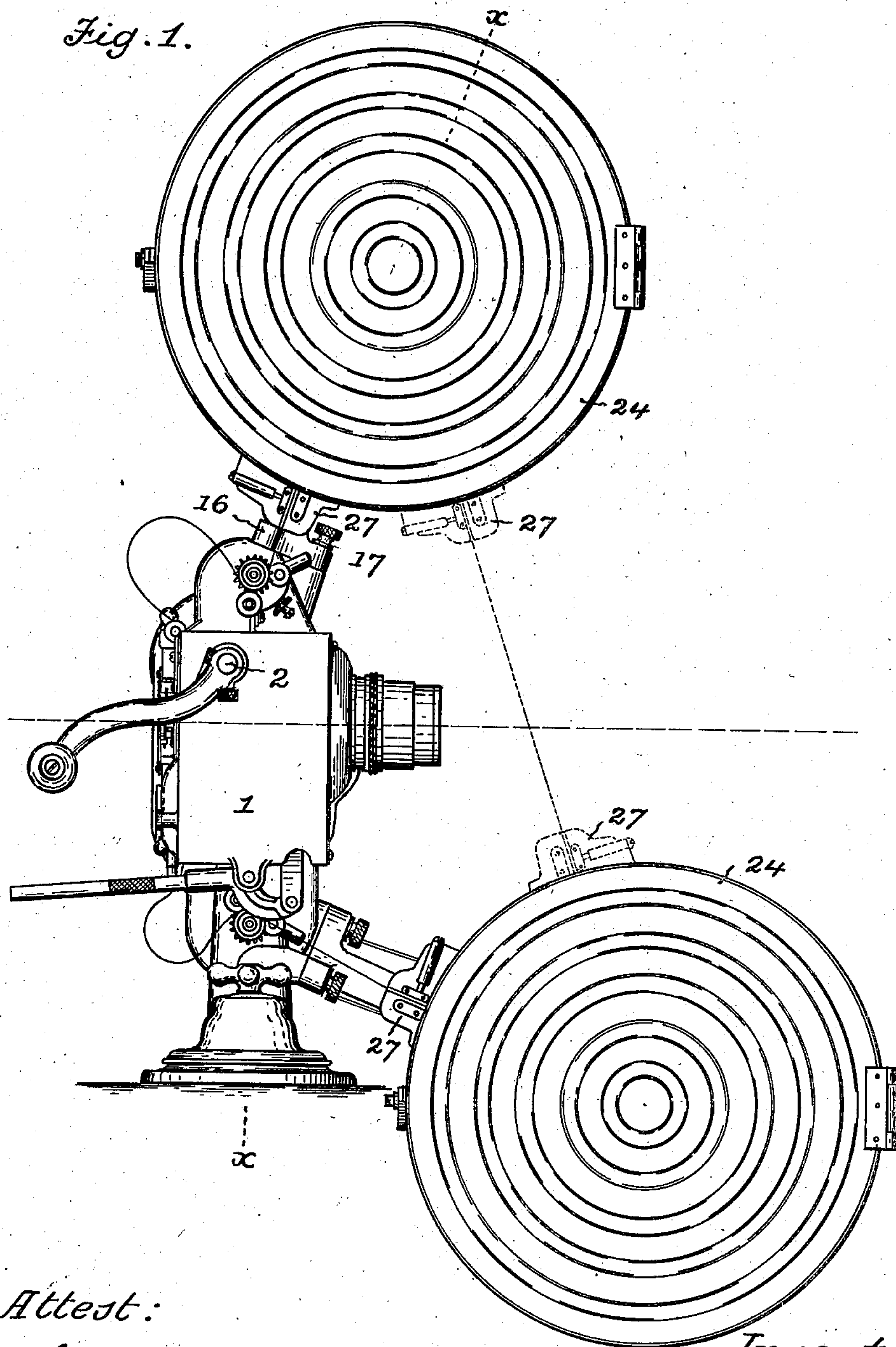


919,773.

A. C. ROEBUCK.
FILM REELING MECHANISM.
APPLICATION FILED JAN. 30, 1908.

Patented Apr. 27, 1909.
3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

Fig. 2.

