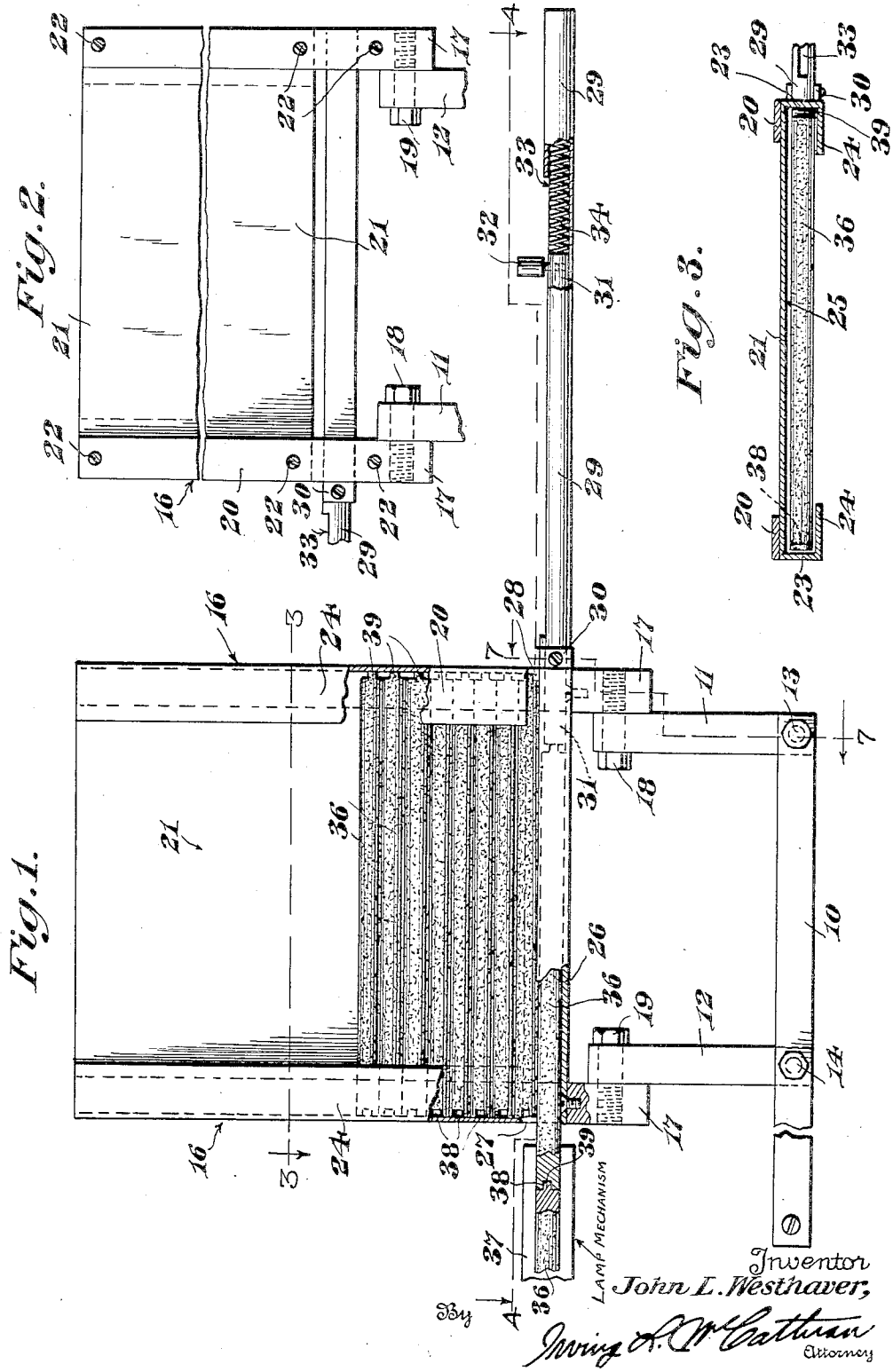
Feb. 25, 1936. J. L. WESTHAVER 2,032,240

