

June 9, 1925.

1,541,005

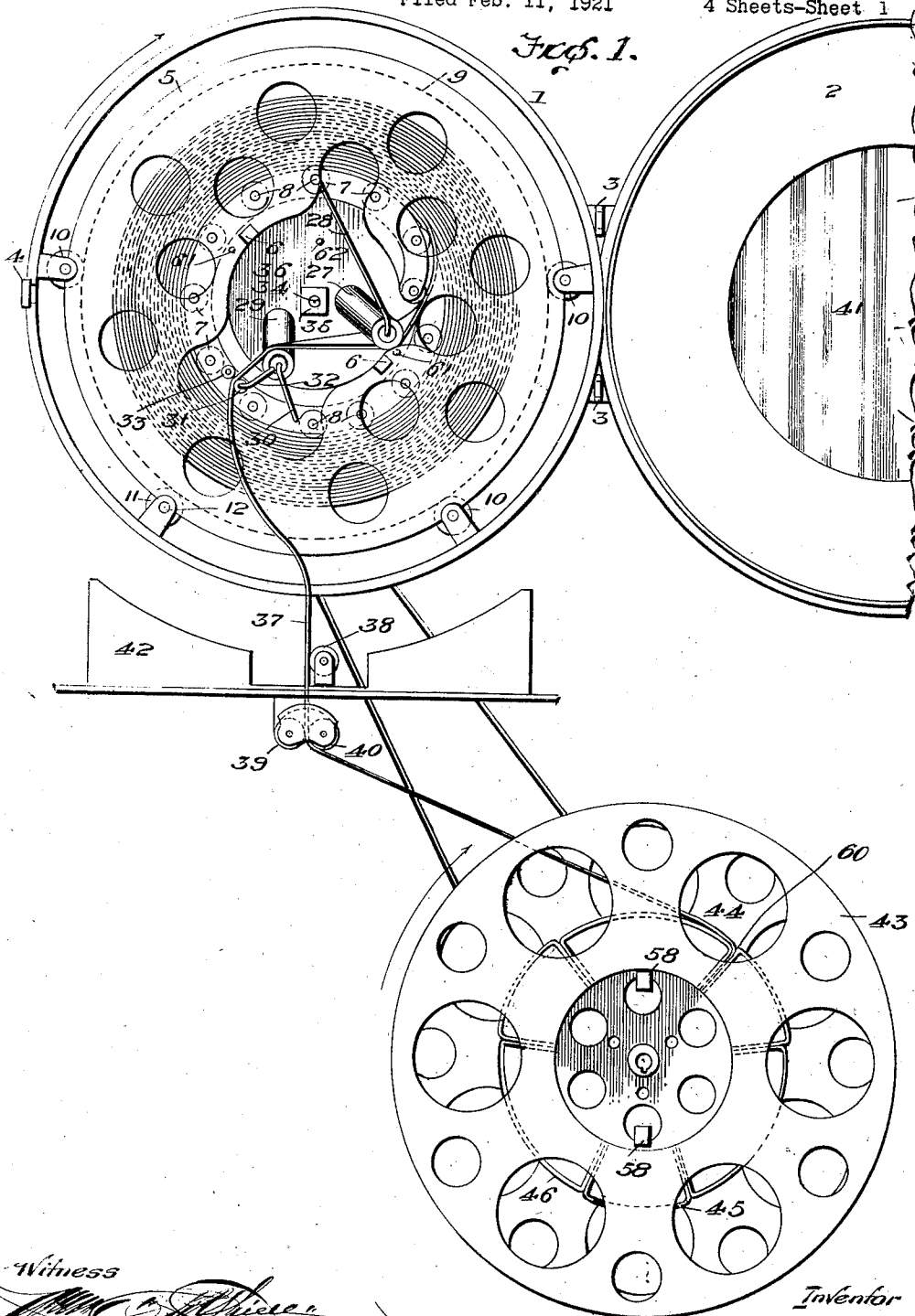
J. K. E. TERVAS

REEL FOR PICTURE MACHINES

Filed Feb. 11, 1921

4 Sheets-Sheet 1

Fig. 1.



Witness

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Fig. 2.