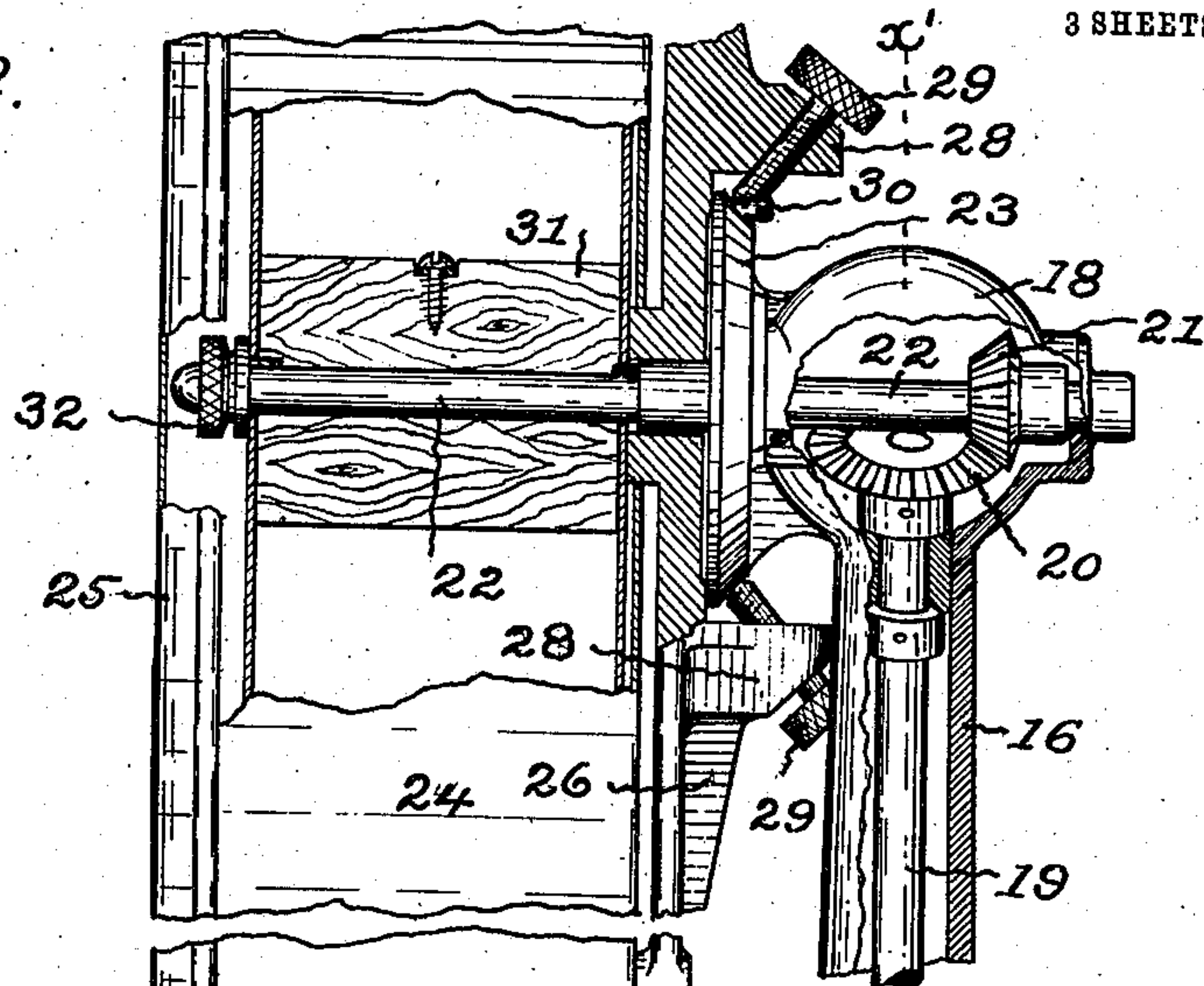


Fig. 3.

