The

PEERLESS KINETOGRAPH

Made by

THE GEO. A. KNAAK CO.

OSHKOSH, WIS.

U.S.A.

And the

VERISCOPE PROJECTOR

AN INQUIRY INTO AN ENIGMA

by

Soterios Gardiakos

October 26, 2009, May 26, 2010, May 29, 2010, September 30, 2011

UNIGRAPHICS INC

2009

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http://www.bioscope.biz/

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UNIGRAPHICS INC

Aurora, Illinois. U.S.A.

Kalamata, Messinias, Greece

AN INQUIRY INTO AN ENIGMA

Recently I was very fortunate in acquiring an almost complete Peerless Kinetograph made by George A. Knaak of Oshkosh Wisconsin. I already owned a Peerless Kinetograph head, but now I had an almost complete machine. I eagerly went on the internet typed in "peerless Kinetograph" nothing, I then typed George A. Knaak again and only two links appeared one to my website and the other to a patent. Here was a very well made machine and almost nothing on the internet. It became apparent that all research on this would have to be a slow and arduous process.

My first thought was that Mr. Carey Williams, the Dean of projector collectors, will surely have something on Knaak and his Peerless Kinetograph. I received the following reply:

Hell Soterios
Thank you for the ad from the Peerless I have yet to find any thing about the Peerless in my files attached photos are of the Veriscope which came after the Peerless basically a front shutter version of it. Mine is missing the part of the gate there is one in the Smithsonian ex Dunston collection.
Cheers Carey (October 26, 2009)

Some years back Carey had been kind enough to give me two photos of the Veriscope projector formerly in the collection of C. W. Dunston, now in the Smithsonian, but I apparently did not notice that it was in fact the same machine other than the fact that an outside shutter had been added to the Veriscope.

This than is an inquiry to the enigma of how and when did the Peerless Kinetograph become the Veriscope, In the following pages I will share with you the little information I have been able to gather on this and hope one of my readers or perhaps one of George A, Knaak's or one of the Wilboken;s descendents will provide me with additional information to be added to this little booklet.

Soterios Gardiakos
October 26, 2009

GEORGE A KNAAK

GEORGE A. KNAAK

I am very fortunate that Carey Williams took the time to photocopy the Ray Bryan files and was kind enough to make a duplicate set for me. It is here that my research begins. Ray Bryan dates the Peerless Kinetograph between 1908 and 1910, and had a copy of page one of patent number 899,543 filed on December 13, 1907 and granted on September 29, 1908. I obtained all six pages of this patent from the patent office and I am including them in this monogram. I than researched what other patents George A. Knaak had and came up with the following results:

	PAT. NO.	Title
1	1,926,726	**222/3** 137/224 152/415 222/174 48/191 **(Sep. 12, 1933)**
2	1,918,341	**73/199** 137/505.47 141/83 73/270
3	1,918,340	**73/199** 137/224.5 137/505.46 141/83 73/270
4	1,801,560	**92/101** 200/81R
5	1,788,678	**338/29** 236/1R 338/109
6	1,731,580	**335/170** 335/171
7	1,708,309	**236/9R** 236/68R 236/74R
8	1,618,963	**74/97.1**
9	1,459,218	**92/48** 185/40B 200/81.5 200/83D 237/67 92/132 92/76 92/91 92/94
10	1,416,092	**417/28 (May 16, 1922)**

I was surprised that patent number 899,543 was not on the list and what other Knaak patents were missing from this list. None of the above patents have anything to do with the cinema. Patent number 899,543 was given to George A. Knaak of Oshkosh, Wisconsin. The ten patents listed above are given to George A. Knaak of Milwaukee, Wisconsin. I am making a big leap of faith that it is one and the same person and that by than Knaak had moved to Milwaukee where he was involved in other business ventures.

My big leap was right, I found another patent, 44,479 (D44,479) filed May 6, 1913 and granted August 12,1913 for a beer pump casing assigned to the Wilboken manufacturing company. In this patent Knaak is now a resident of Milwaukee and Wilboken in their ads state that the Veriscope is “Made and Guaranteed by the Wilboken manufacturing Co.

I do not have any photo copies of the Veriscope files of Ray Bryan.

G. W. Dunston of Norfolk Virginia (d. October 18, 1956 at age 48) was a collector of early movie projectors and had a projector museum in Norfolk, Virginia and did much to research and document his collection as well as on projectors not in his collection, He corresponded with many of the early pioneers in the movie industry. Again thanks to Carey Williams I have photocopies of some of C. W. Dunston correspondence relating to movie projectors.

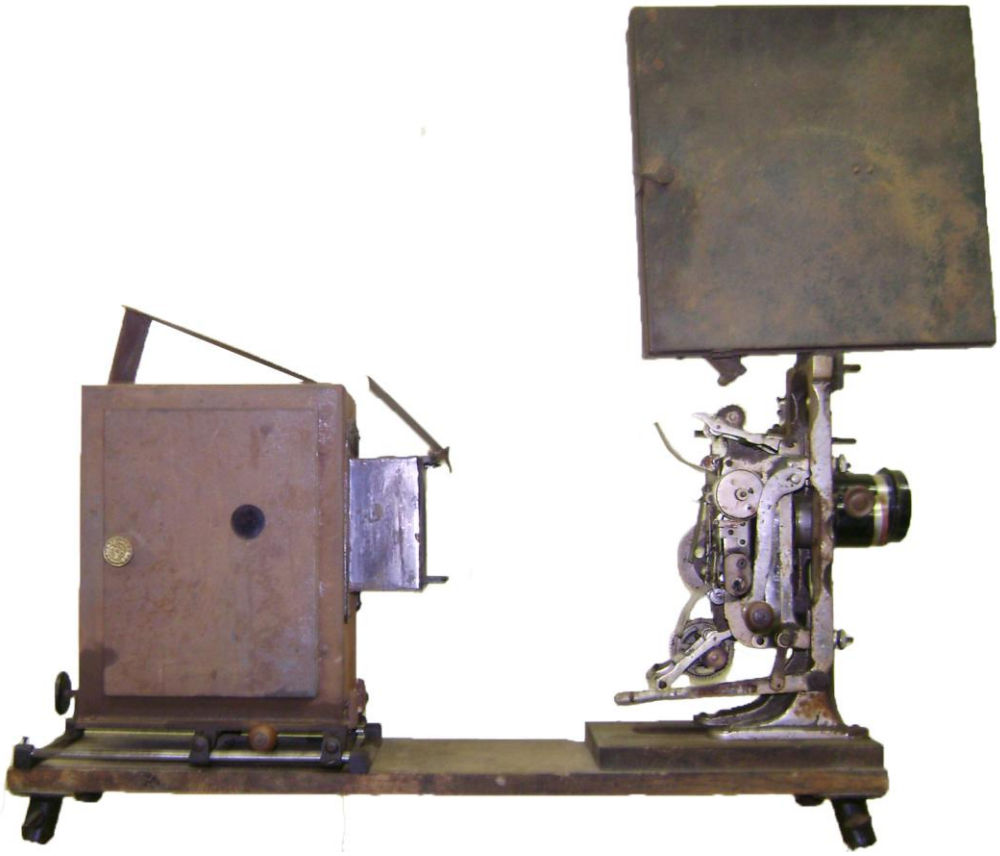
PEERLESS KINETOGRAPH

In Dunston's letter to George K. Spoor dated November 29, 1951 Dunston writes" "*I don't know if you ever heard tell of this projector or not, but I have two models of the "Peerless Kinetograph" here. This machine was developed by Geo. A. Knnak [Knaak] of Oshkosh, Wisconsin in 1907. (It was a fair constructed machine of its day).* It would be interesting to know what Dunston meant when he wrote "*two models*" whether he had two projectors of the same type or whether he had two different models of the Peerless Kinetograph projector.

The only other reference to a Veriscope concerns Enoch J. Rector and a 60 mm camera and projector he made in 1897 to film boxing fights.. *"The Rector projector known as the Veriscope, was installed at the Academy of Music in Fourteenth street where the picture ran through the early summer"* Terry Ramsaye, *A Million and one Nights A History of the Motion Picture Through 1925*, reprint of the 1926 edition, New York, 1964, page 287. Which of course has nothing to do with the two above projectors other than both using the name Veriscope.