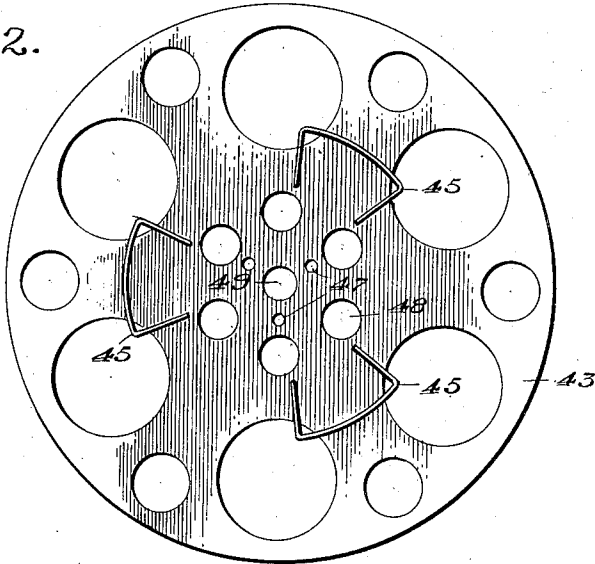
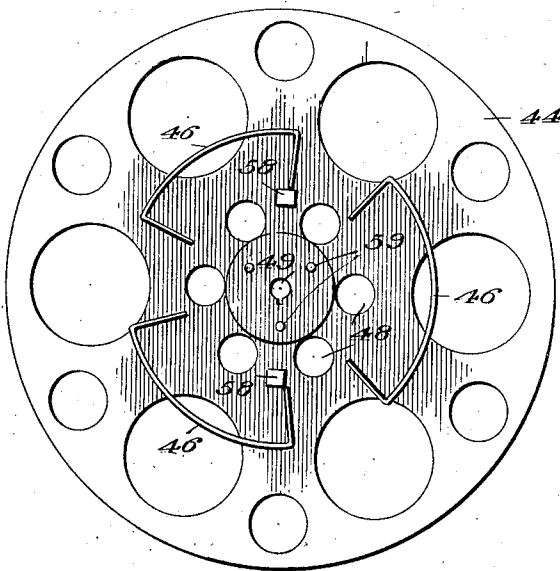


Fig. 3.



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Fig. 4.

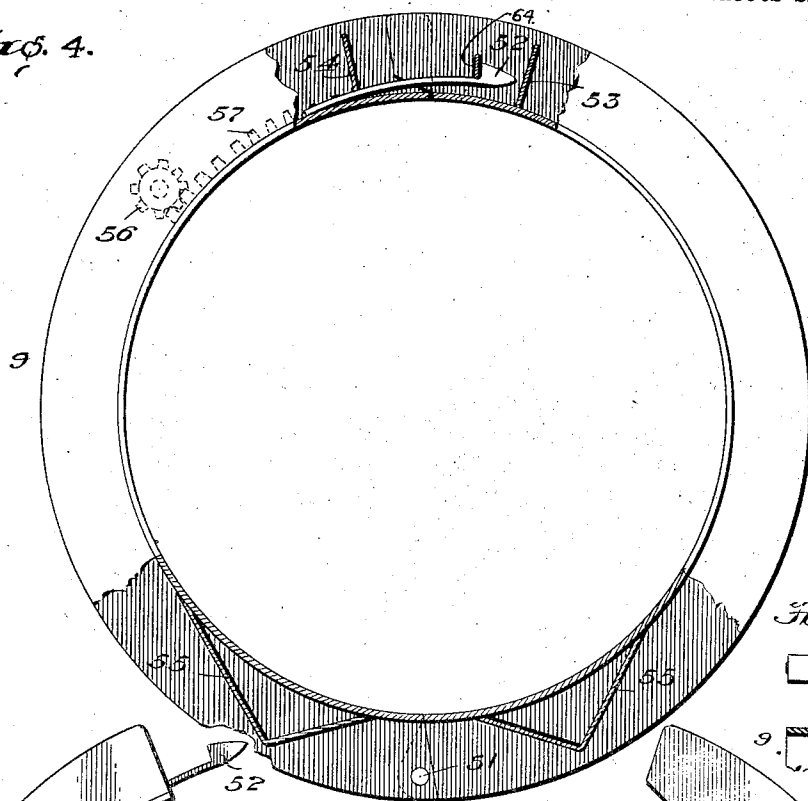


Fig. 8.