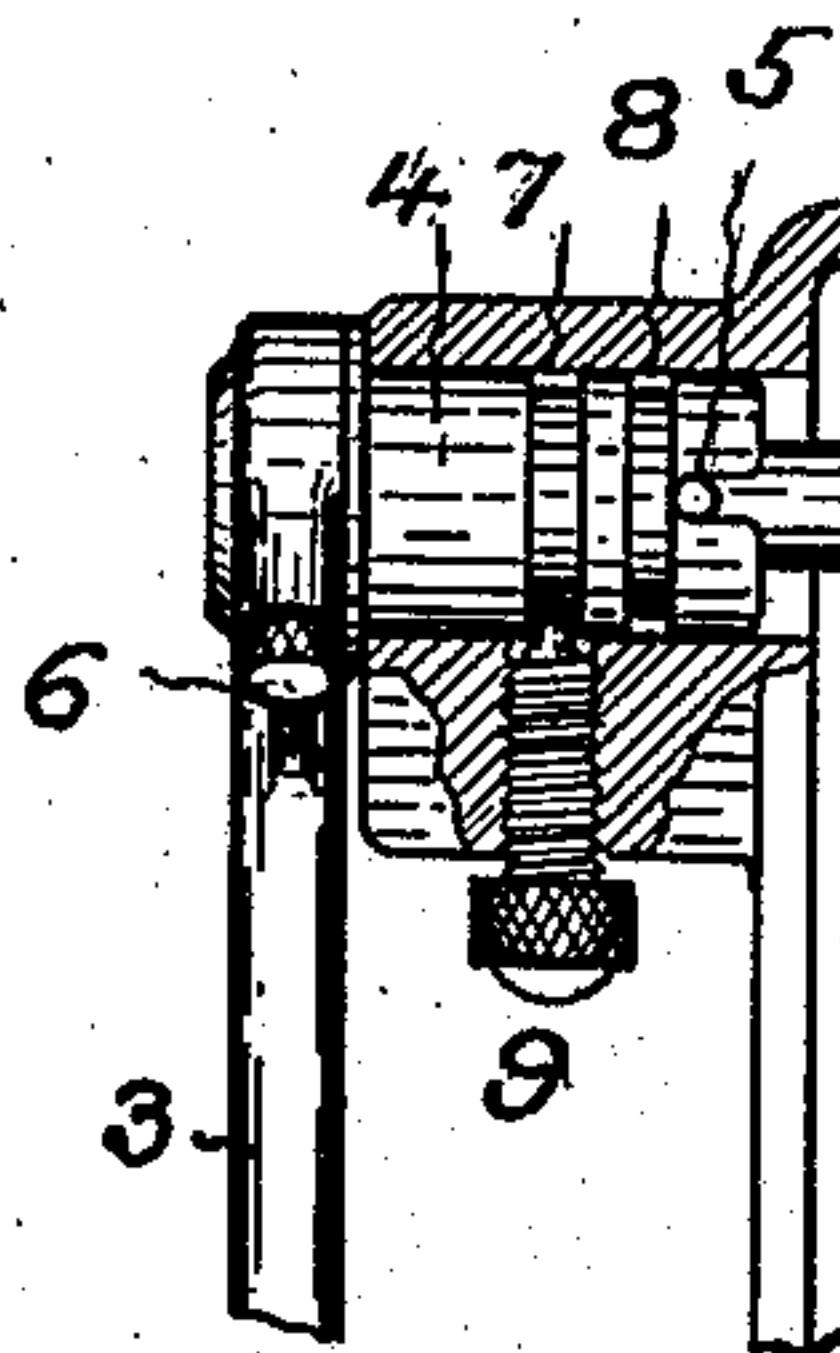
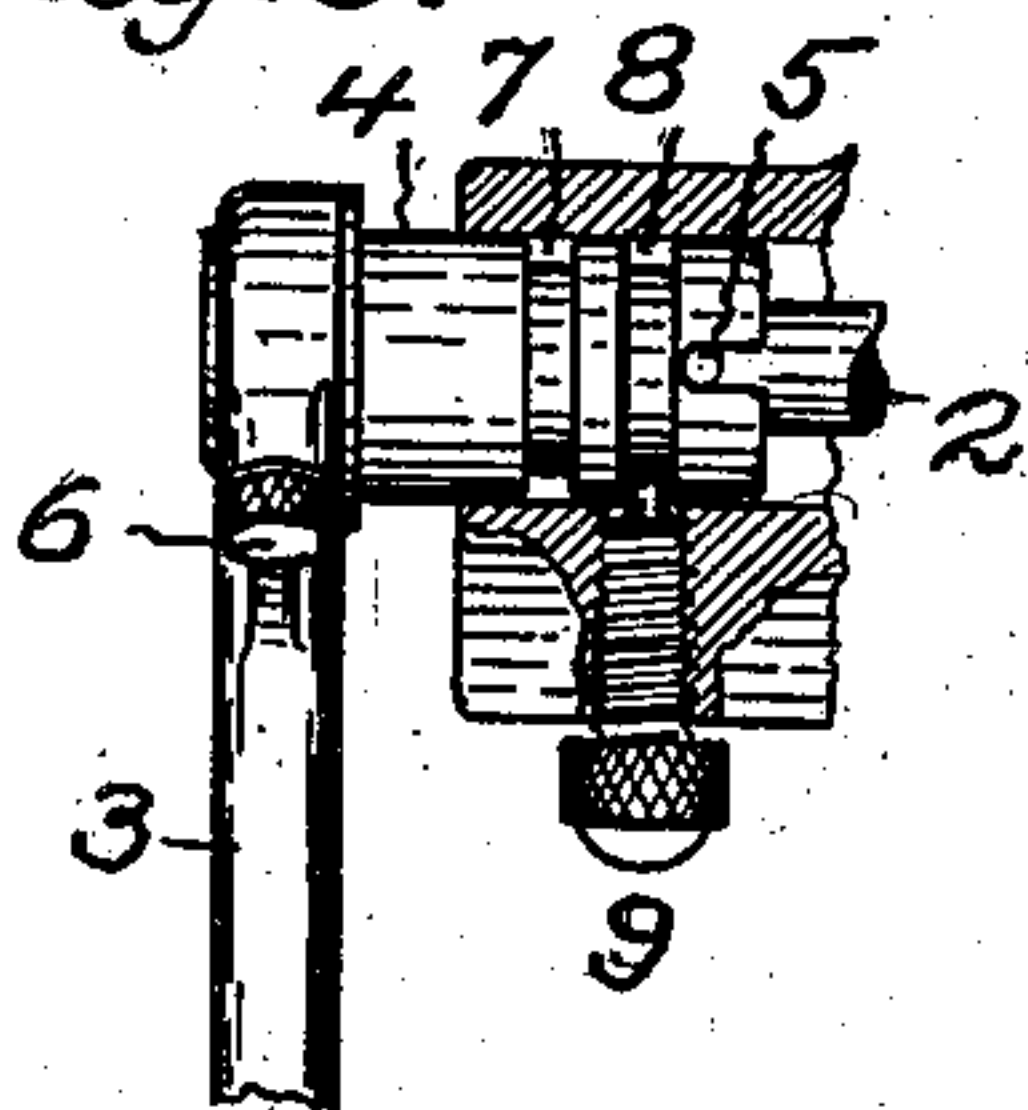
