines and Film Rewinders, made here and abroad. It is the reel of the future.



The above view shows our 14 inch reel. The outer edge is beveled and the sides are reinforced.

- Prices -

10 in., \$1.00; 12 in., \$1.25; 14 in., \$1.50

Made by

THE LANG MFG. WORKS

The Rewinder People

Olean, N. Y.

U. S. A.

“LANG’S” THE FILM REEL DELUXE

Standard throughout the World

Collection Soterios Gardiakos

Courtesy Kathy Stewart, Carl J. Lang's daughter

Undated catalog

MEDAL ISSUED BY THE LANG MANUFACTURING CO.

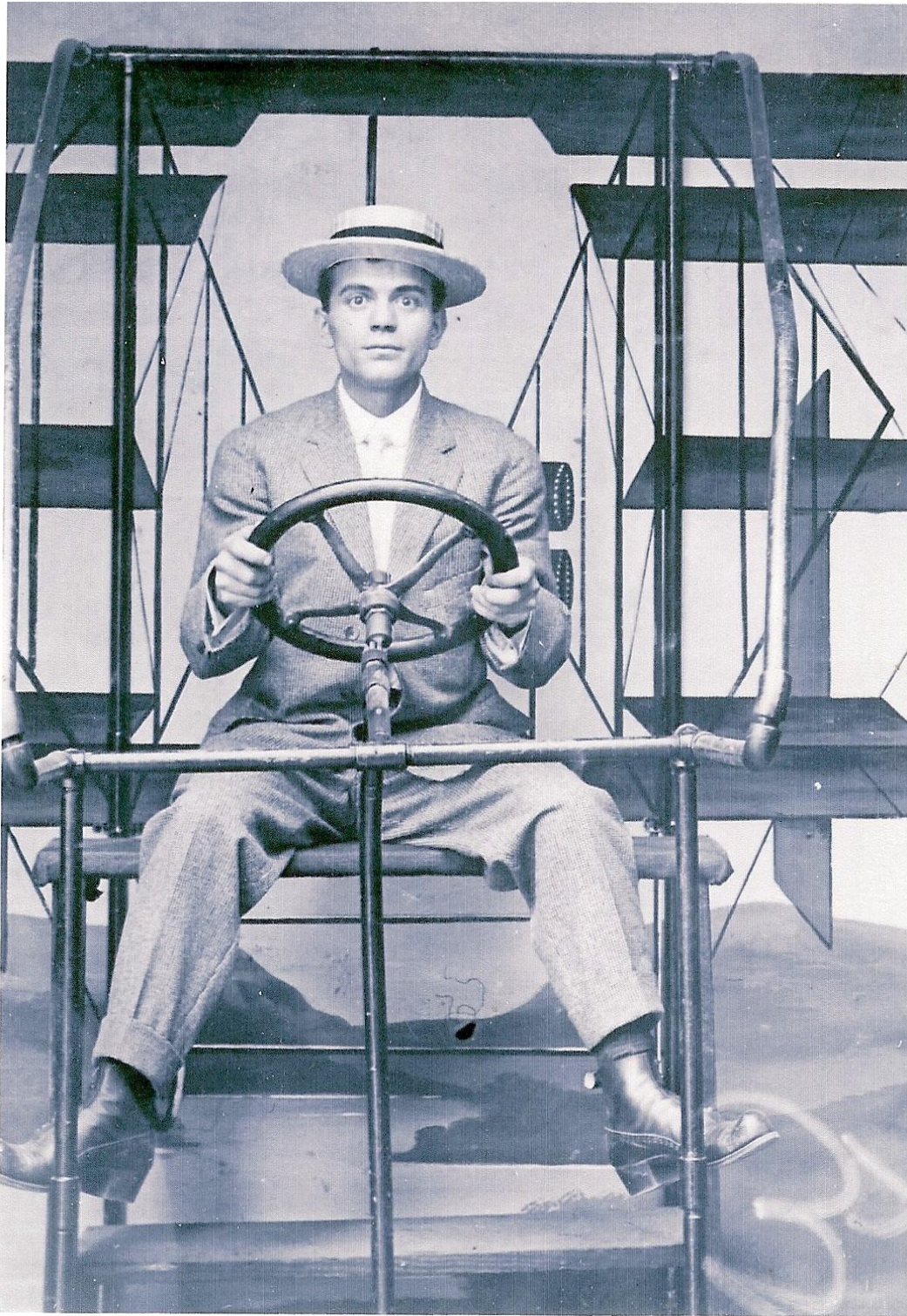


Dated July 13, 1913, it is 32mm in diameter. The metal is brass that appears to have been gilded originally; there is still some gild in the lettering.