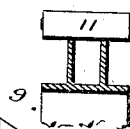
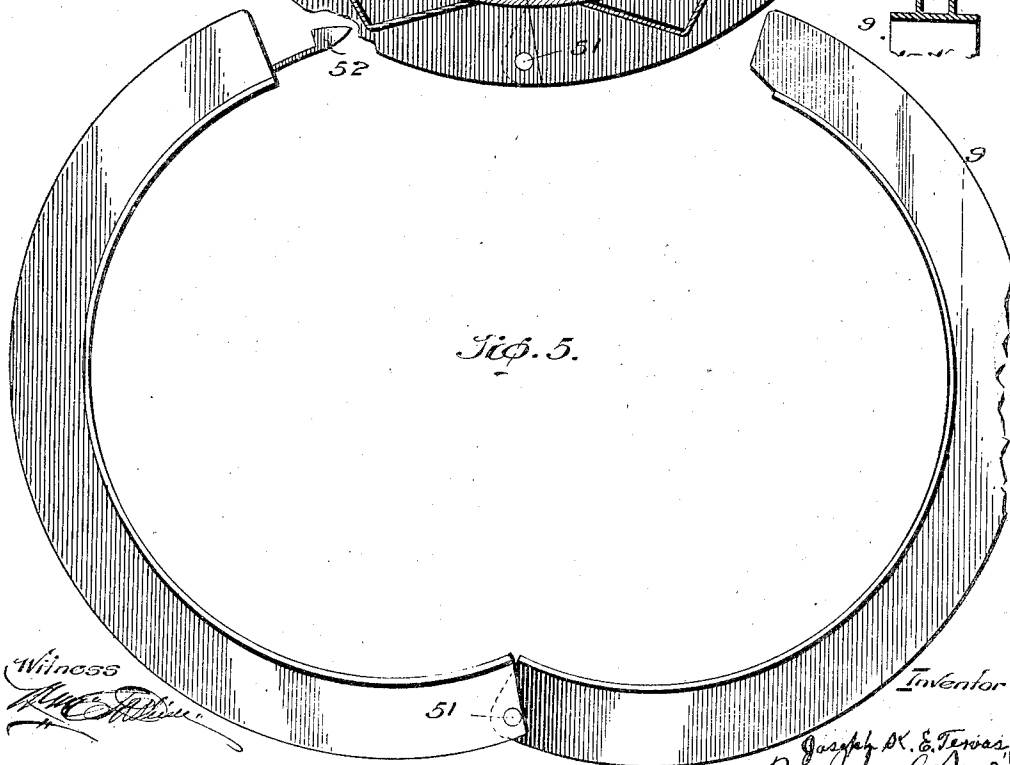


Fig. 5.



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4 Sheets-Sheet 4

Fig. 6.