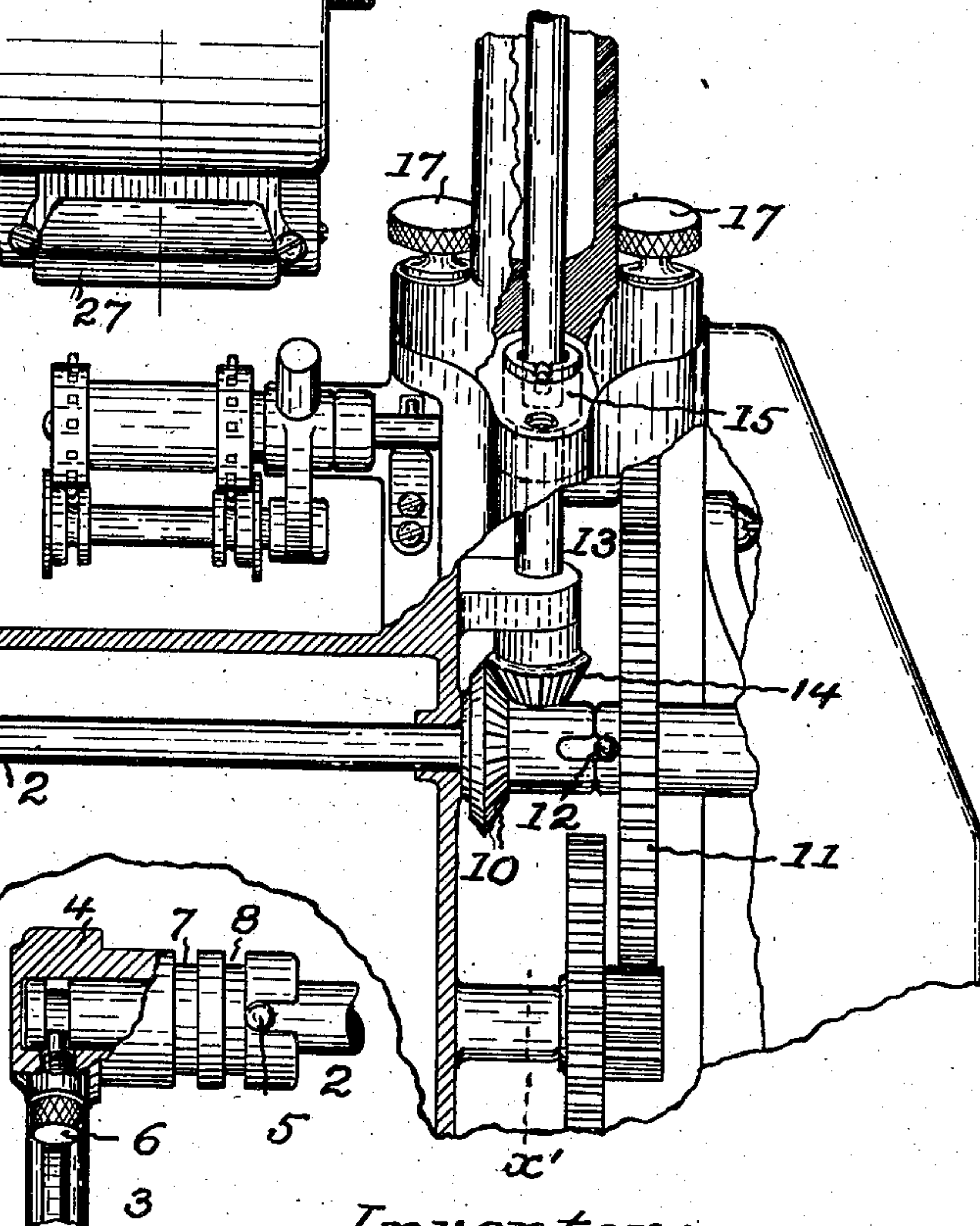


