

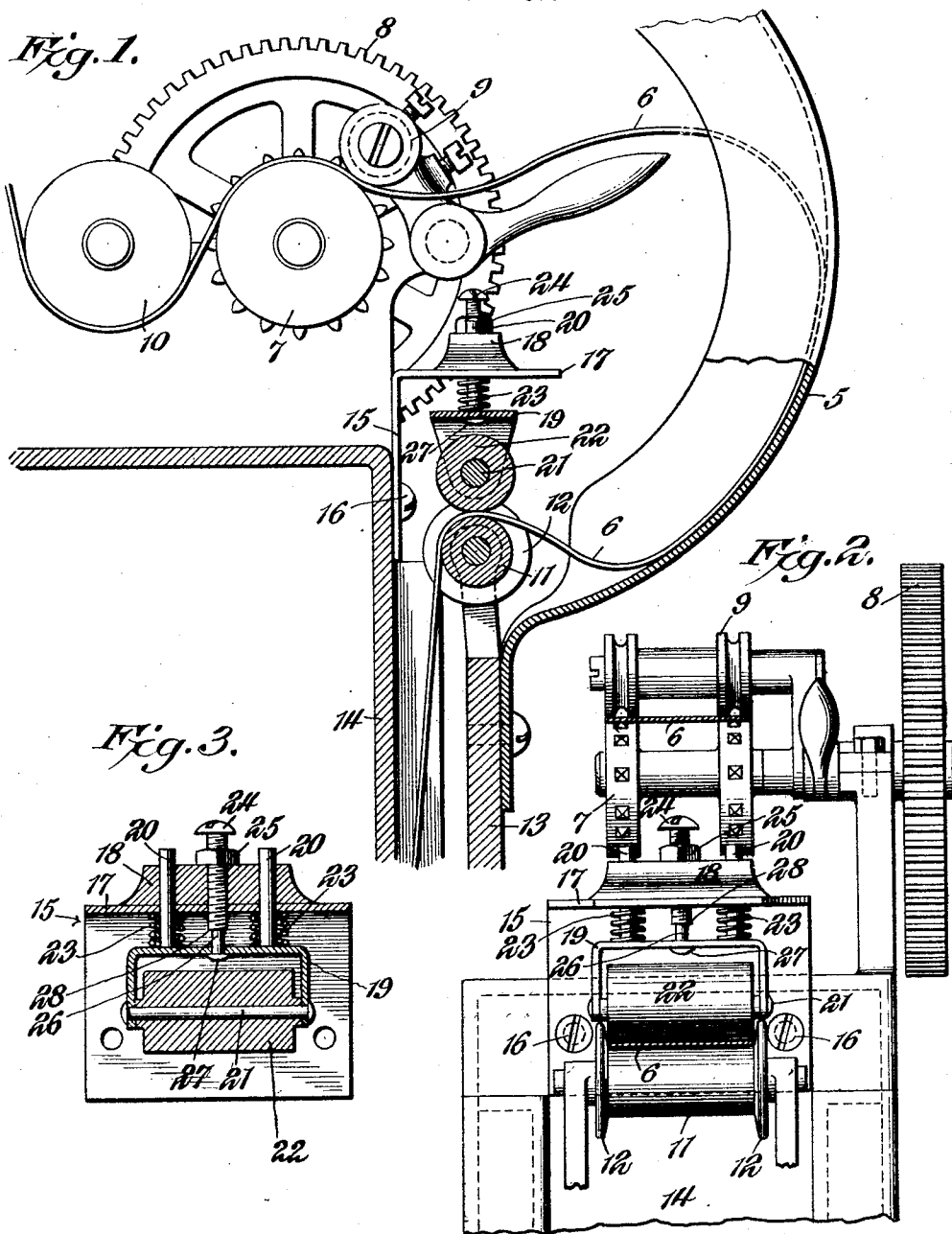
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D. McCULLOUGH

STEADYING DEVICE FOR MOTION PICTURE APPARATUS

Filed March 15, 1924



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WITNESSES

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UNITED STATES PATENT OFFICE.

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STEADYING DEVICE FOR MOTION-PICTURE APPARATUS.

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To all whom it may concern:

Be it known that I, DEMING McCULLOUGH, a citizen of the United States, residing at Marietta, in the county of Washington and State of Ohio, have invented a new and useful Steadying Device for Motion-Picture Apparatus, of which the following is a specification.

This invention relates to a steadying device for motion picture apparatus, and its object is to provide an attachment adapted to co-act with the roll or spool above the projector to hold the film back from the backing plate, so that it will not be scratched or torn, and so that it will be perfectly steady in front of the screen.

The specific construction of the invention and the manner in which it is attached to a motion picture apparatus of standard construction will be explained in connection with the accompanying drawing, which illustrates the invention in its preferred form.

In the drawing:

Figure 1 is a longitudinal sectional view illustrating a portion of the motion picture apparatus having my invention applied thereto.