In the collection of David Schenkman, Turtle Hill Banjo Co., Bryantown, MD

IV
LANG FAMILY PHOTO ALBUM

LANG FAMILY PHOTO ALBUM



Carl J. Lang in Bradford Pennsylvania in the 1920's

LANG FAMILY PHOTO ALBUM



Carl J. Lang circa 1920 with his daughter Laura on the left and a friend on the right
Courtesy C. Kathy Stewart

LANG FAMILY PHOTO ALBUM



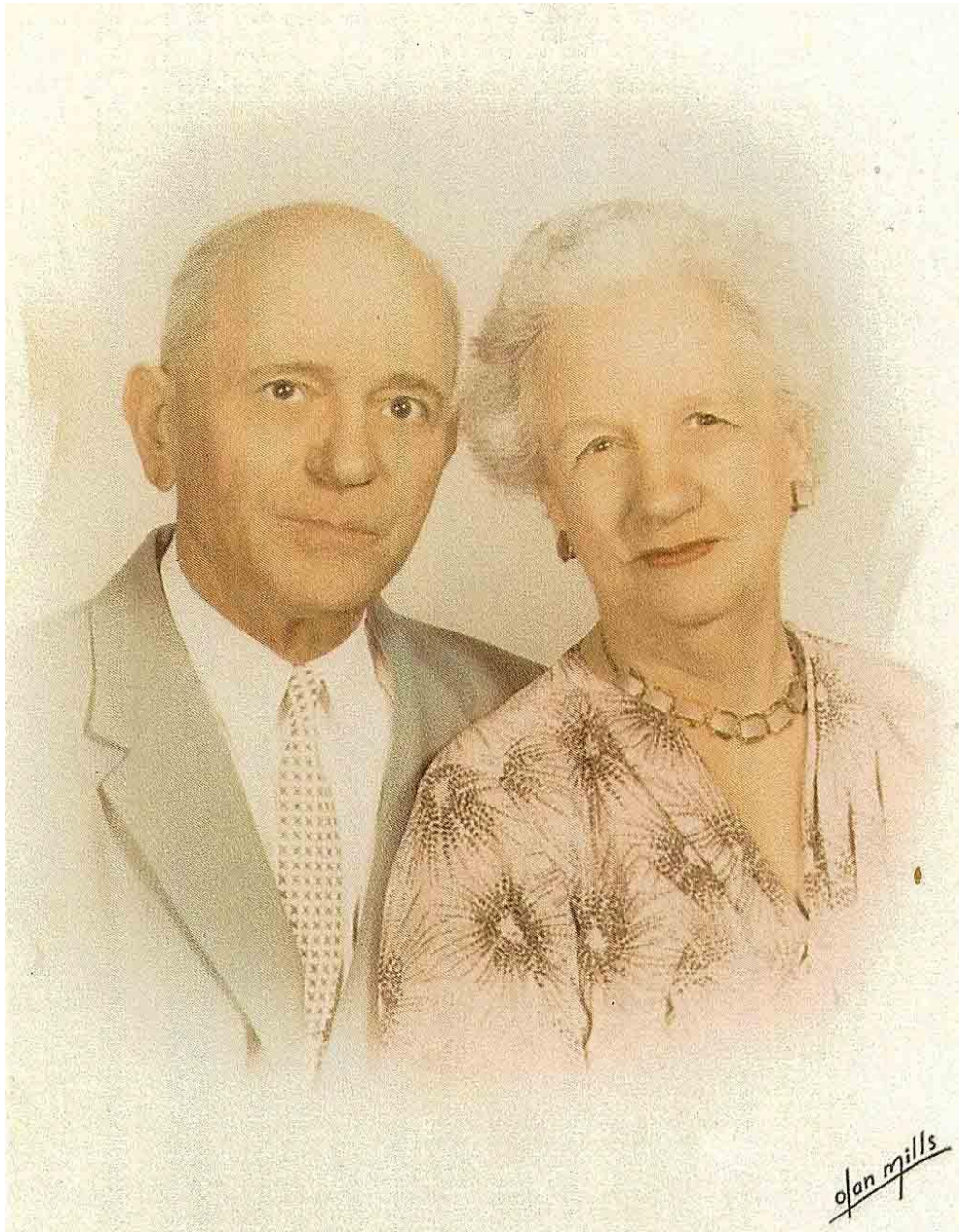
Left Ruth and Laura on the right
Courtesy Kathy Stewart
Courtesy C. Kathy Stewart