PEERLESS KINETOGRAPH

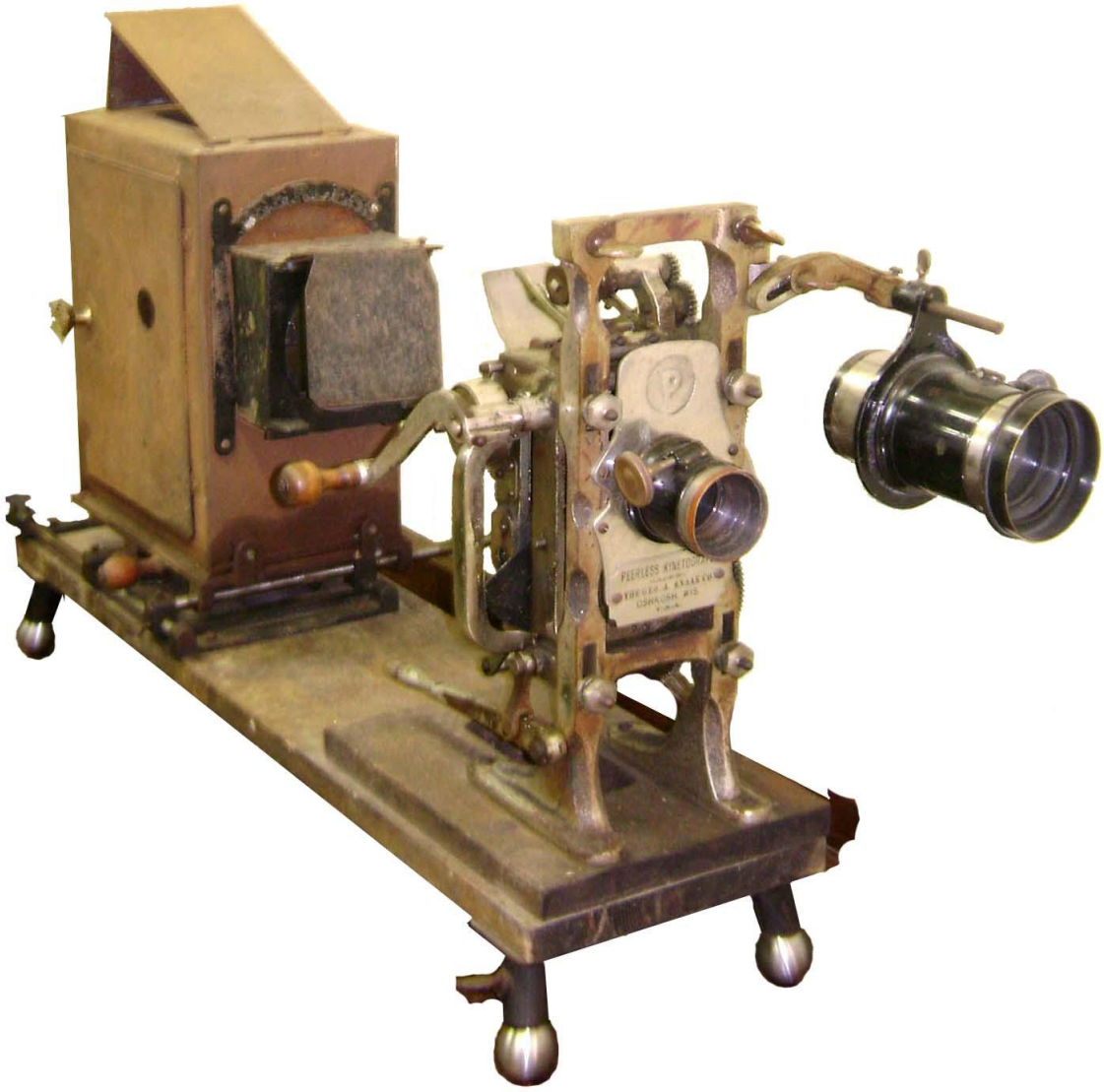
PEERLESS KINETOGRAPH



The PEERLESS KINETOGRAPH Made by
THE GEO. A. KNAAK CO. OSHKOSH, WIS., U.S.A.
Comp0lete machine, Collection Soterios Gardiakos

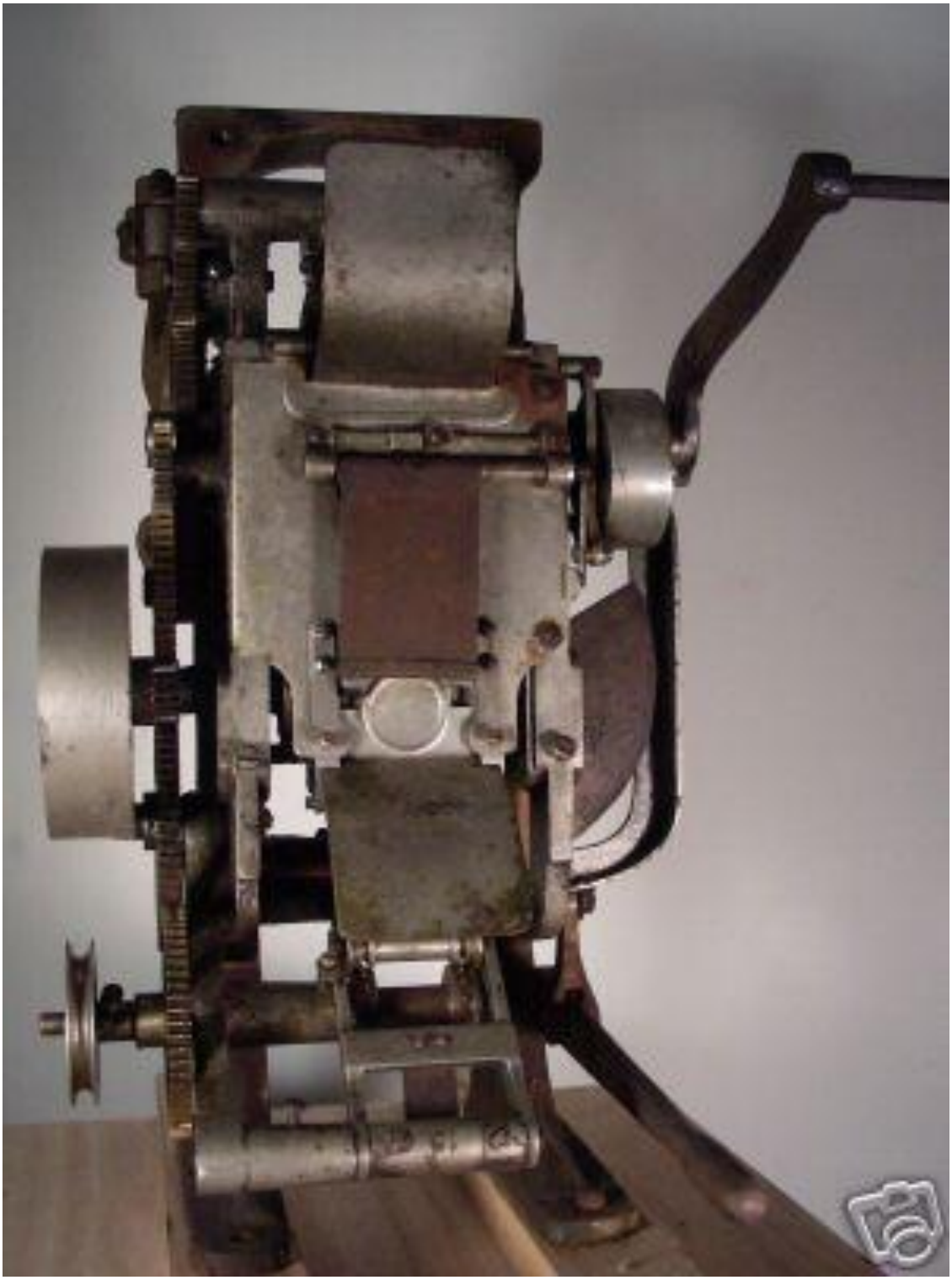
Peerless Kinetograph 35 mm complete movie projector

PEERLESS KINETOGRAPH



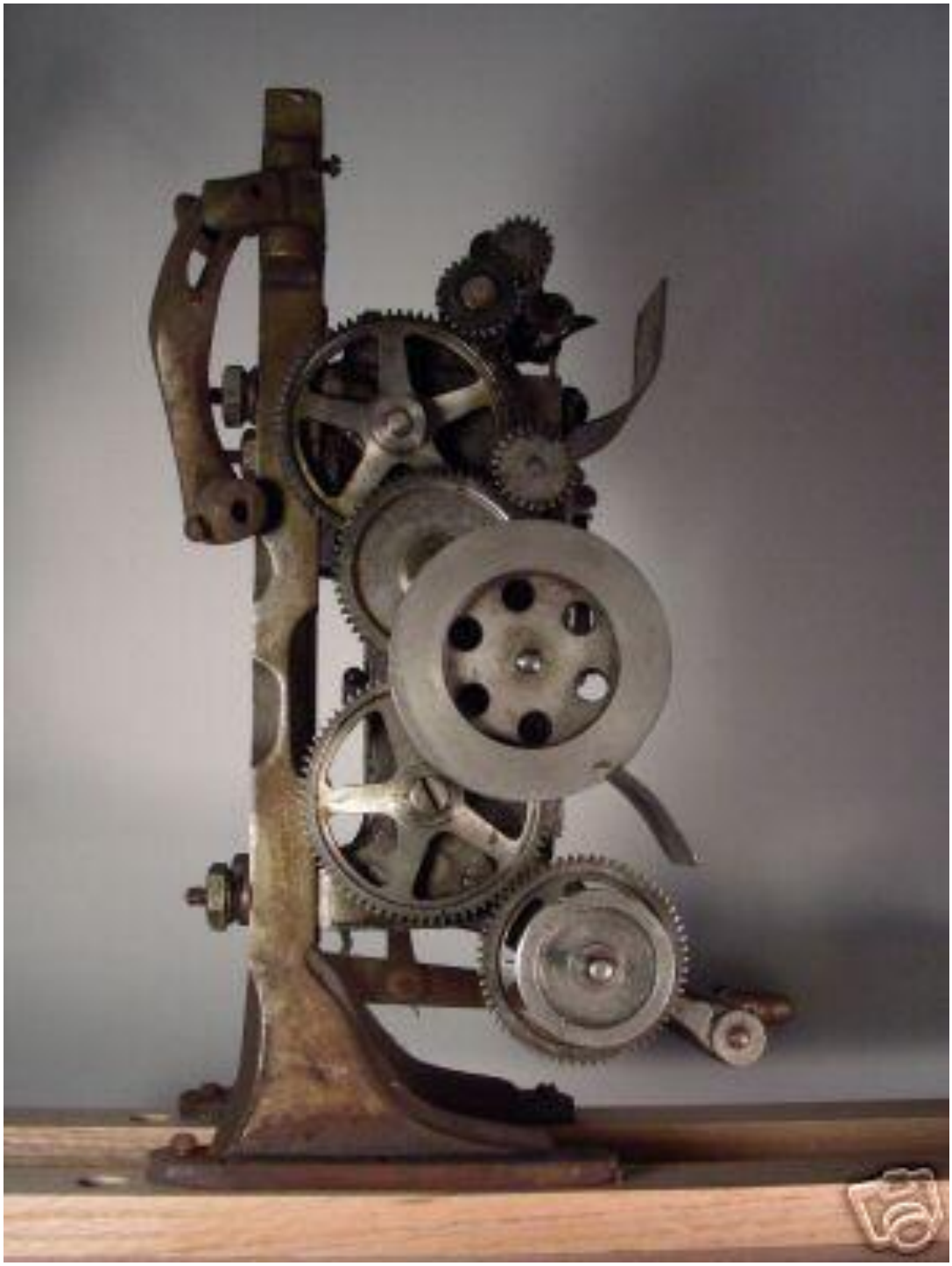
Peerless Kinetograph 35 mm complete movie projector
Collection Soterios Gardiakos

