

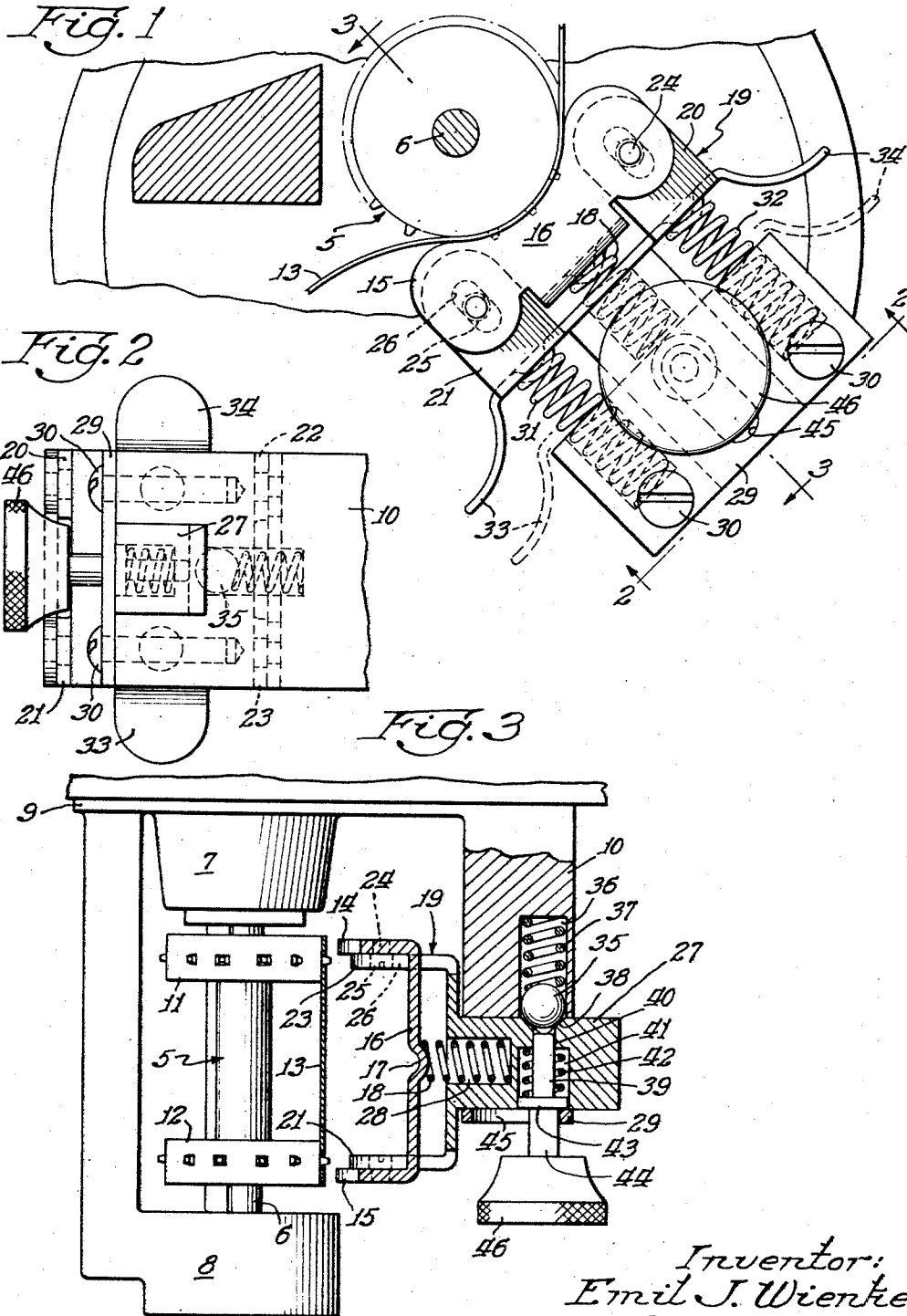
April 17, 1951

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2,549,271

TENSION SHOE MEMBER FOR FILM SPROCKETS

Filed Feb. 15, 1946



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UNITED STATES PATENT OFFICE

2,549,271

TENSION SHOE MEMBER FOR FILM SPROCKETS

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Application February 15, 1946, Serial No. 647,940

1 Claim. (Cl. 271—2.3)

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The present invention relates to the film tension shoe which serves as the tension means engaging the film where it goes around the intermittent sprocket of a motion picture projector. This shoe has to be retracted to thread film onto the sprocket and it must press the film evenly and lightly against the sprocket during the travel of film through the projector. It is the principal purpose of my invention to provide an improved tension shoe construction whereby the shoe can be readily retracted and quickly released to return to tension position.