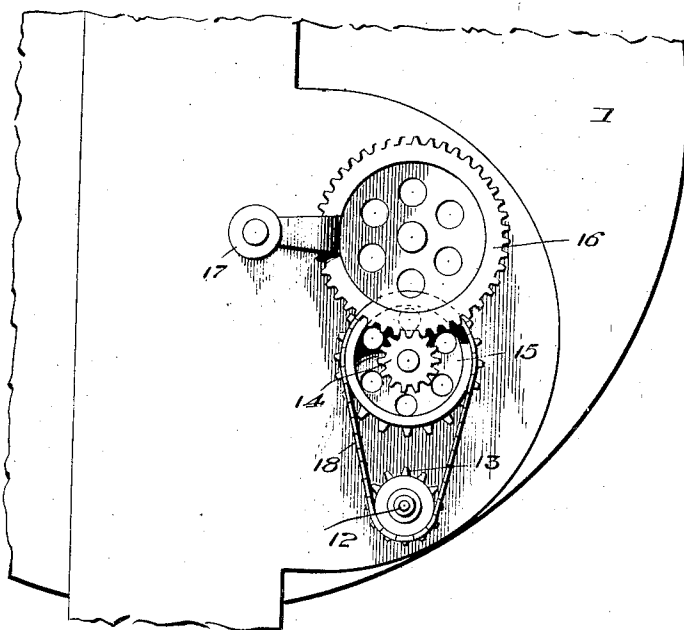
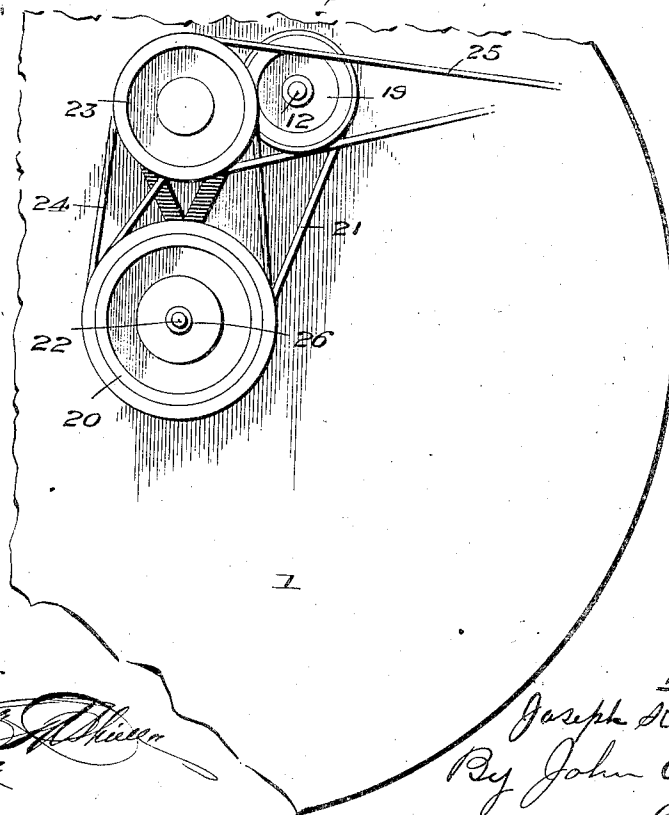


Fig. 7.



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UNITED STATES PATENT OFFICE.

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REEL FOR PICTURE MACHINES.

Application filed February 11, 1921. Serial No. 444,182.

To all whom it may concern:

Be it known that I, JOSEPH K. E. TERVAS, a citizen of Finland, residing at Hancock, in the county of Houghton and State of Michigan, have invented certain new and useful Improvements in Reels for Picture Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to moving picture machines; and more particularly to the reels thereof, the same comprising a plurality of reels for the purpose of holding and feeding the film. It consists of an upper or holding reel, and a lower or receiving reel into which the film is fed, and after it has completely run out from the upper reel it is taken out of the lower reel and may be replaced in the upper reel ready for use.

The object of my device is to so construct the same that it will be simple, durable, may be easily constructed and manufactured, and the parts of the same may be replaced when it becomes necessary.

In the drawings forming a part of this specification, and in which like symbols of reference represent corresponding parts in the several views:—

Figure 1 is a side elevation of a picture machine containing my invention, the magazine carrying the upper reel being shown open;

Figure 2 is an inner view of one of the plates of the lower reel;

Figure 3 is a view of the other portion of the lower reel, from the interior of the same;

Figure 4 is a view of the belt ring closed;

Figure 5 is a view of the belt ring, showing the same open;

Figure 6 is a rear view of the magazine, showing means for operating the film by hand;

Figure 7 is a rear view of the magazine showing means for connecting a motor to the same; and

Figure 8 is a sectional detail of parts shown in Fig. 1.

In the drawings the numeral 1 represents the magazine carrying the upper reel; 2 the cover of the same, 3 the hinges of the cover; and 4 a catch to hold the cover. 5 is the front plate of the upper reel, the rear of the magazine serving for the rear plate of the same; and 6 are springs for holding

the front plate to the magazine, said springs being connected to the rear plate of the magazine. The plate 5 is thus detachable from the magazine.

7 are rollers connected to the main casing by journals 8, the object of the same being to permit the film to move freely within the magazine. 9 is a belt ring adapted to move in the casing on rollers 10, the same holding the film in proper position within the casing, and being capable of movement or operation through the friction roller 11 having a shaft 12 projecting through the rear of the casing. The shaft 12 carries a sprocket-wheel 13 which connects with pinion 14, carrying a sprocket-wheel 15, which in turn gears with a wheel 16. Wheel 16 is operated by a handle 17. 18 is a sprocket chain connecting wheel 13 with wheel 15, so that when it is desired to move the film it is only necessary to operate the handle and feed the film.