PEERLESS KINETOGRAPH



Peerless Kinetograph 35 mm movie projector (head only)
Collection Soterios Gardiakos

PEERLESS KINETOGRAPH



Peerless Kinetograph 35 mm movie projector (head only)
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PEERLESS KINETOGRAPH

Peerless Kinetograph 35 mm movie projector (head only)
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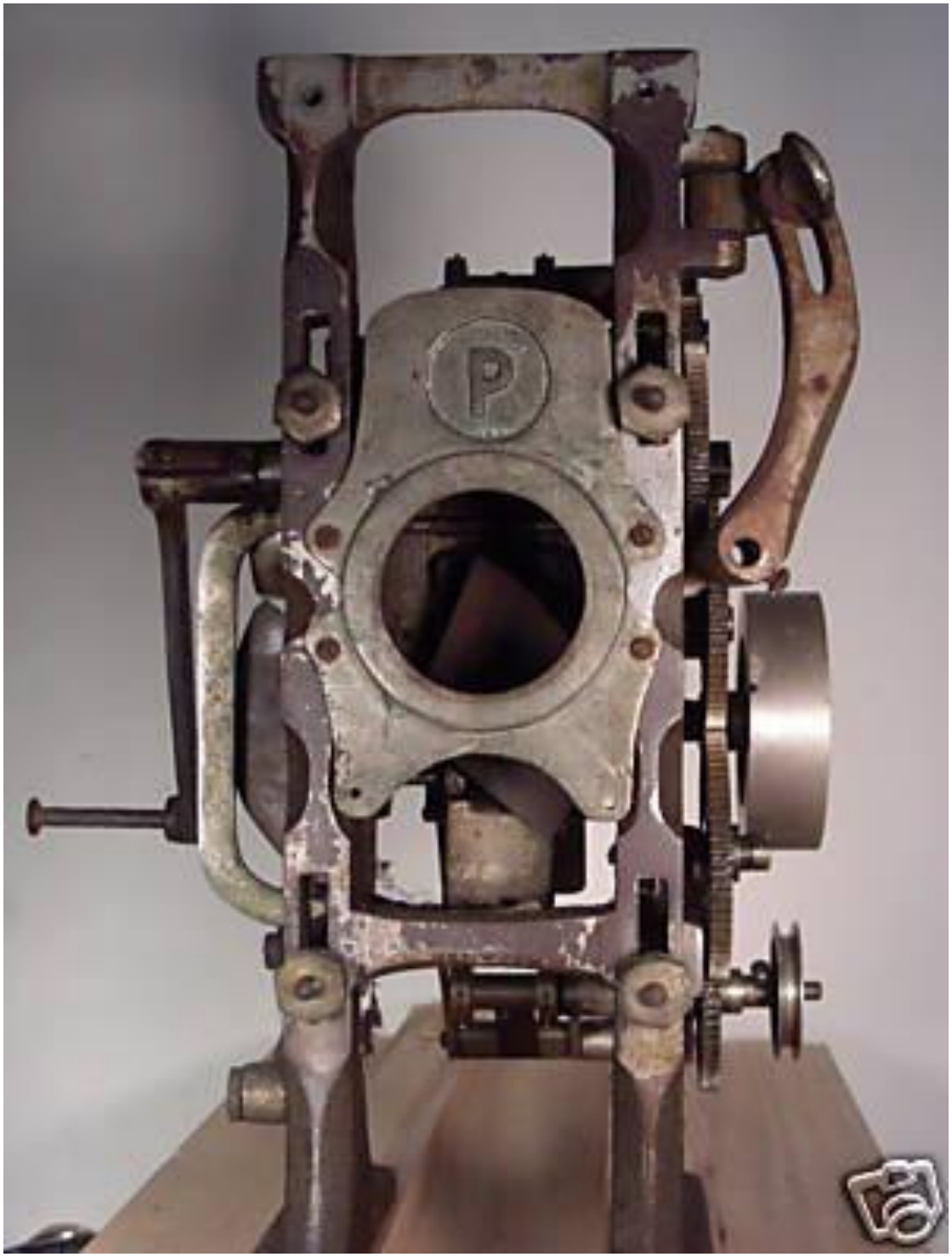
PEERLESS KINETOGRAPH



Peerless Kinetograph 35 mm movie projector (head only)
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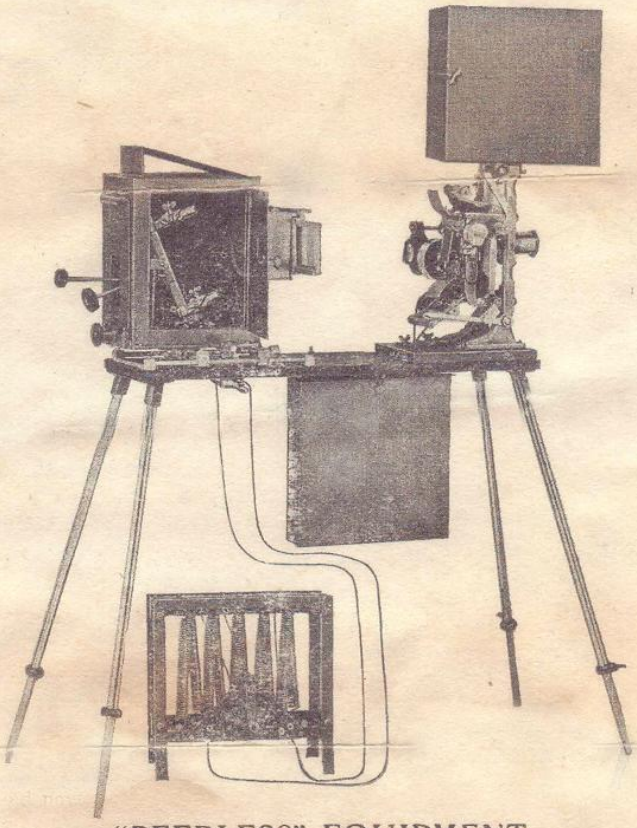
PEERLESS KINETOGRAPH

THE OLD RELIABLE "PEERLESS" PROJECTOR

The Best Machine for Traveling Shows or Small Theatres

"Underwriters Model"