CARBON RESERVOIR AND FEEDING MECHANISM THEREFOR

Filed March 24, 1934 2 Sheets-Sheet 1



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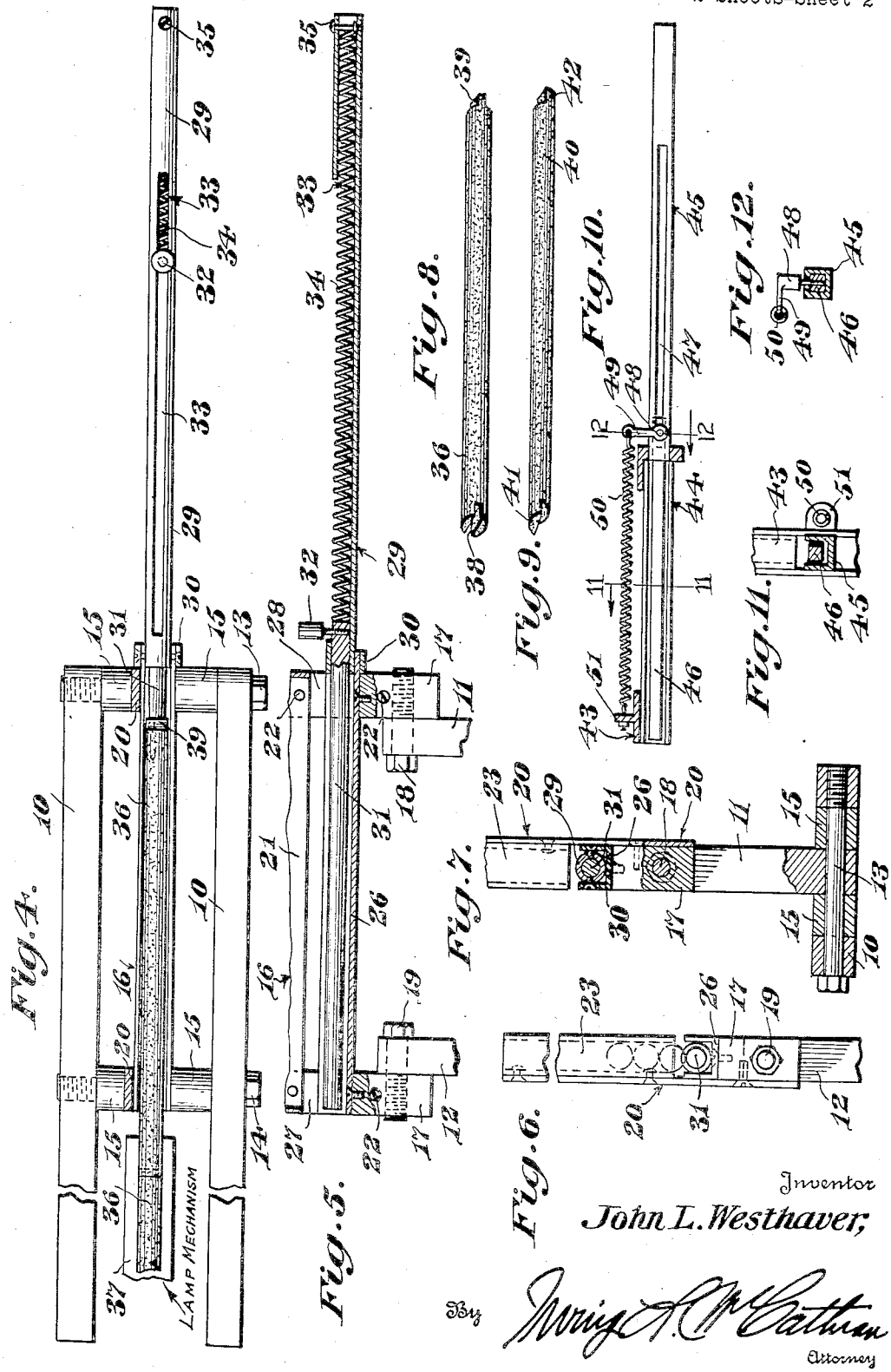

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 10.

Fig. 11.

Fig. 12.

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CARBON RESERVOIR AND FEEDING MECHANISM THEREFOR

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1 Claim. (Cl. 176—63)

This invention relates to a carbon reservoir and a feeding mechanism therefor, designed particularly for the purpose of saving carbon used in motion picture arc lamps.

One of the principal objects of this invention is the production of a simple and efficient reservoir or magazine, which is adapted to support a plurality of carbon sticks, one above the other, and is provided with means for facilitating the feeding of the carbon sticks into the lamp mechanism of a moving picture machine.