In Figure 7 I have shown a modification of the actuating means for the belt ring where a motor is desired. This shows a wheel 19 on shaft 12, the same being connected to the wheel 20 through a band 21. Wheel 20 is journaled on the shaft 22, which may be connected to the source of power. Wheel 20 is also connected to a wheel 23 by a band 24 connected to the shafts of the same. Wheel 23 has a band 25 which may be connected to the source of power, the object of the same being to get greater speed when the same is desired. Wheel 22 has a clutch 26 on its shaft by means of which it may be thrown into or out of operation. 27 is a roller journaled on 28, which also acts as a brace for the same. 29 is also a roller over which the film passes, the same journaled on 30 which also acts as a brace to hold the roller steady.

31 is a small roller journaled on 32 and 33 a similar roller between which two rollers the film is adapted to feed. 34 is a bolt and 35 a nut on the same, its purpose being to connect plate 36 with the back of the magazine, though said plate may be dispensed with, if desired. 37 is the film, which feeds also between guide rollers 38, 39 and 40. Roller 38, may, if desired, be dispensed with, though it helps to steady the film, and is desirable in some cases. Rollers 39 and 40 also serve the purpose of preventing the spread of fire into the upper

film, should any occur. 41 is a glass front for the cover of the magazine to enable an inspection of the same.

42 is a bench or support for the magazine, the same being shown in the drawing at a short distance from the magazine, merely to show it more clearly, though in operation the magazine rests on the support, and is fastened to the same.

My lower reel is composed of plates 43 and 44, the latter serving to connect the same to the support. These two plates have on their interior sectional portions 45 and 46 forming a hub, which enables them to be interlocked, and also to catch the end of the film between the edges of the same, and then to be wound on them. The film sections of the plate 43 are approximately one-quarter of an inch larger than the section 44, to loosen the film coil when the reel is opened. 58 are springs to hold the sections of the reel together, it being only necessary to press the same with the thumbs to release them. Plate 44 is formed with a bearing, as shown, to connect it to its support.

59 are pins upstanding from the section 44, and are adapted to engage perforations 47 in the section 43, the object of the same being to hold the sections in their proper relation to each other. 48 are holes in sections to enable the operator to place his fingers in the same in manipulating the device. They also act to receive springs 45 and interlock the parts. 49 indicates the bearing for the shaft to which it is to be applied or connected.

The belt ring 9 located in the upper reel is for the purpose of holding the film in its proper position in the same while it is being fed to the lower reel. It is hinged at 51, so that it may be opened, and has a catch 52, engaging a finger 64, by which it may be snapped into place over the roll of film. 53 is a finger on the ring, and 54 a similar finger upstanding on spring or catch 52. By clasping the same with the hand the spring is readily operated and the parts released. 55 are simply braces or reinforcements to hold the parts and make the ring stronger.

The belt ring, as before explained is operated by roller 11, upon which it rests, but it may also be operated through the medium of the sprocket-wheel 56 on the side, the same adapted to engage with teeth 57 on the rear of the belt ring. 60 is the end of the film, which is shown clamped or caught between the hub sections in the lower reel, as shown in Figure 1. 61 are pins rising from the metal ring 50 and passing through the face-plate 5, for the purpose of assisting in holding the parts. 62 is a pin on the magazine, the same passing through plate 36, as shown, to hold said plate to the magazine.

The operation of my device will be apparent from the foregoing description. The lower reel is that to which the motor is applied. The film revolves on the ring 9, which holds it in its proper position. When it is run out into the lower reel and it is desired to reuse it the ring is taken from the magazine, placed around the film in the lower reel, the thumb of the operator pressing on the end of the film to hold it together, both hands holding the ring and the film coil, when it may then be placed in the magazine.

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

1. In a device of the character described, a magazine for the upper reel, rollers journaled in the magazine, a belt-ring adapted to ride on the rollers, a friction wheel journaled in the casing to operate the belt-ring, and means for communicating motion to said friction wheel.

2. In a device of the character described, a magazine for the upper reel, a series of rollers connected to the magazine and adapted to receive and operate the film, a belt-ring having a hinge and flanged sides forming a circumferential groove, a finger on one of the flanges, a catch to engage the finger, means to rotate the belt-ring and film, and means to guide and deliver the film.

In testimony whereof I hereunto affix my signature.

JOSEPH K. E. TERVAS.