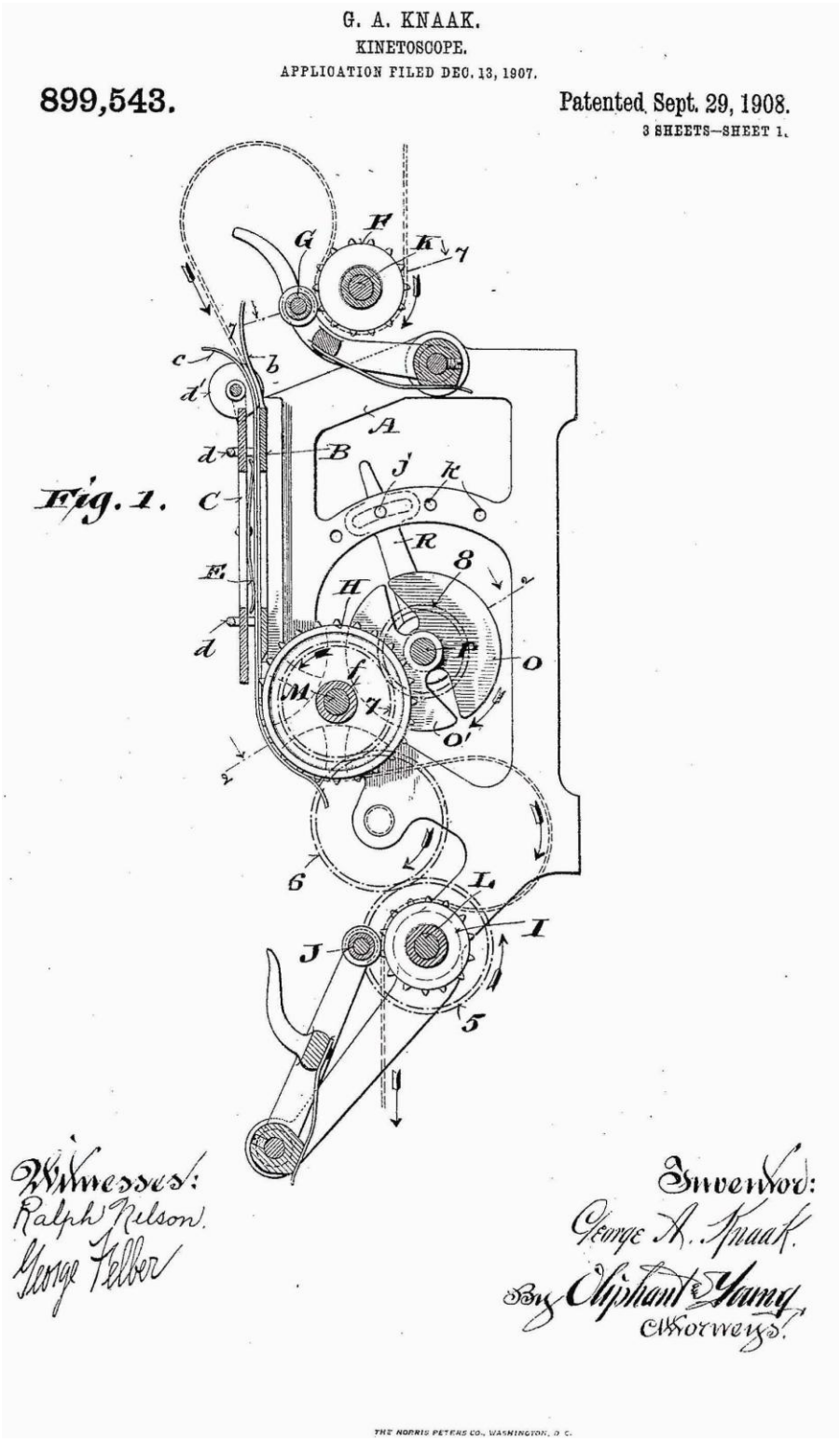
"PEERLESS" EQUIPMENT

Peerless hand power mechanism
Upper film magazine
Lower film magazine, attached below mechanism
Takeup attached for lower magazine
Standard size Stereopticon lens
Standard size motion picture lens
Pair condenser lenses
Electric arc lamp, complete
Rheostat, 110 volts
Switch and Cable
Lamp house, complete
Automatic fire shutter; most practical in existence
Table board with leg flanges
Set of adjustable table legs
Film shields are provided with every Peerless mechanism
Length of table board, 32 inches
Gas equipment instead of electric is furnished if desired
Regular price, completely equipped..$150.00
Our special cut price..... 125.00
Our Special 1916 Equipment. Peerless lamp house and base, mechanism with outside shutter and spiral cut gears. Regular.....$175.00
Our price 135.00
Deduct $15.00 on either equipment if lens and rheostat are not wanted.

Peerless Kinetograph 35 mm movie projector
. The Jack Judson Collection at the Magic Lantern Castle Museum San Antonio, Texas