LANG FAMILY PHOTO ALBUM



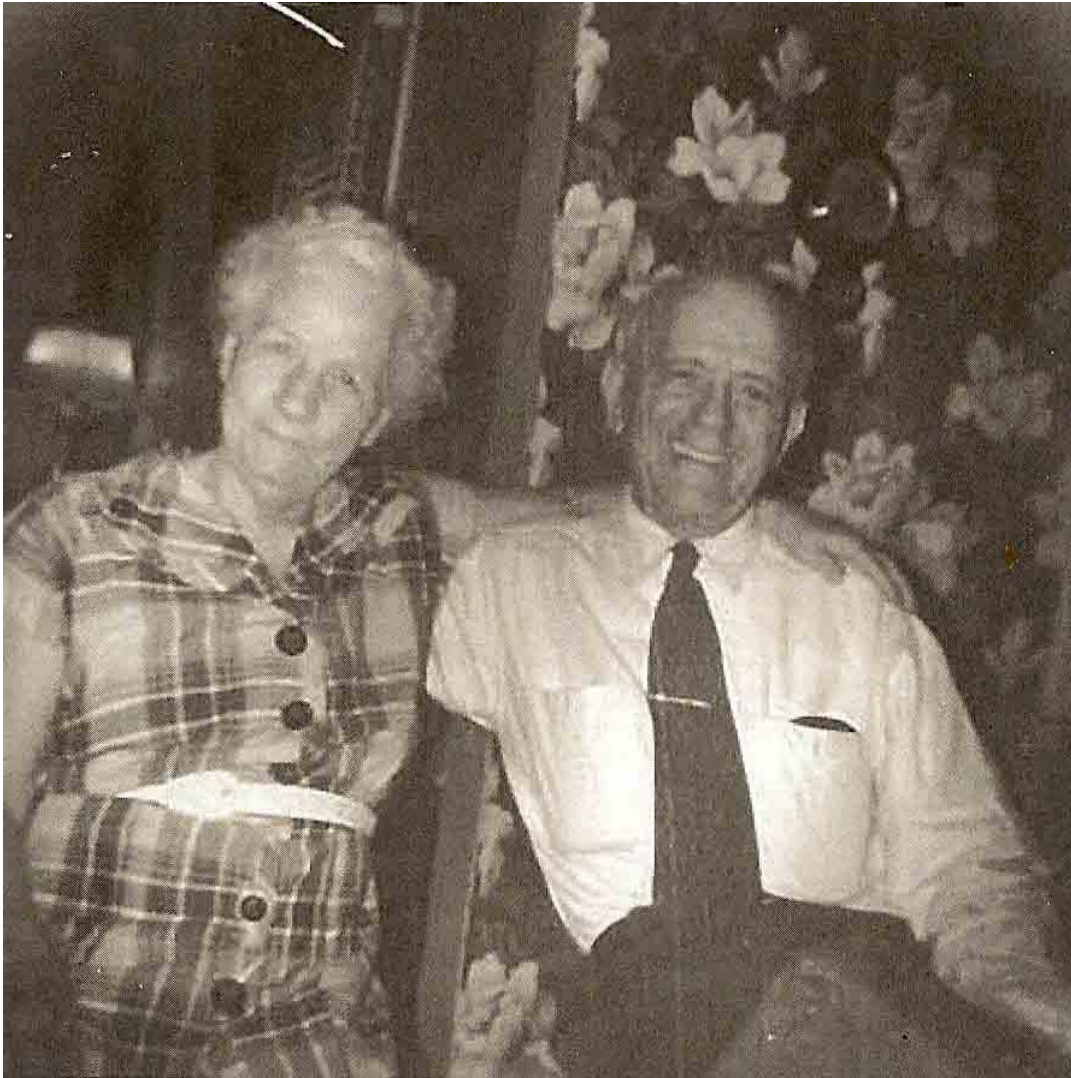
Carl J. Lang
Courtesy Ruth L. Rich, youngest daughter of Carl J. Lang