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

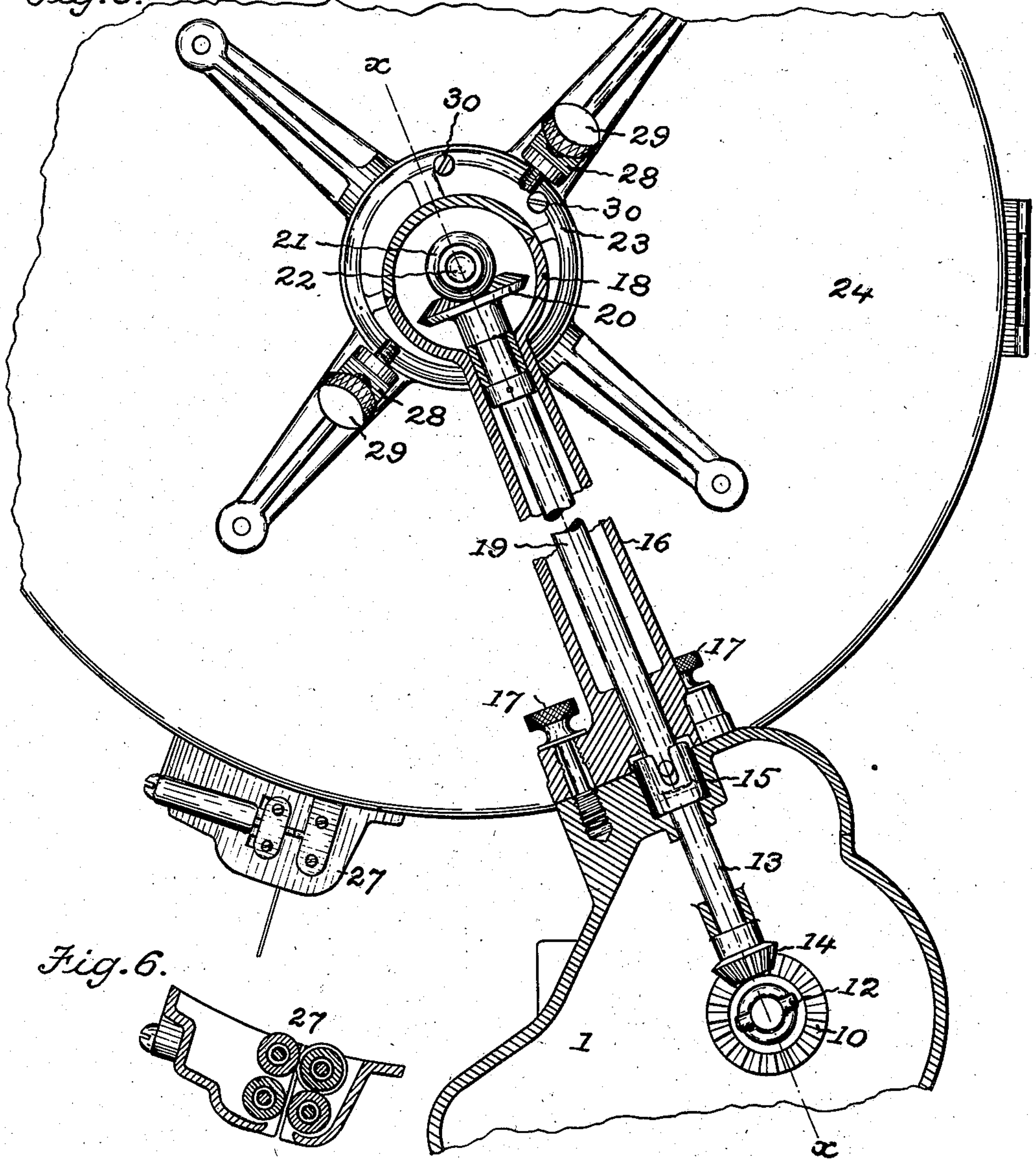
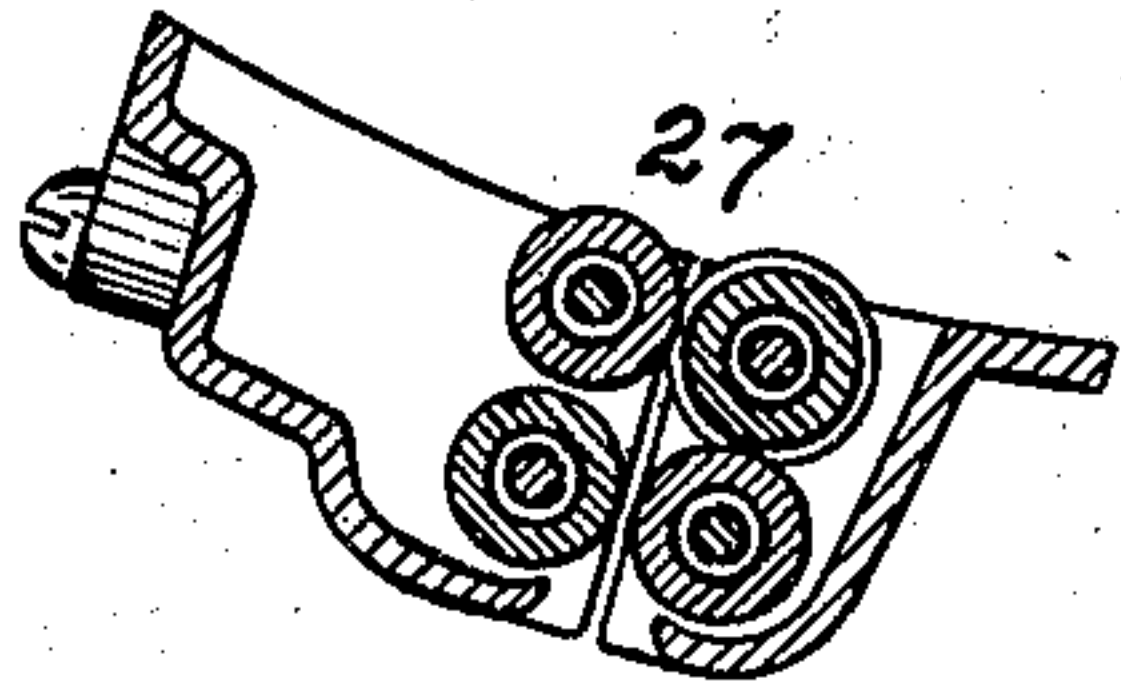