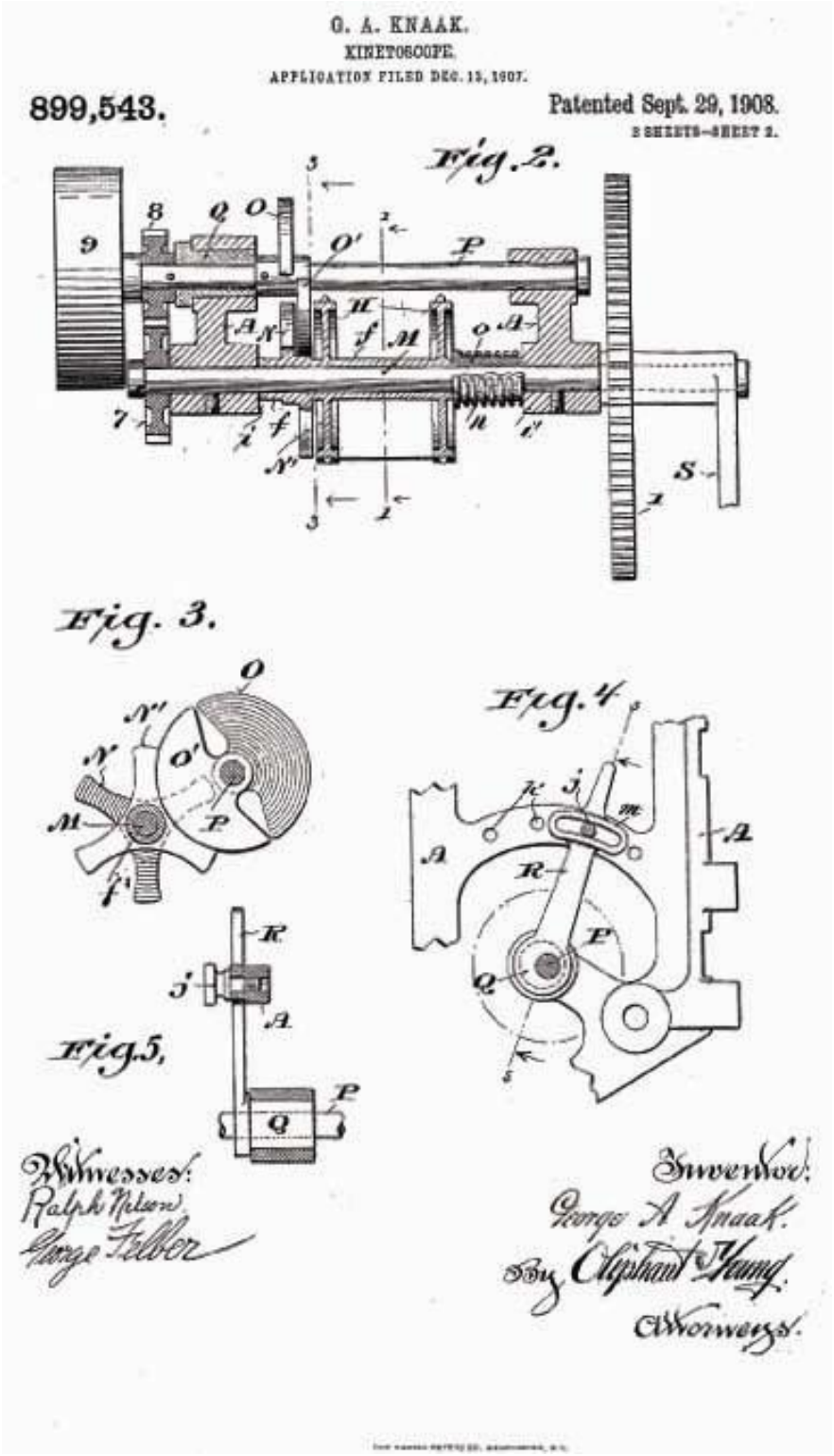
KNAAK KINETOSCOPE PATENT

KNAAK KINETOSCOPE PATENT



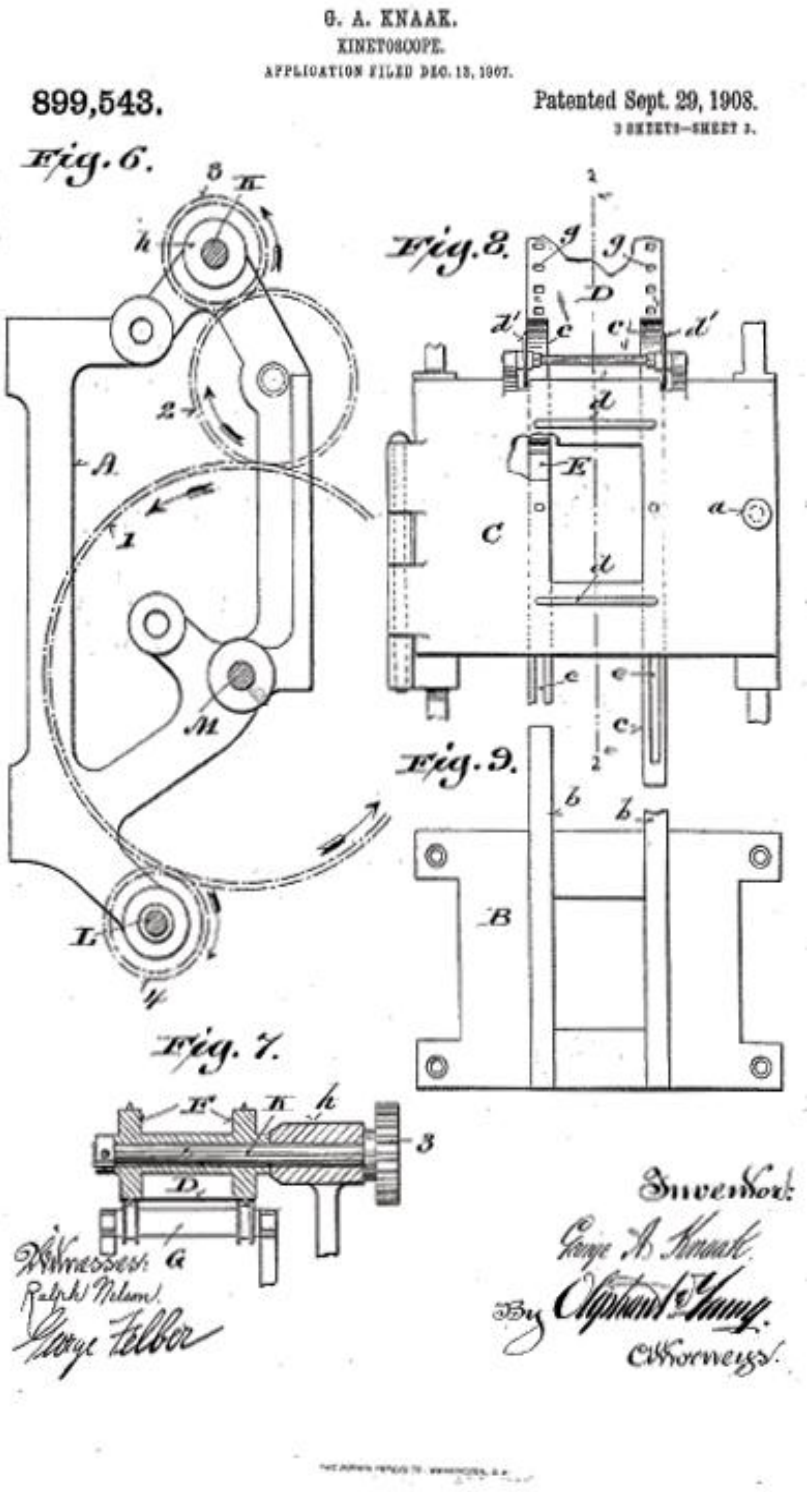
Patent 899,543, Sept. 29,, 1908

KNAAK KINETOSCOPE PATENT



Patent 899,543, Sept. 29,, 1908

KNAAK KINETOSCOPE PATENT



Patent 899,543, Sept. 29,, 1908

KNAAK KINETOSCOPE PATENT

UNITED STATES PATENT OFFICE.

GEORGE A. KNAAK, OF OSHKOSH, WISCONSIN.

KINETOSCOPE.

No. 899,543. Specification of Letters Patent. Patented Sept. 29, 1908.

Application filed December 13, 1907. Serial No. 406,282.

To all whom it may concern:

Be it known that I, GEORGE A. KNAAK, a citizen of the United States, and resident of Oshkosh, in the county of Winnebago and State of Wisconsin, have invented certain new and useful Improvements in Kinetoscopes; and I do hereby declare that the following is a full, clear, and exact description thereof.

The object of my invention is to provide simple and effective film-feeding mechanism for kinetoscopes, the construction and arrangement being such that the film is intermittently fed past the light-apertures of a machine at accurate intervals of time, and without overthrow or vibration commonly resulting from the mechanisms now employed for feeding purposes.

The peculiar construction of the feed-mechanism renders the employment of a large diameter master sprocket-drum possible and the apertured film, which partially encircles the same, is thereby engaged by a greater number of teeth than would otherwise occur on a smaller drum, thus more firmly and accurately holding the film against lateral play or overthrow incidental to the film being loosely fed from a loop. The said construction also materially reduces the wear of the mechanism and film to a minimum.

The invention therefore consists in various structural features and combinations of parts as hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings: Figure 1 represents a sectional elevation of a portion of a kinetoscope embodying the features of my invention, the section being indicated by line 1—1 of Fig. 2; Fig. 2, a cross-section of the same as indicated by line 2—2 of Fig. 1; Fig. 3, a detail section on line 3—3 of Fig. 2, illustrating the intermittent driving-gear; Fig. 4, a fragmentary view of the frame showing a wear adjusting mechanism for the intermittent driving-gear; Fig. 5, a sectional view of same, as indicated by line 5—5 of Fig. 4; Fig. 6, an elevation of the frame looking towards the drive-side, showing the gear-train for transmitting the feed from the main drive-wheel, said gear-train being indicated by dotted lines, the shaft being in section; Fig. 7, a detail sectional view of the upper sprocket-drum and guide-roller which draws the film directly from the reel, the section being indicated by line 7—7 of Fig. 1; Fig. 8, a face view of an apertured plate, behind which the film passes, the plate being illustrated in connection with a portion of the frame to which it is hinged, with a fragment of said film in position thereunder, and Fig. 9, a face view of an apertured backing-plate, between which and the first named plate the film passes.

Referring by letter to the drawings, A indicates a feed-mechanism supporting-frame of a kinetoscope provided with the usual apertured backing-plate B and a hinged clamping-plate C, which plate is coincidently apertured with the first named plate and is secured at its free side to the frame by a clamping-screw *a*, as shown in Fig. 8 of the drawings. The backing-plate B is provided with a pair of longitudinal guide-rails *b*, which extend slightly above its upper edge and are disposed at either side of the aperture in said plate. The picture-film D passes over these rails and is held in friction-contact therewith by a pair of clamping-strips *c* which are connected to the clamping-plate C and each other, by means of cross-braces *d*, the shanks of the braces being bent at right-angles thereto and are passed through openings in the plate above and below its aperture. A pair of leaf-springs are centrally secured to the inner face of the clamping-plates and are alined with the clamping-strips, their free ends being arranged to exert pressure upon said clamping-strips, by means of which pressure sufficient drag or tension is placed upon the film to prevent buckling or slack as the same is fed between the plates. The upper ends of the strips and rails terminate in oppositely disposed flares to provide an unobstructed smooth throat for the entrance of the film, which film is also guided at its edges by disks *d'* that are revolubly mounted upon a rod secured in ears of the clamping-plate.

The picture-film D passes from a reel (not shown) under a small sprocket-drum F, which drum serves as a feeder from the reel, the film being held thereto by a spring-controlled roller G. Said film is then forwardly looped upon itself and thereafter passes downward between the rails and clamping-strips of the plates, from which point it passes to a master sprocket-drum H. The film is held in contact with the driving faces of the sprocket-drum for approximately a quarter of its circumference or more, by means of the clamping-strips, which strips extend downward for this purpose and are provided with

Patent 899,543, Sept. 29,, 1908

KNAAK KINETOSCOPE PATENT

slots *e* to permit passage of the drum-teeth. The film upon leaving the master drum H is bent into a rearward loop which loop tends to press the film about said drum. The film then passes over a lower sprocket-drum I similar in size to the sprocket-drum F, said film being also held to the lower drum by a spring-controlled roller J, from which roller it is free to fall or be taken care of as desired.

The master sprocket-drum H, which is approximately twice the diameter of the upper and lower drums F, I, consists of a pair of sprocket-wheels spaced apart and connected by a hub *f* in such manner that the teeth thereon will mesh with apertures *g* in the edges of the film as is usual in machines of this class. Both of the smaller sprocket-drums are similar in construction to the master drum, being provided with teeth which engage the apertured edges of the film. The upper sprocket-drum F is fast on a driven stud K that is mounted in a bearing *h* of the frame at the drive-side thereof, while the lower drum I is secured to the main drive-shaft L, which shaft is revoluble in bearings of said frame at either side, both of said sprocket-drums being positively driven at the same speed through gear-trains to be described hereinafter. The hub *f* of the master sprocket-drum H is loosely mounted upon an arbor M, which arbor is fixed in bosses *i*, *i'* of the frame, said hub being extended to one side of the drum and provided with a pair of three-toothed tappet-wheels N, N', upon different vertical planes and having their prongs staggered with relation to each other. The tappet-wheels are arranged to be actuated by semi-circular shoes O, O', fast on a constantly driven counter-shaft P, the faces of the tappet-wheel teeth being struck upon the same radii as the shoes, in such manner, that while one of said shoes is describing approximately a half revolution and disengaged from its corresponding tappet the other shoe is nested upon the face of the tappet-wheel teeth upon which it operates and thereby holds the sprocket-drum against rotation until such time as the opposite shoe engages a tooth of its tappet-wheel, which tooth is held in the path of said shoe up to this time.

By the above described drive-mechanisms, it will be seen that with each half revolution of the counter-shaft the master sprocket-drum is rotated one-sixth of a revolution, thus producing a positively locked delay-movement of said drum sufficient to expose a picture at the proper interval of time over the light-aperture of the machine, overthrow being impossible provided a perfect fit between the shoes and the faces of the tappet-wheel teeth is attained. In order to accomplish this fit one end of the counter-shaft P is mounted in the frame by means of an eccentric sleeve Q having a hand-lever R projecting therefrom whereby the sleeve may be partly rotated so as to draw the shoes in perfectly fitting position relative to the curved faces of the tappet-wheel teeth, the lever being thereafter locked by means of a thumb-nut *j* which is in threaded-connection with any one of a series of perforations *k* provided for this purpose in a radial arm of the frame. The thumb-nut passes through a slotted wing *m* of the hand-lever, which wing constitutes a supplementary adjusting means in connection with the fixed adjustment of said thumb-nut in any one of the perforations. The bearing in the frame for the counter-shaft, opposite the eccentric is flared slightly so that said shaft will not bind therein when rocked slightly by the eccentric at its opposite end.

