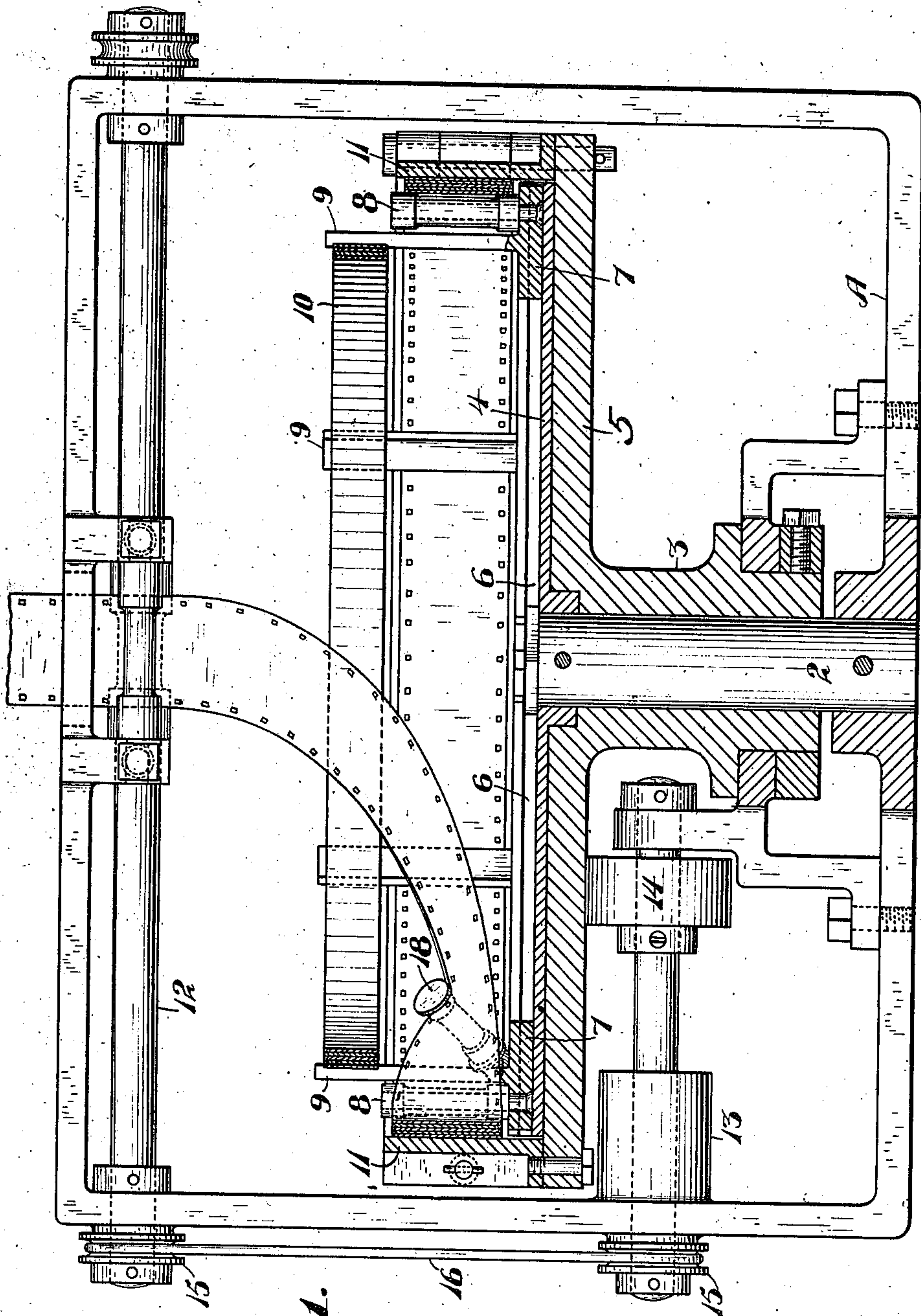


E. G. WENNERBLAD.
 REWINDING FILM REEL FOR PROJECTING MACHINES.
 APPLICATION FILED DEC. 27, 1917.

1,298,427.

Patented Mar. 25, 1919.
 2 SHEETS—SHEET 1.



WITNESS

H. C. Fiedner

Fig. 1.