LANG FAMILY PHOTO ALBUM



Carl and Ethel Lang, date unknown
Courtesy C. Kathy Stewart

LANG FAMILY PHOTO ALBUM



Ethel & Carl J. Lang circa 1958
Courtesy Kathy Stewart
Courtesy C. Kathy Stewart

V
BIOGRAPHICAL INFORMATION

BIOGRAPHICAL INFORMATION

Olean Man, Inventor in Film Field, Dies

Carl J. Lang, 84, of 415 N. 19th St., Olean, died Tuesday (March 17, 1970) in the Hillside Nursing Home, Otto, after a long illness. He had been a resident of the Nursing home since Oct. 13, 1969.

Born in Germany, March 21, 1885, he was a son of Theodore and Anna Stahlman Lang. In his youth he came to this country and lived in New York City and Cleveland, Ohio, before moving to Olean 65 years ago. He was married to the former Ethel Whelan, who died in December 1966 (not 1967).

In Cleveland he operated its first motion picture theater and as a result of his movie theater experience invented the Lang Film Reel, the Lang Film Rewinder, a special camera shutter, all of which were manufactured by his firm, Lang Manufacturing Works, in Olean. At the end of his business career several years ago he sold his patents to the Eastman Kodak Co,

During World War I he had engaged in precision machine work for the buffalo Arms Co., later being employed by the Thomas A. Edison Co. of Menlo Park, N.J., and in Olean by the Pennsylvania Railroad, Dresser Clark, Hi-Q Division of Aerovox and Ka-Bar.

Mr. Lang was a member of St. Mary of the Angels Church in Olean; and the Society of Motion Picture Engineers.

Survivors include two daughters, Mrs. Edward (Ruth) Rich of Houston, Tex., and Mrs. Carl (Laura) Stady of Allegany; nine grandchildren and 13 great grand children; two brothers, Henry Lang of St. Petersburg, Fla., and Jacob Lang of Germany; two sisters, Mrs. Josephine Seyller of Plattsburg and Mrs. Elizabeth Reitz of Germany; and several nieces and nephews.

Friends are being received at the Halwig Funeral Home Inc., today and Thursday from 2 to 4 and 7 to 9 p.m. preceding a solemn Requiem Mass at 11 a.m. in St. Mary's Church. Burial will be in Mount View Cemetery at Olean.

The Rosary will be recited in the funeral home Thursday at 8:30 p.m.

Olean Times Herald, Wednesday March 18, 1970, page 12

Courtesy C. Kathy Stewart

BIOGRAPHICAL INFORMATION

RECALLS NICKEL MOVIES IN CITY

Carl J. Lang... (Unable to read the rest)

Do you remember when admission to the moving picture show was 5 cents, the only chairs provided were “undertaking” ones, and music was supplied by a phonograph?

Carl J. Lang, who says he started the first movie house in Cleveland, remembered these incidents yesterday when he returned from his home in Olean, N. Y. for a visit.

“Rube and Mandy at Coney Island” and “The Great Train Robbery” were the high drawing cards in those days when in partnership with the late Sam Bullock, I started the first Cleveland movie, the American theater,” said Lang “It was just East of the Hollenden.”

“We had to coax people to come the first two weeks. One of our phonograph hits was President McKinley’s speech at Buffalo.

“We paid \$325 a month rent. People thought we were crazy to think moving pictures would pay such a steep rental.”

Lang had previously traveled on the road showing his films. He owned a complete \$1,250 Edison moving picture equipment, he said, It was at the old stereopticon Exchange, located on what is now E. 14th street, that Lang met Bullock.

Lang now is a manufacturer of motion picture appliances.