Fig. 6.



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UNITED STATES PATENT OFFICE.

ALVAH C. ROEBUCK, OF CHICAGO, ILLINOIS.

FILM-REELING MECHANISM.

No. 919,773.

Specification of Letters Patent.

Patented April 27, 1909.

Application filed January 30, 1908. Serial No. 413,347.

To all whom it may concern:

Be it known that I, ALVAH C. ROEBUCK, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Film-Reeling Mechanisms, of which the following is a specification.

This invention relates to the film reeling and rewinding mechanisms of kinetoscopes, and has for its object to provide a simple and effective construction of parts whereby the rewinding of the film after its passage through the kinetoscope is rapidly and conveniently effected, and without the removal of the magazines from the machine, all as will hereinafter more fully appear.

In the accompanying drawings:—Figure 1, is a side elevation of a kinetoscope with the film magazines in place, the position of the magazines for delivery of the film to the kinetoscope being shown in full lines, and in the rewinding position in dotted lines. Fig. 2, is a detail transverse sectional elevation on line $x-x$, Figs. 1 and 5. Fig. 3, is a detail sectional elevation of the handle and main shaft in a position opposite to that shown in Fig. 2. Fig. 4, is an enlarged detail sectional elevation of the connection between the handle and main shaft. Fig. 5, is a detail longitudinal sectional elevation on line $x'-x'$ Fig. 2. Fig. 6, is a detail longitudinal section of the fire trap of the film magazine.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 represents the main frame or housing of the kinetoscope, preferably of the closed form shown, and within which is arranged the film feeding, light controlling, and other minor mechanisms of the kinetoscope, examples of which mechanisms are described in detail in my application for Letters Patent Serial Nos. 413,347 and 425,094 filed Jan. 30, 1908 and April 4th 1908 respectively.

2 is the main operating shaft of the kinetoscope supported transversely in bearings in the housing 1 and adapted to have limited endwise adjustment in said bearings in the manner and for the purpose hereinafter set forth.

3 is the operating handle formed with a tubular hub 4 adapted to fit over one end of the main shaft 2 and connected thereto against independent rotation by a trans-

verse pin 5 engaging in recesses formed in the inner end of said hub. The hub is held from independent longitudinal movement on said shaft by a radial screw 6 passing through said hub and engaging in a circumferential groove near the outer end of the said shaft. Such construction is illustrated in Figs. 2, 3 and 4, and affords a very substantial and readily detachable connection between said handle and shaft. The tubular handle hub 4 fits a similarly formed sleeve on the main housing 1, and in addition to forming a bearing for the handle end of the shaft, is capable of the limited endwise adjustment above referred to, and to such end is formed with a pair of circumferential grooves 7 and 8 into one or the other of which the set screw 9, passing radially through said housing sleeve, engages to positively hold said hub and shaft in one or the other of their endwise adjustments, see Figs. 2 and 3.

10, is a bevel gear, and 11 a spur gear mounted loosely on a common axis with the main shaft 2, and in adjacent relation to each other; such gears have hubs which abut against each other and are formed with opposed recesses in their abutting ends as shown.

12 is a transverse pin passing through the main shaft 2, and adapted in one endwise adjustment of the shaft to engage the hub recesses aforesaid of the bevel gear 10, to lock said bevel gear to the main shaft, and render active the rewinding mechanism hereinafter described, and of which the said bevel gear constitutes a part. In the other endwise adjustment of the main shaft said pin 12 is adapted to engage the hub recesses aforesaid of the spur gear 11, to lock the same to the main shaft and render active the film feeding, light controlling shutter, take up, and other usual mechanisms of the kinetoscope, and of which said spur gear 11 constitutes the primary member of the driving gearing by which such mechanisms are operated.