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Einar G. Wennerblad

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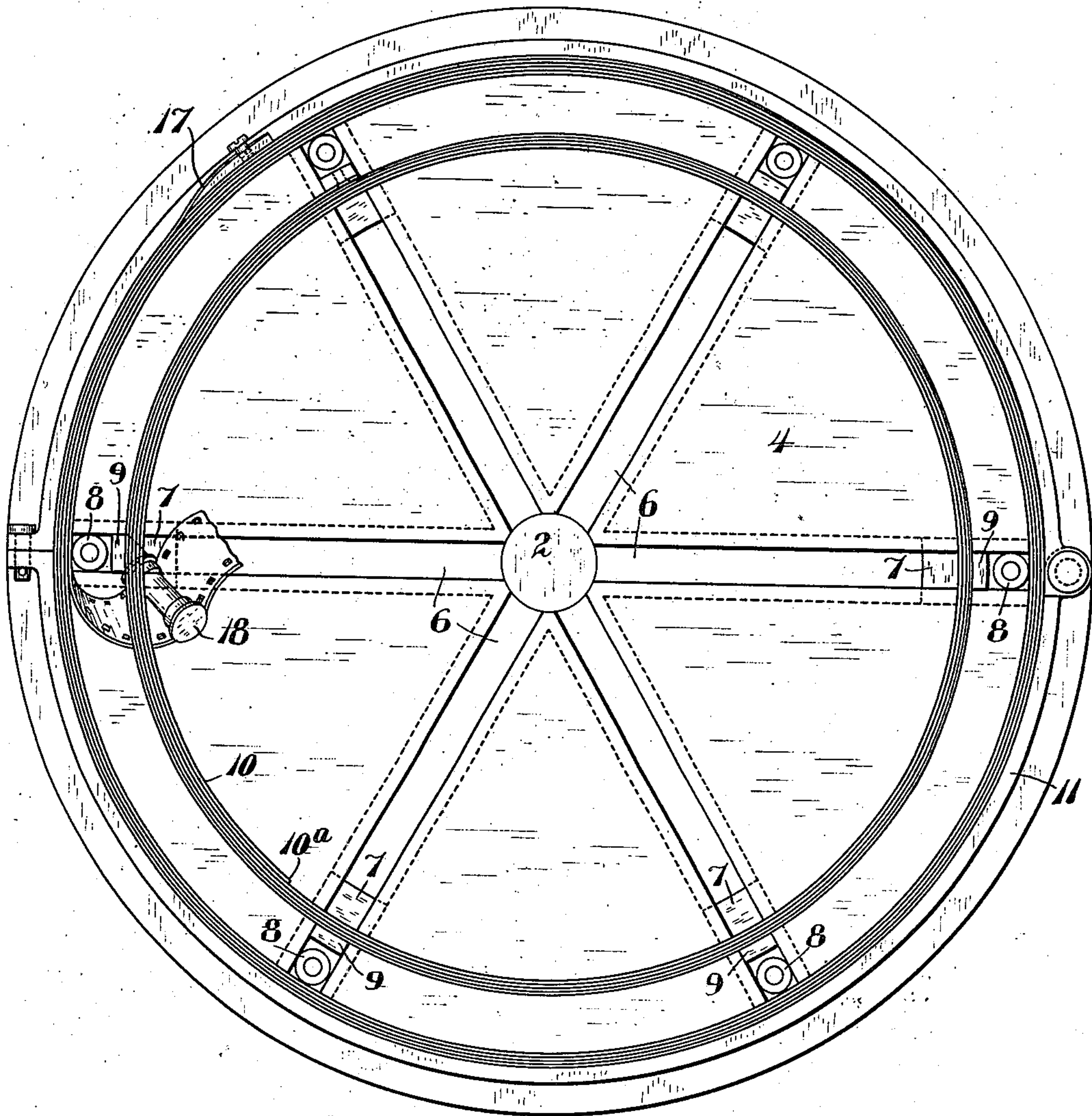
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Fig. 2.



WITNESS

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UNITED STATES PATENT OFFICE.

EINAR G. WENNERBLAD, OF EMERYVILLE, CALIFORNIA, ASSIGNOR OF ONE-HALF TO
PETER M. DIERS, OF BERKELEY, CALIFORNIA.