Cleveland Plain Dealer – Sat. August 28, 1926

Courtesy C. Kathy Stewart

BIOGRAPHICAL INFORMATION

FILM REEL INVENTOR'S ANNIVERSARY

Carl J. Lang, 73 of 415 N. 10th St., engineer and inventor, is looking forward to Monday which will mark the 50th anniversary of his getting a patent on a Kinetoscope (motion picture projector).

Mr. Lang has been an inventor for many years, and a resident of Olean since 1907. He received the patent on the movie machine Feb. 9, 1909.

At one time, Mr. Lang operated the Lang mfg Works on Reed St., where six persons were employed. The company produced reel-winding machines for movie houses and other motion picture projection equipment. The "Lang Reel" is known in movie theatres throughout America.

Several thousands of the machines have also been used in Hollywood. Mr. Lang also holds numerous patents in the movie projection field, and for a short time, he worked at Thomas Edison's plant in Orange, N.J. and met the famed inventor.

After World War I, the U.S. government used thousands of Mr. Lang's motion picture reels to show war films. The Eastman Kodak Co. at Rochester has also used his inventions.

For the past few years, Mr. Lang has been employed at the Hi-Q Aerovox plant here.

Olean Times Herald, Saturday Feb. 7, 1959

Courtesy C. Kathy Stewart

BIOGRAPHICAL INFORMATION

MACHINE GUN PARTS ARE MADE IN CITY

Machine Gun parts are being manufactured in the city by Carl J. Lang, sole proprietor and operator of the Lang Manufacturing Works, at a small shop at 415 North Tenth Street.

Mr. Lang, who does precision work, is making thousands of one kind of vital part of machine guns for the Buffalo Arms Company.

He obtains long pieces of metal from the Buffalo concern, cuts it, shapes, mills, drills and polishes it until it is perfect finished part.

The parts are shipped in hundred and thousand lots to Buffalo where they are assembled in machine guns for National Defense.

Mr. Lang has spent all his life working with precision tools and is the inventor of a number of machines, including many moving picture appliances.

He operates a one-man shop and said today he will not employ any additional workers

Xeroxed news clipping, no source or date given.

Courtesy C. Kathy Stewart

BIOGRAPHICAL INFORMATION

Carl J. Lang, of Olean, N.Y. is one of the rising Generation of Inventors and mechanics who, since the first problems of the movie picture's mechanical side have been solved, has materially added to the original creation of the many gentlemen claiming the greater credit for the perfection of the mechanism of projection.

The Lang Film Winder and the Lang Reels are used in the leading studios, including the Edison and a large number are also used in the finishing department of the Eastman Kodak Company. In addition no less than 7,500 theatres large and small use both the winder and the reel, while over 2,000 have been sent abroad. It is claimed that the General Film Company and its competitor the Mutual Company, dispose of more Lang Winders and reels than all other makes combined.

Mr. Lang is an industrious worker, ingratiating in disposition, and his annual visit to the metropolis to attend expositions and conventions has helped greatly to increase his influence in the industry.

Robert Grau, *THEATRE OF SCIENCE: A VOLUME OF PROGRESS AND ACHIEVEMENT IN THE MOTION PICTURE INDUSTRY*. Broadway Publishing, New York/London/Paris, 1914, Page 331.

BIOGRAPHICAL INFORMATION

North Olean History – History of Olean Theatres

HISTORY OF OLEAN'S THEATRE ENTERTAINMENT

Eileen McCartan Smith

Mr. C. J. Lang, who came to Olean in 1907, had been in the manufacturing business for 20 years and was indirectly interested in the motion picture industry in Germany before in 1909. C. J. Lang built a moving picture factory on Whitney Ave. It was a brick two-story building, 60 by 25 feet. He manufactured moving pictures, the Lang flicker less attachments and all of Lang inventions with up to date equipment. Then in 1922, the state issued a charter to the Lang Manufacturing works to make motion picture machines. Mr. Lang had a number of patents on improvements to the motion picture machine and patents pending on others. His products were in use throughout the United States. During World War I, the U.S. government purchased thousand of his reels upon which the films were wound and were stored in the government vaults in Washington.