Lateral vibration or play of the master sprocket-drum is taken up by a coil-spring *n* which encircles a thimble *o* loosely mounted upon the arbor M, the spring being interposed between the base *i'* and a collar of the thimble, which collar is thereby forced against the adjacent end of the sprocket-drum hub *f*, the spring-tension exerting pressure to hold the opposite end of said drum-hub against the face of the boss *i* of the frame.

Motion is imparted to the machine by a main driving gear-wheel 1, that is loosely mounted upon the end of the fixed arbor M, and has projecting from its hub a hand-crank S, as shown in Fig. 2. This gear-wheel meshes with an idle gear-wheel 2, that in turn drives a gear-wheel 3 fast on the driving-stud K of the upper sprocket-drum F, by means of which said drum is rotated. The main driving gear-wheel 1 also meshes with a small gear-wheel 4 fast on the main drive-shaft L, there being a similar gear-wheel 5 secured to the opposite end of said main drive-shaft which meshes with a gear-wheel 7 loosely mounted upon an adjacent end of the fixed arbor M, and is provided for transmitting motion to the counter-shaft P through a gear-wheel 8 secured thereto, the said counter-shaft being also provided with a fly-wheel 9, as shown.

From the foregoing described combination of gearing properly proportioned with relation to each other, it will be seen that the upper and lower slack loops of the film will remain constant and be taken care of by the respective sprocket-drums. The master sprocket-drum in consequence has only to exert sufficient strain on the film to feed the same downward between the plates from one loop to the other at properly timed intervals, the said master-drum being of such large proportion that a sufficient number of its teeth engage the apertures in the film so as to distribute the pulling strain thereon over a larger area in such a manner that the film is not liable to be damaged, which would be the case if the feeding was dependent on a few teeth, the intermittent driving-gear at the

Patent 899,543, Sept. 29,, 1908

KNAAK KINETOSCOPE PATENT

same time insuring perfectly timed movements of said film without vibration or overthrow.

I claim:

1. In a kinetoscope, a film-feed mechanism comprising a sprocket-drum, a driven-shaft parallel to the drum, a pair of oppositely disposed semi-circular shoes secured to the shaft and offset with relation to each other, and a tappet-wheel for each shoe carried by the sprocket-drum, the teeth of one tappet-wheel being staggered with relation to the teeth of the other tappet-wheel and the working-faces of the teeth of both wheels shaped to conform to and engage with the semi-circular portions of the shoes.

2. In a kinetoscope, a film-feed mechanism comprising a sprocket-drum, a driven-shaft parallel to the drum, a pair of oppositely disposed semi-circular shoes secured to the driven shaft and offset with relation to each other, a tappet-wheel for each shoe carried by the sprocket-drum, the teeth of one tappet-wheel being staggered with relation to the teeth of the other tappet-wheel and the working-faces of the teeth of both wheels shaped to conform to and engage with the semicircular portions of the shoes, and means in connection with the driven-shaft for adjusting said shoes with relation to said tappet-wheels.

3. In a kinetoscope film-feed, a film-tension mechanism, constantly driven film-feed sprockets above and below the tension mechanism, and a fixed arbor intermediate of the lower film-feed sprocket and said tension device, a sprocket-drum loosely mounted upon the arbor tappet-wheels carried by the drum, a drive-shaft disposed parallel to the fixed arbor, and actuating-shoes for the tappet-wheels carried by the drive-shaft.

4. In a kinetoscope film-feed, a film-tension mechanism, film-driving sprockets above and below the tension-mechanism, and a film-feed sprocket-drum located intermediate of said tension-mechanism and lower film-driving sprocket, tappet-wheels carried by the film-feed sprocket-drum, a drive-shaft disposed parallel to the sprocket-drum axis, actuating shoes for the tappet-wheels carried by the drive-shaft, and a crank in gear-train connection with the drive-shaft and sprockets above and below the aforesaid tension-mechanism.

In testimony that I claim the foregoing I have hereunto set my hand at Oshkosh in the county of Winnebago and State of Wisconsin in the presence of two witnesses.

GEORGE A. KNAAK.

Witnesses:

GEORGIA C. FREEBORN,

CLAUDE A. FLEMING.

Patent 899,543, Sept. 29,, 1908

VERISCOPE

Wilboken Manufacturing Company

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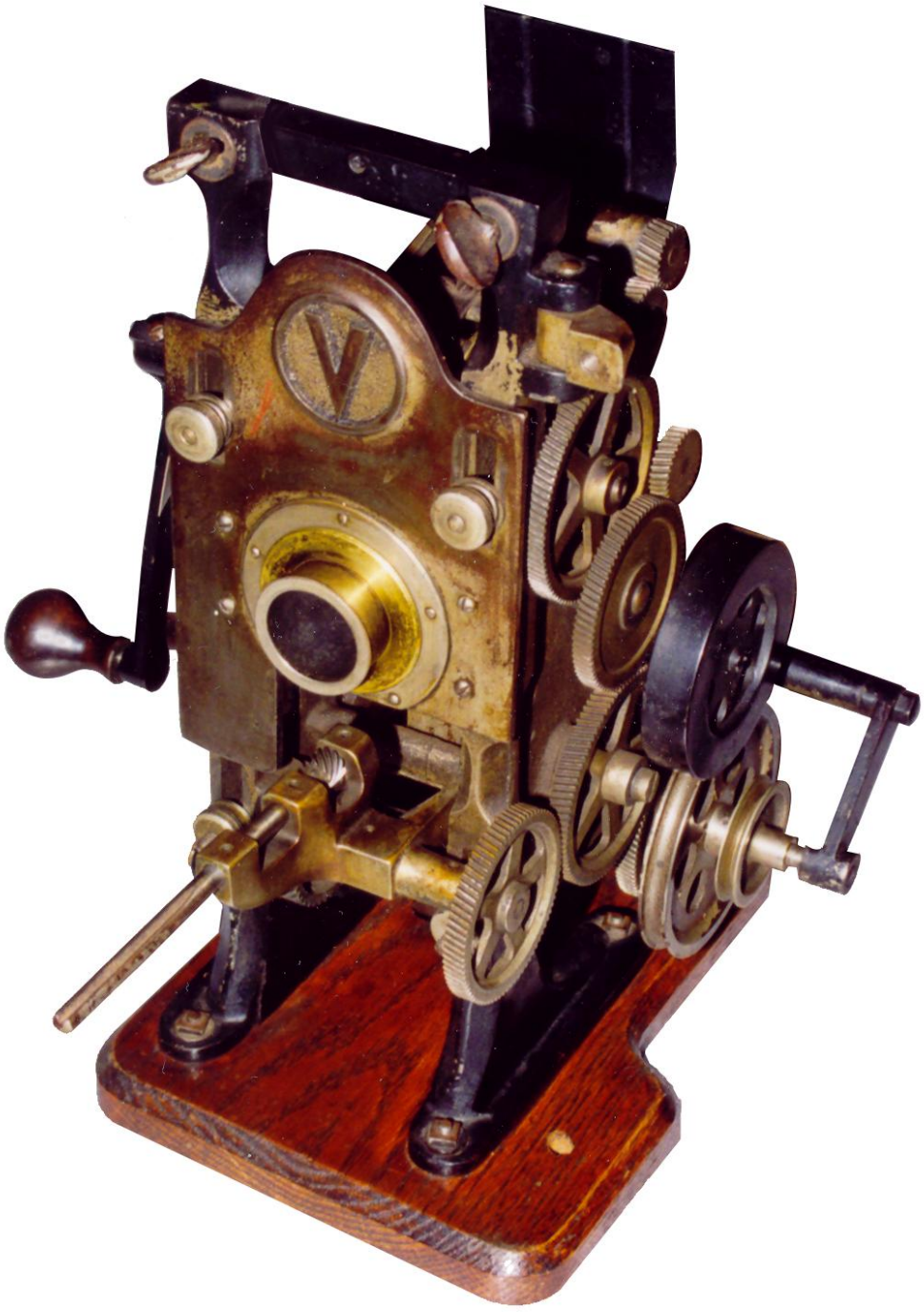
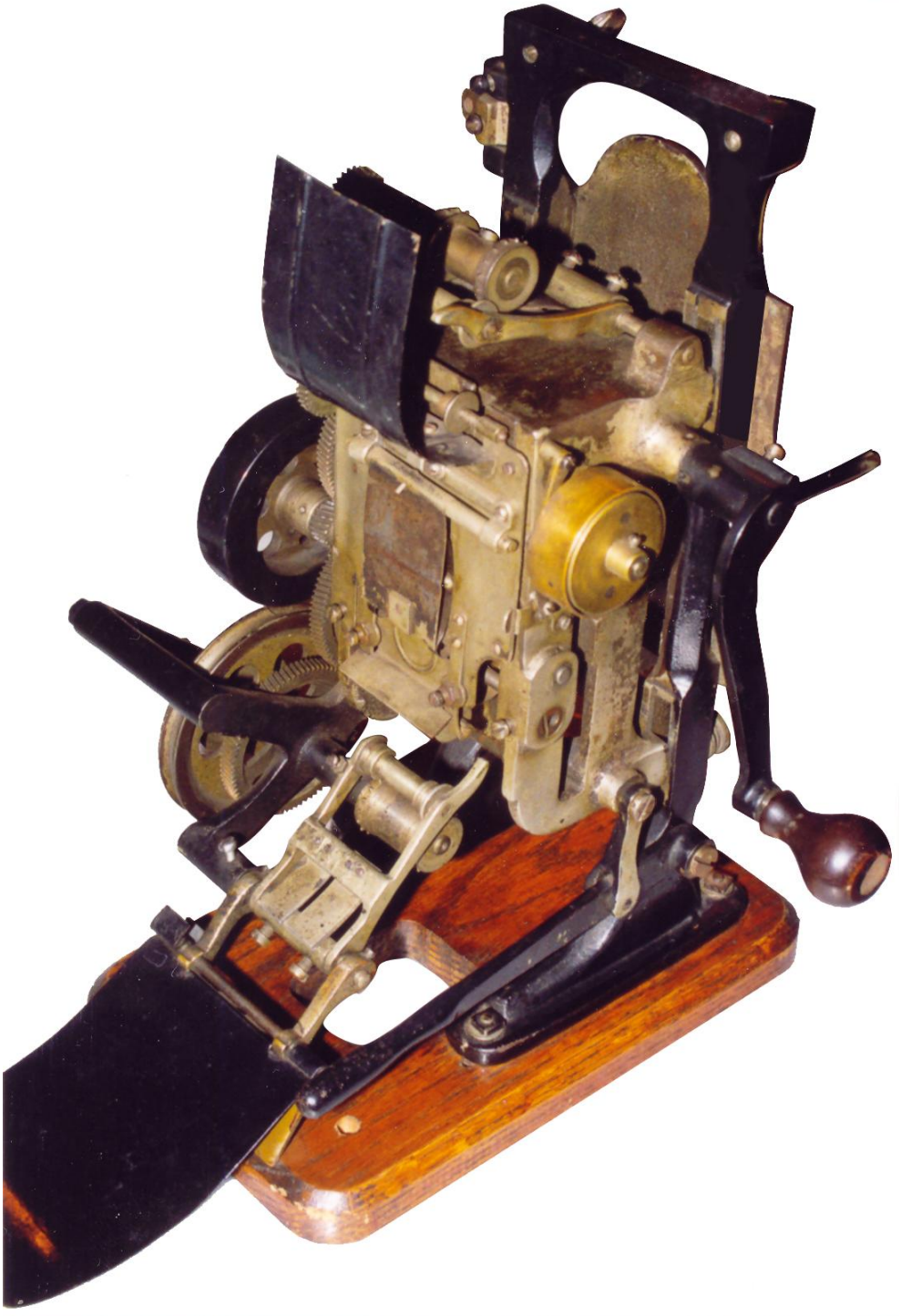