REWINDING FILM-REEL FOR PROJECTING-MACHINES.

1,298,427.

Specification of Letters Patent.

Patented Mar. 25, 1919.

Application filed December 27, 1917. Serial No. 209,143.

To all whom it may concern:

Be it known that I, EINAR G. WENNERBLAD, a citizen of the United States, residing at Emeryville, in the county of Alameda and State of California, have invented new and useful Improvements in Rewinding Film-Reels for Projecting-Machines, of which the following is a specification.

This invention relates to a rewinding reel for moving picture films; and the object of the invention is to provide a reel which will wind the film, after it has passed through the projector of a machine, in such a manner that there is no necessity of rewinding the film before it is ready for use the second time. This is of great importance as it not only saves the time and labor occupied in rewinding, but it materially reduces the wear and tear of the film. Further objects will hereinafter appear.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a plan view of the rewinding film reel with connected operating mechanism.

Fig. 2 is a side elevation of the film reel detached.

Referring to the drawings in detail, A indicates a suitable supporting member, in which is secured a stationary shaft 2. Turnably mounted on the shaft is a sleeve 3, and secured to the shaft is a disk 4, the inner face of which is radially slotted, as at 6. These slots are preferably dovetailed in cross section and each serves as a guide for a block 7, on which is journaled a roller 8. The blocks carrying the rollers are each provided with an outwardly projecting lug 9, and mounted interiorly of said lugs is a spiral spring 10 which is adapted to exert an outward pressure and thereby force the blocks and rollers against an exterior rim 11 secured on a disk 5 integral with the sleeve 3.

Journaled in the frame, as at 12, is a shaft which may be driven in unison with any suitable revolving part of the projecting machine, and journaled in a support, as at 13, is a second shaft on which is secured a friction driving pulley 14. This pulley engages the outer face of the disk 5 and thereby serves as a friction drive, as will hereinafter be described, power being transmitted from

the shaft 12 through the pulleys 15 and a belt 16.

In actual operation, it can readily be seen that if the shaft 12 is driven in unison with some revolving part of the projecting machine movement will be transmitted through the pulleys 15 and the friction pulley 14 to revolve the disk 5. The free end of the film shown at 17, if attached to the outer rim, as shown in Fig. 2, will, therefore, tend to wind itself inside of the annular flange 11, the diameter decreasing as one coil of film is wound inside of the other. The rollers 8 will, of course, always engage the innermost coil and will thereby exert a tension which will cause the film to be wound under a certain tension.

The film coming from the projector is guided with relation to one of the rollers 8 by means of an angularly positioned flange roller 18. This roller is also attached to the block 7 which carries the adjacent roller 8 and it, therefore, gradually recedes in an inward direction as the film is being rewound. The spiral spring 10 overlaps itself, as shown at 10^a, and gradually decreases in diameter, thus permitting the rollers and the sliding blocks upon which they are mounted to recede as each coil of film is being wound.

The friction drive produced by the provision of the pulley 14 permits a slippage which will cause the reel to revolve comparatively slowly when the winding operation is first started and gradually to increase its speed as the interior diameter of the wound film decreases. This is an essential feature as the constant decreasing interior diameter of the film coil as it is being rewound demands a constant increase in peripheral speed, this increase in speed being essential to remove the film as quickly as it is being discharged by the projector.

While a friction drive is here shown, I wish it understood that any other drive permitting a similar speed variation may be employed. The film rewinding mechanism here shown permits the film to be wound as it is being discharged by the projector and as the winding operation is the reverse to that generally employed, it can readily be seen that the film is in the right position for immediate use, thereby reducing the wear and tear to which a film is ordinarily subjected and at the same time saving valuable time which is otherwise lost. The mechanism

here shown is furthermore simple and substantial in construction and is adapted to be attached to practically any standard projecting machine now employed.