Figure 2 is a front elevation of the same with the front part of the casing removed.

Figure 3 is a transverse sectional view of the invention detached.

Referring in detail to the drawing, there is shown a portion of the casing 5, within which the film loop 6 is formed by the action of a toothed feed wheel 7, which is driven by a gear wheel 8. The film is held in engagement with the toothed feed wheel 7 by means of a flanged roller 9 and a rear roller 10, underneath which the film passes as it is drawn from the feed roll. From the loop 6, the film passes over a spool or roll 11 between the end flanges 12 thereof, and downwardly between the door 13 and the backing plate 14. The parts thus far described are of standard construction, and are shown conventionally in order to illustrate the application of the invention thereto. The form and arrangement of these parts may, however, vary in different apparatus.

The steadying device, which constitutes the subject matter of the present invention, is preferably supported by a bracket 15, which may be secured to the upper end of the backing plate 14 by screws 16, or other suitable means. The bracket 15 has a forwardly projecting plate 17, which overhangs

the spool 11, and has a block 18 soldered or otherwise secured to its upper face. A yoke 19, located beneath the plate 17, has upstanding pins 20 secured to its upper face, and mounted for reciprocation in the block 18. A shaft 21 connects the arms of the yoke 19 and rotatably supports a roller 22, which is adapted to press the film against the surface of the spool 11 by reason of the action of expansile coiled springs 23, which surround the pins 20 between the plate 17 and yoke 19.

An adjusting screw 24, in threaded relation to the block 18, is located preferably between the pins 20, and held in adjusted position by a lock nut 25. The lower end of the screw 24 has a reduced smooth portion 26 of limited extent, which extends through the central part of the yoke 19, and slidably engages the same. The lower extremity of the screw 24 is upset to form a head 27, and the yoke has a limited reciprocatory movement between the head 27 and an annular shoulder 28 formed at the upper end of the reduced portion 26. The screw 24 is adjusted to permit the yoke 19 and roller 22 to have sufficient play to prevent excessive pressure or friction on the film, and yet the pressure of the springs 23 is sufficient to hold the film back and to prevent any slack below the spool 11, and thus holds the film perfectly steady in front of the screen, as well as preventing the same from being scratched or torn. The head 27 prevents the device from being displaced while the film is being threaded.

While I have shown and described the structural details of one embodiment of the invention and one type of motion picture apparatus in which it may be embodied, it will be understood that these are merely for the purpose of illustration, and that various modifications may be devised in the various parts of the device and in the manner in which it is used without departing from the spirit or scope of the invention as defined by the claims.

What is claimed is:

1. In a motion picture apparatus, the combination with a spool over which the film is fed, of a pressure roll cooperating therewith, a yoke in which said roll is rotatably supported, said yoke being mounted for reciprocatory movement toward and away from the spool, springs urging the yoke toward the spool, means for positively limiting the

range of movement of said yoke in either direction, and means for adjusting said limiting means toward and away from the spool.

2. In a motion picture apparatus, the combination with a spool over which the film is fed, of a bracket having a block secured thereto and overhanging said spool, a yoke having upstanding pins reciprocally mounted in said block, a pressure roll rotatably mounted in the yoke and adapted to press the film against the spool, springs urging said yoke and the roll carried thereby toward the spool, means for positively limiting the range of movement of said yoke in each direction, and means for adjusting said limiting means toward and away from the spool.

3. In a motion picture apparatus, the combination with a spool over which the film is fed, of a pressure roll cooperating therewith, a yoke in which the pressure roll is rotatably supported, a bracket in which the yoke is mounted for reciprocation, and a screw in threaded relation to the bracket and having a portion of reduced diameter extending through the yoke with abutments at each end of the reduced portion to limit the reciprocatory movement of the yoke in each direction, said screw being adjustable longitudinally to shift the range of movement of the yoke.

4. In a motion picture apparatus, the combination with a spool over which the film is fed, of a bracket having a block secured thereto and overhanging said spool, a yoke

having pins secured thereto and reciprocable in said block, a pressure roll rotatably mounted in the yoke and adapted to press the film against the spool, springs urging said yoke toward the spool, and a screw in threaded relation to the bracket and having a portion of its length reduced in diameter and extending through the yoke with abutments at each end of the reduced portion engageable by said yoke to limit the reciprocatory movement of the latter in each direction, said screw being adjustable longitudinally to shift the range of movement of the yoke.

5. In a motion picture apparatus, the combination of a roll adapted to be held in contact with the film, a supporting member in which the roll is rotatably supported, a bracket in which the supporting member is mounted for reciprocation toward or away from the path of the film, and a screw in threaded relation to the bracket and having a portion of reduced diameter extending through the supporting member with abutments at each end of the reduced portion to limit the reciprocatory movement of the supporting member in each direction, said screw being adjustable longitudinally to shift the range of movement of the supporting member.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

DEMING McCULLOUGH.