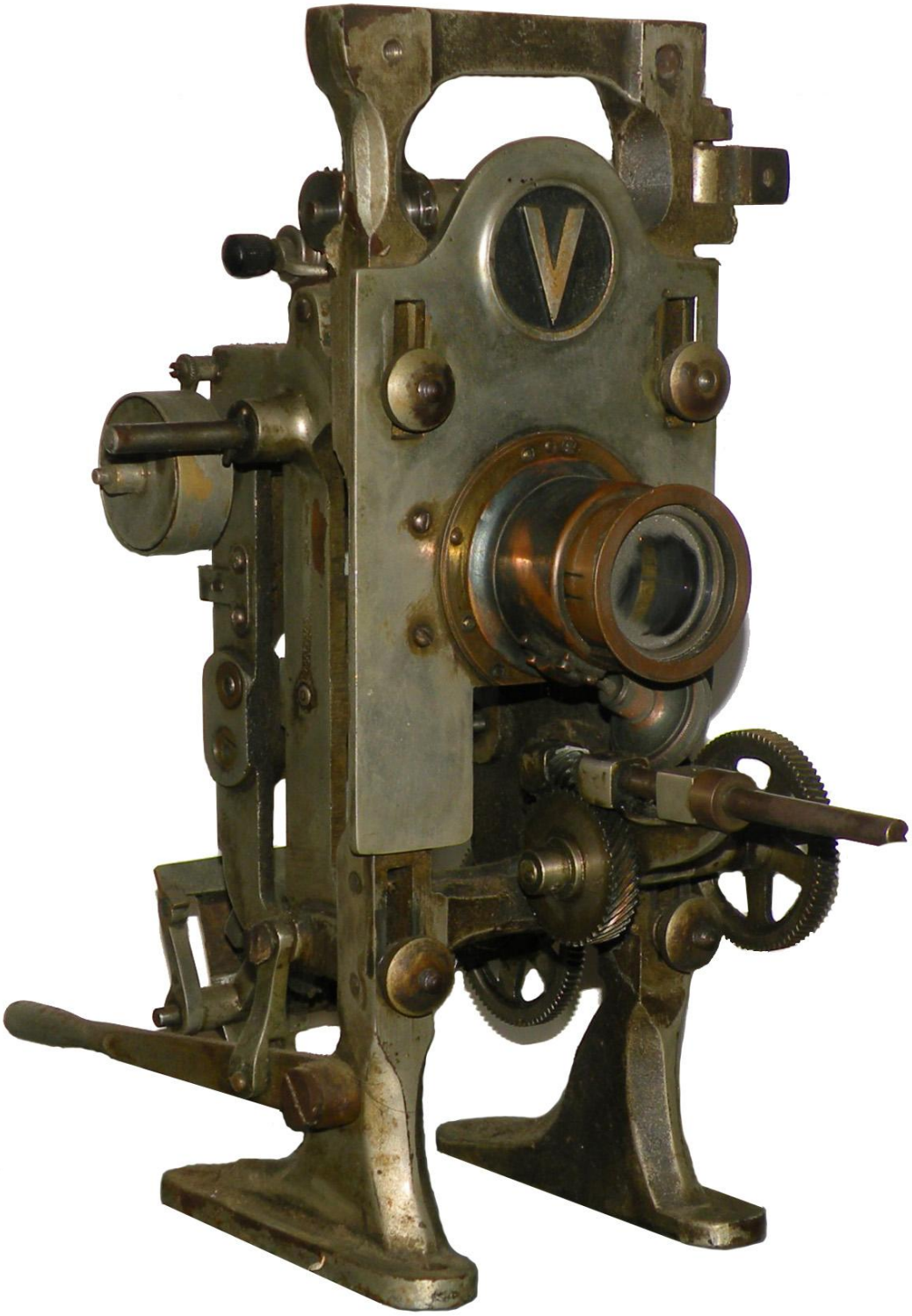
Veriscope 35 mm movie projector
Ex C. W. Dunston collection now in the Smithsonian
Photo courtesy Carey Williams

VERISCOPE



Veriscope 35 mm movie projector
Ex C. W. Dunston collection now in the Smithsonian
Photo courtesy Carey Williams