By the above described arrangement of parts the film rewinding mechanism is in an inactive condition, while the other mechanisms above referred to are in an active condition, and vice versa, and admits of the main crank arm being used to operate the film rewinding mechanism in addition to its ordinary functions of operating the different kinetoscope mechanisms, and without interference with or disturbance of said mechan-

isms and adds materially to the merit and convenience of the apparatus. Another advantage of the present construction lies in the fact that the crank handle for both the exhibition and rewinding of the film, is on a line with the elbow of the operator, the most comfortable position, instead of having the rewinding crank on a line with the shoulders or thereabout, as is usual with the ordinary type of rewinding mechanism with the crank mounted on the reel arm.

13 is a shaft journaled in a side extension of the main housing 1, and carrying at its lower end a bevel pinion 14 meshing with and receiving motion from the aforesaid bevel gear 10. At its upper end the shaft 13 carries a socket hub or coupling head 15 adapted for engagement with the countershaft of the rewinding mechanism hereinafter described.

16 is a reel arm or support preferably of a tubular form shown, and detachably secured to the top of the housing extension aforesaid by means of a spider base and attaching screws 17 passing therethrough and screwing into said housing extension as illustrated in Figs. 2 and 5. At its upper end said reel arm is formed with an expanded or hollow head or enlargement 18 for containing and supporting the reel shaft and gearing connections hereinafter described.

19 is the countershaft of the rewinding mechanism above referred to, journaled in the reel arm 16 and having at its lower end a non-circular portion adapted for operative engagement with the socket hub 15 before described. At its upper end said countershaft carries a bevel gear 20 in mesh with and adapted to impart rotation to a bevel gear 21 secured to the reel shaft.

22 is the reel shaft journaled horizontally in the head 18 of the reel arm and carrying near its journal end the bevel gear 21 aforesaid.

23 is a circular rim arranged at one side of the hollow head 18 and integral therewith; such rim is formed with a beveled periphery as shown, and adapted to form abutments for the holding screws hereinafter described.

24, are the film magazines of the ordinary cylindrical or drum form shown and having at one end a hinged door or lid 25, and at the other end a carrying spider 26 fixedly attached to the rigid head of each magazine as shown.

27 is a film outlet formed in the periphery of each film magazine and preferably of the fire trap construction shown in Figs. 3, 5 and 6.

28 are a series of circularly arranged lugs on the spider 26, and through which obliquely arranged clamping screws 29 pass and have abutment against the beveled periphery of the rim 23 aforesaid to attach the magazine in place in a substantial yet readily detachable manner.

30 are stop lugs or pins arranged in spaced relation on the beveled periphery of the rim 23, and adapted to permit of a limited turning adjustment of a magazine so that each film outlet 27 may be brought into proper adjustment with the kinetoscope mechanisms as indicated in full lines in Fig. 1, or into a position in direct alinement with each other, as indicated in dotted lines in Fig. 1, when it is desired to rewind the film from the lower or receiving magazine, back upon the reel of the upper or delivery magazine.

31 is the film reel of any ordinary construction, and secured in a removable manner on the reel shaft 22 by a clamping nut 32 as shown in Fig. 2.

Having thus fully described my said invention what I claim as new and desire to secure by Letters Patent, is:—

1. In a kinetoscope, the combination of a main frame, a film feeding mechanism, a film rewinding mechanism, a main shaft journaled in said frame, a pair of gears arranged in adjacent relation, one of said gears forming a part of the operating means of the film feeding mechanism and the other gear a part of the operating means of the film rewinding mechanism, means adapted to engage the main shaft with one or the other of said gears, a film reel, and operative connections between said reel and one of the gears aforesaid, substantially as set forth.

2. In a kinetoscope, the combination of a main frame, a film feeding mechanism, a film rewinding mechanism, a main shaft journaled in said frame, a pair of gears arranged loosely on said shaft, one of said gears forming a part of the operating means of the film feeding mechanism, and the other gear a part of the operating means of the film rewinding mechanism, means carried by said shaft and adapted to engage one or the other of said gears, a film reel, and operative connections between said reel and one of the gears aforesaid, substantially as set forth.

3. In a kinetoscope, the combination of a main frame, a film feeding mechanism, a film rewinding mechanism, a main shaft journaled in said frame and capable of limited endwise adjustment in the same, a pair of gears arranged loosely on said shaft, one of said gears forming a part of the operating means of the film feeding mechanism and the other gear a part of the operating means of the film rewinding mechanism, means carried by said shaft and adapted to engage one or the other of said gears by endwise adjustment of said shaft, a film reel, and operative connections between said reel and one of the gears aforesaid, substantially as set forth.