It is also a purpose of the invention to provide a tension shoe construction whereby the pressure of the shoe on the film is balanced at all times.

The nature and advantages of my invention will appear more fully from the following description and the accompanying drawings. It should be understood, however, that the drawings and description are illustrative only, and should not be considered as limiting the invention except insofar as it is limited by the claim.

In the drawings:

Figure 1 is a fragmentary sectional view through a projector intermittent sprocket showing my invention as applied thereto.

Figure 2 is a fragmentary view looking at Figure 1 from the line 2—2, and

Figure 3 is a sectional view on the line 3—3 of Figure 1.

Referring now to the drawings, the intermittent sprocket 5 of the projector is driven by the shaft 6 in any suitable manner. The sprocket is mounted by two bearings 7 and 8 at its opposite ends, these bearings forming part of an intermittent sprocket support 9 which also has a post 10 that is substantially rectangular in cross section and extends out past the center line of the sprocket 5. The sprocket 5 has two toothed sections 11 and 12 which guide the film 13, and advances it by engaging the teeth through the apertures provided at the side edges of the film. In order to hold the film tight against the sprocket, I provide two spaced apart film engaging shoes 14 and 15, the faces of which are arcuate about the axis of the shaft 6 as a center when the shoes are engaged with the film on sections 11 and 12. The shoes are formed on the legs of a U-shaped member 16, the central portion of which has a boss 17 that is engaged by a spring 18.

The support 19 for the member 16 has four legs, 20, 21, 22 and 23. The legs of the U-shaped member 16 have pins 24 fastened therein, and

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these pins have heads 25 that ride in slots 26 that are formed in the legs 20, 21, 22 and 23. The member 19 has a central stem portion 27 that is provided with a recess 28 to receive the spring 18. The spring 18 is under compression so that it tends to force the member 16 toward the intermittent sprocket to the full extent of its movement with respect to the member 19. This movement is of course governed by the length of the slots 26 provided in the legs 20, 21, 22 and 23. The tension of the shoes 14 and 15 on the film is governed by the spring 18 which may have any suitable tension for the purpose.

The entire member 19 with the shoe 16 is movably mounted on the lug 10. This mounting is provided by the stem 27 which is set in a recess of the lug 10. The stem is held in place by a plate 29 that is fastened to the lug 10 by two screws 30. Two springs 31 and 32 are set into recesses in the lug 10 on opposite sides of the stem 27 so as to urge the assembly toward the intermittent sprocket. Finger pieces 33 and 34 are provided on the member 19 for the operator to grasp to pull the tension shoe and member 19 away from the intermittent sprocket.

The member 19 and the associated tension shoes are locked in retracted position by a releasable mechanism which comprises a ball detent 35 seated in a recess 36 on the lug 10, and backed up by a spring 37. This ball 35 is adapted to seat in a V-shaped recess 38 provided in the stem 27 when the stem is retracted to the position shown in Figure 3. Release pin 39 is mounted in the stem 27, the tip being guided in an aperture 40. This aperture is enlarged to form a spring pocket 41 for a spring 42 that normally holds the pin 39 retracted. A collar 43 on the pin 39 abuts the plate 29 to limit the retractive movement of the pin 39. An operating stem 44 projects through a slot 45 in the plate 29 from the collar 43 and has a head 46 thereon.

The operation of the device is as follows:

Assuming that it is desired to thread a film around the intermittent sprocket 5, the operator engages the finger pieces 33 and 34 and withdraws the member 19 and the tension shoes 14 and 15 from the position shown in Figure 1 to the position shown in Figure 3. In this position the ball 35 snaps into the V-slot 38 locking the parts in retracted position. The film is then threaded over the intermittent sprocket as desired. After that the operator merely strikes the head 46 to push it in enough to release the ball 35 from the slot 38, and the springs 31 and 32 cause the mem-

ber 19 and the film tension shoes to advance to engage the shoes within the film. The pressure of the shoes 14 and 15 on the film is governed by the spring 18. The slot 45 forms a stop to limit the advance movement of the member 19.

It is believed to be clear from the foregoing description that I have provided a simple and convenient mechanism for controlling the film tension shoe that engages the film on the intermittent sprocket. The shoes themselves are floating in the sense that all of the spring pressure upon them is applied at the central point 17, so that the tension will be uniformly distributed between the two shoes and along the length of the shoes.

Having thus described my invention, I claim:

In a film tension device for film sprockets, a tension shoe member having means for engaging a film on the sprocket, a support for said member, means mounting the member on the support for limited movement toward and away from the sprocket, spring means mounted between the support and the member urging the member toward

the sprocket, a mounting means for the support mounting it for limited movement toward and away from the sprocket, and spring means between the mounting means and the support urging the support toward the sprocket.

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