VERISCOPE

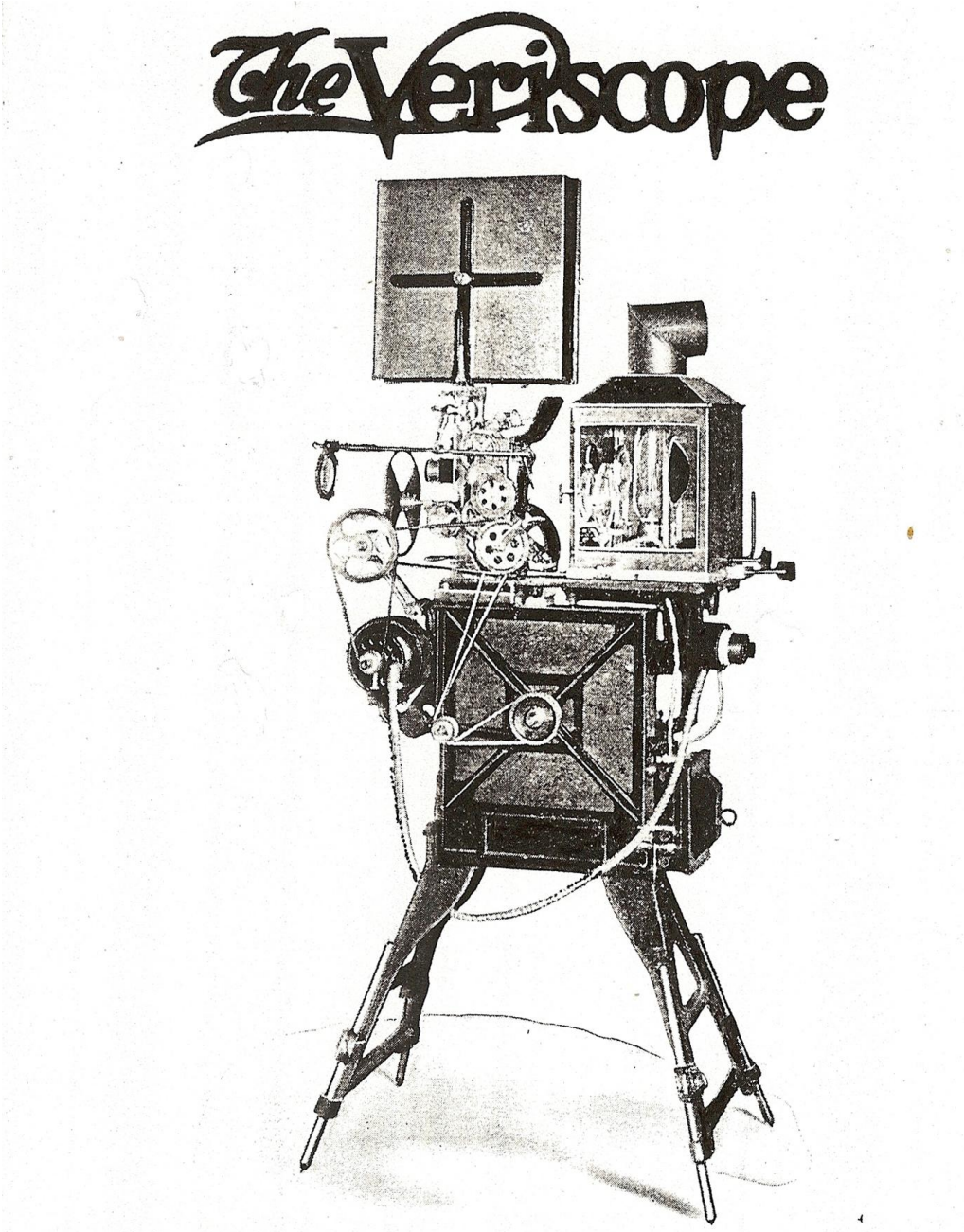


Veriscope 35 mm movie projector
Carey Williams collection

VERISCOPE

1915 Veriscope Projector advertisement
. The Jack Judson Collection at the Magic Lantern Castle Museum San Antonio, Texas

VERISCOPE



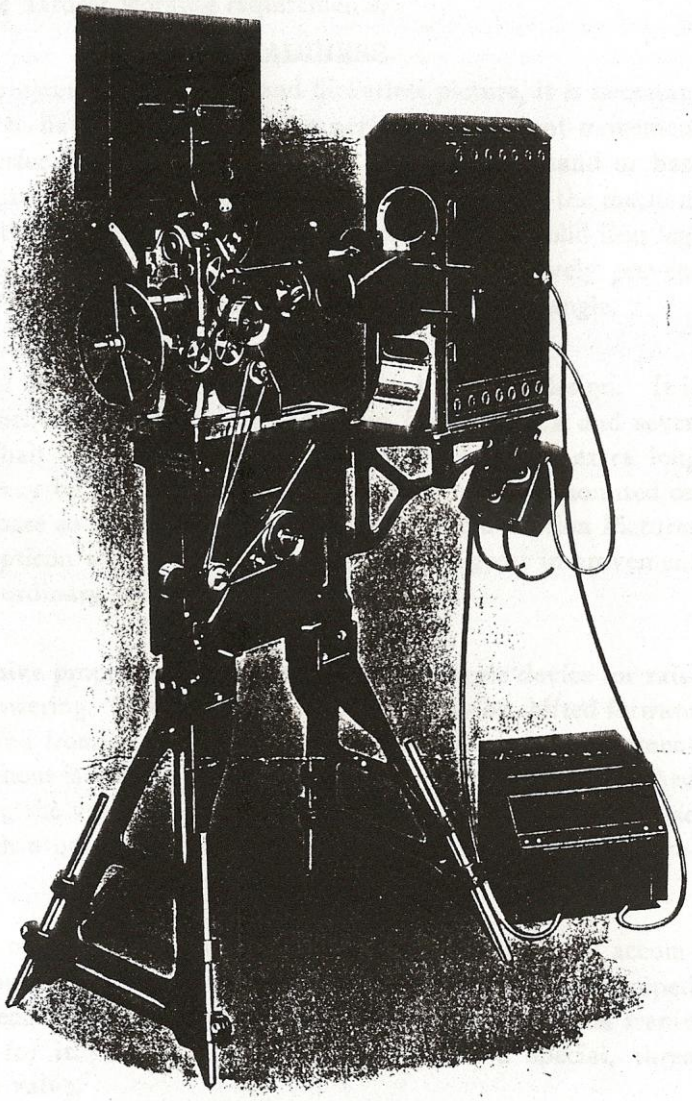
The Worlds Greatest Moving Picture Machine. for theatres churches and schools. Motor driven. Large fire proof magazines.holds two thou sand feet of film. Equiped with carbon or mazda light. Automaticfire shutter. Attach to any light socket with mazda light same current runs Motor and light. Price complete with rewinds. lenses to suit your place extra reels mazda light with wire cable and plug $297.50

Undated Veriscope Projector advertisement
Wilboken Manufacturing Comp

VERISCOPE

Veriscope completely equipped with 110 volts Rheostat and one-quarter size highest grade lenses, for both motion pictures and stereopticon	$190.00
Gundlach Manhattan motion picture lens:—extra	10.00
One-half size Stereopticon lens instead of one-quarter size:—extra	6.00
Deduct from price of outfit:—	
For omission of Rheostat	8.00
For omission of M. P. Lens	4.00
For omission of Stereopticon lens	3.00
For 220 Volt Rheostat add	20.00

Fort Wayne Compensarc or Bell-Howell inductor compensator, instead of Rheostat will be furnished upon application at additional cost.



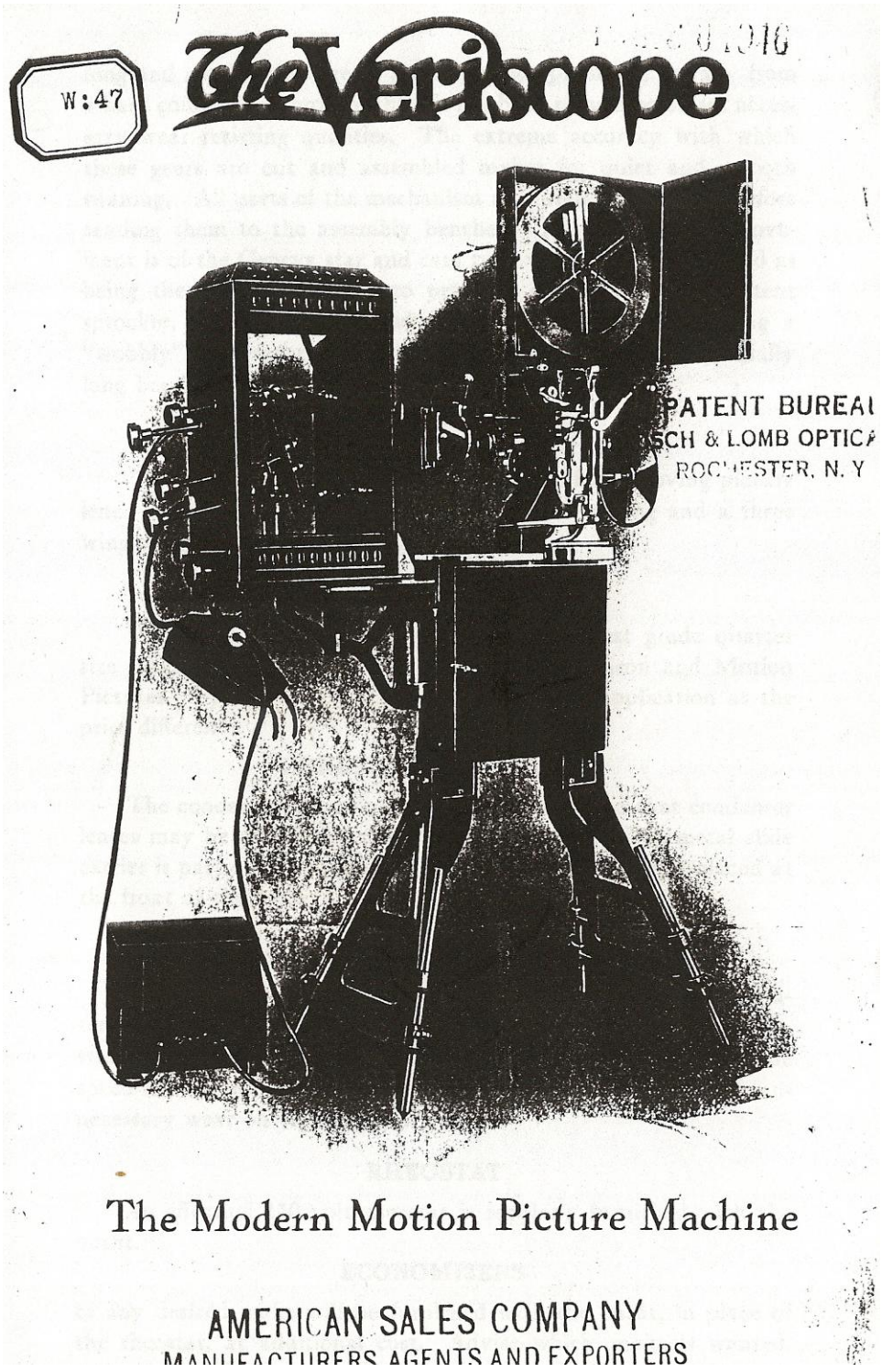
Made and Guaranteed by

WILBOKEN MANUFACTURING COMPANY

248-250 Reed St., Milwaukee

Undated Veriscope Projector advertisement
Wilboken Manufacturing Company

VERISCOPE



Undated Veriscope Projector advertisement
Wilboken Manufacturing Company

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

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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

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

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

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

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