4. In a kinetoscope, the combination of a main frame, a film feeding mechanism, a film rewinding mechanism, a main shaft journaled in said frame and capable of limited endwise adjustment in the same, means for locking

said shaft at its adjusted positions, a pair of gears arranged loosely on said shaft, one of said gears forming a part of the operating means of the film feed and shutter mechanisms and the other gear a part of the operating means of the film rewinding mechanism, means carried by said shaft and adapted to engage one or the other of said gears by endwise adjustment of said shaft, a film reel, and operative connections between said reel and one of the gears aforesaid, substantially as set forth.

5. In a kinetoscope, the combination of a main frame, a film feeding mechanism, a film rewinding mechanism, a main shaft journaled in said frame and capable of limited endwise adjustment in the same, a pair of gears arranged loosely on said shaft, one of said gears forming a part of the operating means of the film feeding mechanism, and the other gear a part of the operating means of the film rewinding mechanism, said gears having adjoining hubs formed with recesses in their ends, a transverse pin carried by said shaft and adapted to engage the recesses in one or the other of said hubs by the endwise adjustment of the shaft, a film reel, and operative connections between said film reel and one of the gears aforesaid, substantially as set forth.

6. In a kinetoscope, the combination of a main frame, a film feeding mechanism, a film rewinding mechanism, a main shaft journaled in said frame and capable of limited endwise adjustment in the same, means for locking said shaft at its adjusted positions, a pair of gears arranged loosely on said shaft, one of said gears forming a part of the operating means of the film feeding mechanism and the other gear a part of the operating means of the film rewinding mechanism, said gears having adjoining hubs formed with recesses in their ends, a transverse pin carried by said shaft and adapted to engage the recesses in one or the other of said hubs by the endwise adjustment of the shaft, a film reel and operating connections between said film reel and one of the gears aforesaid, substantially as set forth.

7. In a kinetoscope, the combination of a main frame, a film feeding mechanism, a film rewinding mechanism, a main shaft journaled in said frame and capable of limited endwise adjustment in the same, a pair of gears arranged loosely on said shaft, one of said gears forming a part of the operating means of the film feeding mechanism, and the other gear a part of the operating means of the film rewinding mechanism, means carried by said shaft and adapted to engage one or the other of said gears by endwise adjustment of said shaft, a reel arm attached to the main housing, a reel shaft journaled in said arm, and a countershaft arranged in said reel arm and operatively connected at

one end with the reel shaft and at the other end with one of the gears aforesaid, substantially as set forth.

8. In a kinetoscope, the combination of a main frame, a reel arm attached thereto and provided near its upper end with a circular rim, a film magazine having an attaching spider formed with a circular series of lugs, a series of screws passing through said lugs and having bearing against said rim, a reel shaft having a central position with relation to said rim, a reel carried by said shaft, and means for imparting rotation to said shaft, substantially as set forth.

9. In a kinetoscope, the combination of a main frame, a reel arm attached thereto and provided near its upper end with a circular rim having a beveled periphery, a film magazine having an attaching spider formed with a circular series of lugs, a series of screws passing obliquely through said lugs and having bearing against the beveled periphery of said rim, a reel shaft having an axial position with relation to said rim, a reel carried by said shaft, and means for imparting rotation to said shaft, substantially as set forth.

10. In a kinetoscope, the combination of a main frame, a reel arm attached thereto and provided near its upper end with a circular rim and stop lugs arranged in spaced relation on said rim, a film magazine having an attaching spider formed with a circular series of lugs, a series of screws passing through said lugs and having bearing against said rim, a reel shaft having a central position with relation to said rim, a reel carried by said shaft, and means for imparting rotation to said shaft, substantially as set forth.

11. In a kinetoscope, the combination of a main frame, a reel arm attached thereto and provided near its upper end with a circular rim having a beveled periphery and stop lugs arranged in spaced relation on said periphery, a film magazine having an attaching spider formed with a circular series of lugs, a series of screws passing obliquely through said lugs and having bearing against the beveled periphery of said rim, a reel shaft having an axial position with relation to said rim, a reel carried by said shaft, and means for imparting rotation to said shaft, substantially as set forth.

12. In a kinetoscope, the combination of a main frame, a reel arm removably attached thereto, a film magazine attached to the upper end of said arm, a reel shaft journaled in said arm and projecting into the magazine, a reel carried on said shaft, a bevel gear attached to said shaft, a countershaft journaled in the reel arm and having at its upper end a bevel gear meshing with the gear of the reel shaft and at its lower end a noncircular portion, a shaft journaled in the main housing and having at its upper end a socket for

engagement with the noncircular lower end
of the countershaft and at its lower end with
a bevel gear, a main shaft journaled in the
main housing and having a bevel gear mesh-
5 ing with the bevel gear on the lower end of
the shaft aforesaid, substantially as set
forth.

Signed at Chicago, Illinois, this 27th day
of January 1908.

ALVAH C. ROEBUCK.

Witnesses:

E. J. WILLIAMS,
ROBERT BURNS.