A further object of this invention is the production of a simple and efficient supporting and feeding means for the carbon sticks, whereby the carbon sticks may be efficiently and properly fed into the lamp mechanism of a motion picture machine.

Other objects and advantages of the present invention will appear throughout the following specification and claim.

In the drawings:—

Figure 1 is a side elevation of the carbon reservoir and feeding mechanism, certain parts thereof being shown in section;

Figure 2 is a fragmentary rear elevation of the carbon stick supporting reservoir;

Figure 3 is a section taken on line 3—3 of Figure 1;

Figure 4 is a longitudinal section taken on line 4—4 of Figure 1;

Figure 5 is a vertical longitudinal section through the carbon stick feeding mechanism;

Figure 6 is an end elevation of the reservoir and feeding mechanism;

Figure 7 is a vertical section taken on line 7—7 of Figure 1;

Figure 8 is a perspective view of one of the carbon sticks showing the manner in which the ends thereof may be grooved for the purpose of permitting the sticks to interlock end to end;

Figure 9 is a perspective view of a modified form of one of the carbon sticks;

Figure 10 is a horizontal section through the carbon stick reservoir showing a modified form of actuating means for the feeding plunger;

Figure 11 is a section taken on line 11—11 of Figure 10;

Figure 12 is a section taken on line 12—12 of Figure 10.

By referring to the drawings, it will be seen that 10 designates the clamp which is adapted to be fastened to a lamp supporting mechanism, the clamp being of any suitable or desired type, but preferably consisting of a pair of longitudinally extending or parallel members which may be clamped at their inner ends to the lamp mechanism in any suitable or desired manner. The clamp 10 supports two vertically extending legs 11 and 12, shown clearly in Figures 1 and 4, which legs 11 and 12 may be pivotally secured through the medium of the securing bolts 13 and 14, respectively. Suitable spacing bushings 15 may be employed upon the bolts 13 and 14, as shown in Figure 7 to hold the legs 11 and 12 in proper position.

The upper ends of the legs 11 and 12 support the vertically extending reservoir or magazine 16, the legs 11 and 12 being secured to the base portion 17 of the reservoir or magazine 16 through the medium of the connecting bolts 18 and 19. The bolts 13, 14, 18 and 19, may be adjusted in order to properly adjust the legs 11 and 12 with respect to the clamp 10, and also the reservoir 16 with respect to the legs 11 and 12. The connection of the bolts 18 and 19 and the adjustment permitted thereby will permit the operator to swing the reservoir 16 to obtain proper alignment with the lamp mechanism. This structure will also permit the reservoir 16 to be tilted if desired for dumping out the carbon sticks through the open upper end of the reservoir 16.

The base portion 17 of the reservoir 16 terminates in vertically extending straps 20 which are secured in any suitable or desired manner, to the reservoir body 21, as for instance by means of the screws 22. The reservoir body 21 comprises preferably a flat plate having side flanges 23 which flanges 23 terminate in inturned track rails 24, which track rails 24 are spaced in parallel relation to the inner face 25 of the body 21 of the reservoir. This structure will provide an open side for the reservoir and permit access to the carbon sticks and facilitate the stacking of the sticks, as shown in Figure 1. As shown in Figures 1, 5, and 6, the side flanges 23 of the reservoir body 21 terminate short of the bottom 26 of the reservoir, to provide openings 27 and 28 at the respective ends near the bottom of the reservoir.

To one side of the reservoir 16 is supported a plunger tube 29, the tube 29 being securely held in place by means of a suitable clamp 30. This plunger tube 29 carries a sliding plunger 31, the plunger 31 carrying an upstanding pin 32 which travels in the longitudinally extending slot 33 formed in the upper face of the tube 29. An expansible coil spring 34 is mounted within the tube 29, as shown in Figures 4 and 5, and is adapted to urge the plunger 31 forwardly through the bottom of the reservoir 16

to the position shown in Figure 5. The upstanding pin 32 will constitute a button for facilitating the manual operation or longitudinal movement of the plunger 31 and will also constitute a guide for limiting the longitudinal movement of the plunger 31. A pin 35 may be carried by the outer end of the tube 29 upon which one end of the spring 34 may be anchored, if desired. It should be understood that the bottom 26 constitutes a substantially U-shaped channel through which the plunger 31 is adapted to move longitudinally for the purpose of ejecting or feeding the carbon sticks 36, as shown in Figure 1.