<http://www.northoleanhistory.com/historyofoleans.html>

BOOKS AND MONOGRAPHS WRITTEN BY SOTERIOS GARDIAKOS

October 1, 2011

Relating to Movie Machinery

Cinematic Machinery Collection of Soterios Gardiakos, 2002, ISBN 0-9777537-3-5, August 25, 2011, 227 pages

A Warwick (Baucus & Maguire Ltd.) spoolbank Projector ca 1897 In the Collection of Soterios Gardiakos, Photographs by Katerina Nike Gardiakos. 2001, ISBN 0-9777537-0-0, June 1, 2008 49 pages

Pre 1900 American Made Movie Projectors. 2002. ISBN 0-9777537-4-3, June 30, 2010, 143 pages

A Compilation of Greek made Movie Projectors and other Cinematic Equipment. From information provided to Soterios Gardiakos by Nikos Theodosiou. 2002. ISBN 0-9777537-2-7, June 20, 2009, 60 pages

Kinematic Peephole Machines Using a Continuous Strip of Film or Paper, 2002 ISBN 0-9777537-5-1, June 22, 2010, 73 pages

LeRoy Projectors, An enigmatic pioneer in the quest to project motion pictures on the big screen. ISBN 0-9777537-7-8, July 17, 2008, 48 pages

Optigraph 35 mm projectors, August 23, 2008 , 49 pages

The Peerless Kinetograph made by Geo. A. Knaak Co., of Oshkosh Wis. U.S.A. and the Veriscope Projector, *An Inquiry into an enigma*, September 30, 2011, 33 pages.

A Prototype 35 mm Movie Projector in the Collection of Soterios Gardiakos Made by Carl J. Lang (Lang Manufacturing works) of Olean, New York, March 15, 2010, 56 pages

Peep Show Phantoscope ca 1904-1905 made by C. Francis Jenkins in the Collection of Soterios Gardiakos, November 22, 2010, 73 pages

Spoolbank Projectors, 2001. ISBN 0-9777537-1-9, June 31, 2010, 82 pages

Selig Polyscope Movie Projectors made by William N. Selig – a compilation, September 25 2011, 62 pages.

Cineograph movie projectors and some cameras Made by Siegmund Lubin 1896-1916 *A checklist*, October 25, 2011 62 pages

From the JENKINS PHANTOSCOPE to the ARMAT VITASCOPE Chronologically arranged, June 25, 2011, 132 pages

Works in progress relating to movie machinery

A Possible Classification of Thomas Edison's Kinetoscopes, 2002, (Incomplete, work in progress)

35mm Movie Projectors, A work in progress with over 1,300 pages so far. (Dec. 2006)

Relating to Numismatics

The Coinage of Modern Greece, Crete, the Ionian Islands and Cyprus, Chicago, 1969, ISBN 0-916710-02-5, 96 pp, + 16 plates, hardbound

The Coins of Cyprus 1489-1571, Chicago, 1975, ISBN 0-916710-19-X, 32 pp, fully Illustrated, paper cover

A Catalogue of the Coins of Dalmatia et Albania 1410-1797. Chicago, 1970
ISBN 0-916710-67-x, 32 pp, illustrated, maps, tables, paper cover

The Coinages of Alexander the Great, S. Gardiakos Editor. ISBN 0-916710-82-3, 1,007 pp, +157 plates, hardbound in three volumes

Books on Soterios Gardiakos

The Sculptures of Soterios Gardiakos, (From the Bronze age to the Modern Age)
By Chryssafenika Gardiakos, Photographs by Brad Baskin and Katerina Nike Gardiakos.
September 1, 2011, ISBN 0-9777537-6-X. featuring 140 sculptures, 167 pages

Selections from the collection of Soterios and Irlanda Gardiakos, September 20, 2011, 218 pages

MY LIFE an illustrated photo album of me, my family and my friends, from the early twentieth century to the present. July 30, 2011, 389 pages

Site on Movie Machinery: <http://bioscope.biz/>

Site on Sculpture: <http://gardiakos.com/>

Email: [sgardiakos \(omit\) @aol.com](mailto:sgardiakos@aim.com)

**UNIGRAPHICS INC.
64 South Water Street
Aurora, Illinois 60505**