5 The film may be unwound directly from this reel by removing the rim section 11 or it may be removed from this reel and placed on an ordinary reel if desired. I also wish it understood that the materials and finish
10 of the several parts of the device may be such as the experience and judgment of the manufacturer may dictate and that various changes in form, proportions and minor details of construction may be resorted to with-
15 in the scope of the appended claims and that I do not wish to limit myself to the specific design and construction here shown.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

20 1. A rewinding film reel comprising a disk having a projecting peripheral rim formed thereon, means for attaching a film to the inner face of said rim, a support
25 within the rim, a plurality of radially movable rollers mounted on the support, means for guiding the film over one of said rollers so that it may be wound interiorly of the projecting rim, and means for revolving the
30 disk at a gradually increasing speed as the winding of the film progresses.

2. A rewinding film reel comprising a disk having a projecting peripheral rim formed thereon, means for attaching a film
35 to the inner face of said rim, a support within the rim, a plurality of radially disposed grooves formed in the face of the support, a block slidably mounted in each groove, a roller carried by each block, means
40 for exerting an outward pressure on each block, and means for guiding the film between said rollers and the rim to permit rewinding of the film in the manner described.

45 3. A rewinding film reel comprising a disk having a projecting peripheral rim formed thereon, means for attaching a film to the inner face of said rim, a support within the rim, a plurality of radially dis-
50 posed grooves formed in the face of the support, a block slidably mounted in each groove, a roller carried by each block, a collapsible coil spring mounted interiorly of the blocks engaging the blocks and adapted
55 to exert an outward pressure on the same, and an angularly disposed roller carried by one of the blocks adapted to direct and guide the film between the rollers and the rim to permit the film to be rewound as described.

60 4. A rewinding film reel comprising a disk having a projecting peripheral rim formed thereon, means for attaching a film to the inner face of said rim, a support
65 within the rim, a plurality of radially dis-

posed grooves formed in the face of the support, a block slidably mounted in each groove, a roller carried by each block, a collapsible coil spring mounted interiorly of the blocks engaging the blocks and adapted
70 to exert an outward pressure on the same, an angularly disposed roller carried by one of the blocks adapted to direct and guide the film between the rollers and the rim to permit the film to be rewound as described,
75 and means for driving the disk to constantly maintain the film taut as the winding progresses.

5. A rewinding film reel comprising a disk having a projecting peripheral rim
80 formed thereon, means for attaching a film to the inner face of said rim, a support within the rim, a plurality of radially disposed grooves formed in the face of the support, a block slidably mounted in each
85 groove, a roller carried by each block, a collapsible coil spring mounted interiorly of the blocks engaging the blocks and adapted to exert an outward pressure on the same, an angularly disposed roller carried by one
90 of the blocks adapted to direct and guide the film between the rollers and the rim to permit the film to be rewound as described, and a friction driving member adapted to revolve the disk, said friction drive per-
95 mitting a slippage so that the disk may revolve comparatively slowly when the film winding operation is started and to gradually increase in speed as the film winding operation progresses.

100 6. A rewinding film reel comprising a disk having a projecting peripheral rim formed thereon, means for attaching a film to the inner face of said rim, a support within the rim, a plurality of radially dis-
105 posed grooves formed in the face of the support, a block slidably mounted in each groove, a roller carried by each block, means for exerting an outward pressure on each block, means for guiding the film between
110 said rollers and the rim to permit rewinding of the film in the manner described, and a friction driving member adapted to revolve the disk, said friction drive permitting a slippage so that the disk may revolve
115 comparatively slow when the film winding operation is started and to gradually increase in speed as the film winding operation progresses.

7. A rewinding film reel comprising a
120 rotatable member having a projecting peripheral rim formed thereon, means for attaching a film to the inner face of said rim, a stationary support within the rim, a plurality of radially disposed grooves
125 formed in the support, a block slidably mounted in each groove, a roller carried by each block, outwardly projecting lugs carried by the blocks, and a coiled spring supported by and mounted interiorly of the
130

lugs for exerting an outward pressure on the rollers.

8. A rewinding film reel comprising a rotatable member having a projecting peripheral rim formed thereon, means for attaching a film to the inner face of said rim, a stationary support within the rim, a plurality of radially disposed grooves formed in the support, a block slidably mounted in each groove, a roller carried by each block, means for feeding a film sub-

stantially axially of the disk, and means carried by one of the blocks for guiding the film from the feeding means to the adjacent roller.

15

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EINAR G. WENNERBLAD.

Witnesses:

JOHN H. HERRING,
W. W. HEALEY.