As shown in Figure 1, the reservoir or magazine 16 is preferably formed of sheet metal and the track rails 24, by being inturned, will provide channels along the vertical longitudinal edges of the magazine or reservoir, thereby permitting the carbon sticks 36 to be arranged one above the other, and lie longitudinally of the width of the reservoir or magazine 16, as shown in Figure 1. Consequently, as one carbon stick 36 is forced into the lamp mechanism indicated in diagram in Figures 1 and 2, and designated by the numeral 37, the carbon stick next above will automatically drop into the substantially U-shaped channel or bottom 26 and be ready for movement into the lamp mechanism 37.

The carbon sticks 36 are preferably of an elongated tubular nature and are provided with slots 38 at one end, and tongues 39 at the opposite end, the tongue of one carbon stick being adapted to fit into the adjoining slot 38 of the next adjoining stick, as is shown in Figure 1 while the sticks are being fed into the lamp mechanism. In this way, the sticks will be properly held in position in order to lock the sticks together to provide the necessary turning motion to the carbon. No attempt is being made to illustrate the particular type of lamp mechanism in view of the fact that the present invention resides in the structure of the magazine and the carbon feeding mechanism illustrated and described in connection with the present invention.

In Figure 9, there is shown a modified form of the invention wherein a carbon stick 40 is illustrated having oppositely arranged tongues 41 and 42 formed at the respective ends thereof, the tongue on one end of one carbon being adapted to interfit with a similar tongue on an adjoining end of an adjoining carbon. In this way, the carbons may be interlocked longitudinally one to the other.

In Figures 10, 11 and 12, I have indicated a modified form of the invention wherein the reservoir is indicated by the numeral 43. The reservoir 43 is provided with a carbon receiving channel 44 at its bottom which communicates with a plunger supporting tube 45, the tube 45 projecting beyond one side edge of the reservoir or magazine 43, as shown in Figure 10. This plunger supporting tube 45 carries a plunger 46 which is movable longitudinally of the tube 45 and this tube 45 is provided with longitudinally extending slots 47.

In the modified form shown in Figures 10, 11 and 12 the tube 47 is square in cross-section and the plunger 46 is also shown square in cross-section. It should be understood that the plunger as well as the plunger tube may be of any shape desired without departing from the spirit of the invention. The plunger 46 carries at one end an upstanding pin 48 which is provided with an angularly extending arm 49 to which arm is secured a contractile coil spring 50, the coil spring being secured at its opposite end to the far side of the reservoir or magazine 43 through the medium of a projecting lug 51. This coil spring 50 will normally urge the plunger 46 through the bottom of the reservoir 43 for the purpose of feeding the carbon sticks from the reservoir or magazine.

From the foregoing description, it will be seen that a very simple and efficient means has been provided for facilitating the feeding of carbon sticks to a lamp mechanism of a moving picture machine and furthermore, that a magazine is provided whereby the sticks may automatically drop in succession into the bottom of the magazine where they may be engaged by means of a feeding plunger to feed or force the sticks into an adjoining lamp mechanism.

It should be understood that certain detail changes in the mechanical construction may be employed without departing from the spirit of the invention so long as these changes fall within the scope of the appended claim.

Having described the invention, what is claimed as new is:—

A means for feeding carbon to a lamp mechanism comprising a reservoir for supporting carbon sticks in stacked relation, said reservoir having a vertically extending trackway and a carbon receiving trough at the bottom thereof, supporting means for said reservoir for attaching the same to a lamp mechanism and holding the reservoir in proper ejecting position for feeding a carbon stick to the lamp mechanism, an ejecting plunger located in alignment with said trough and adapted to move longitudinally of the trough for feeding and ejecting a carbon stick from the bottom of the reservoir and longitudinally of said trough, carbon sticks mounted within the reservoir, each carbon stick having interlocking and interfitting means at the ends thereof whereby the carbon sticks may be locked for uniform rotation when placed end to end and while being fed into the lamp mechanism, legs supporting the reservoir, bolts pivotally connecting said legs to the bottom of said reservoir whereby said reservoir may be swung laterally and adjusted to move the reservoir into proper alignment with a lamp mechanism and also be swung to a dumping position.

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