Jan. 16, 1923. 1,442,647.

C. E. CARTER.

CINEMATOGRAPHIC MACHINE.

ORIGINAL FILED JULY 8, 1920. 6 SHEETS—SHEET 1

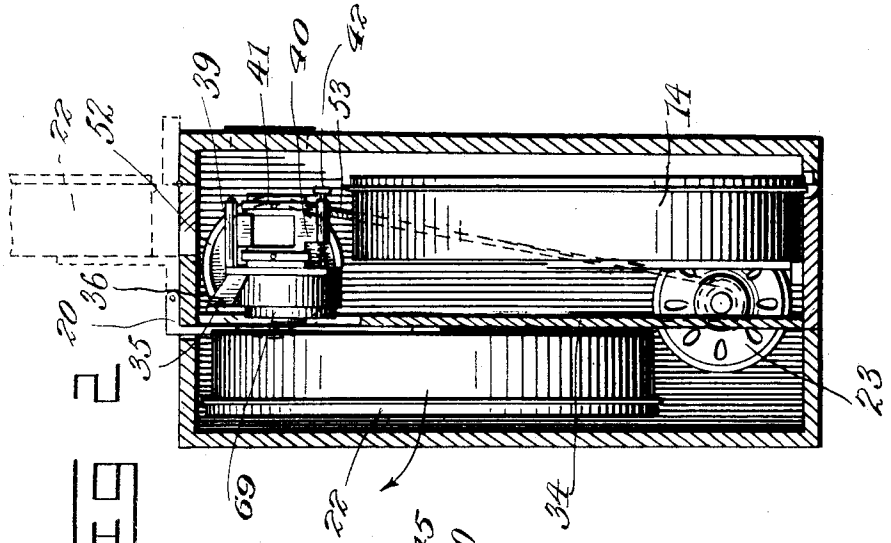


FIG. 2.

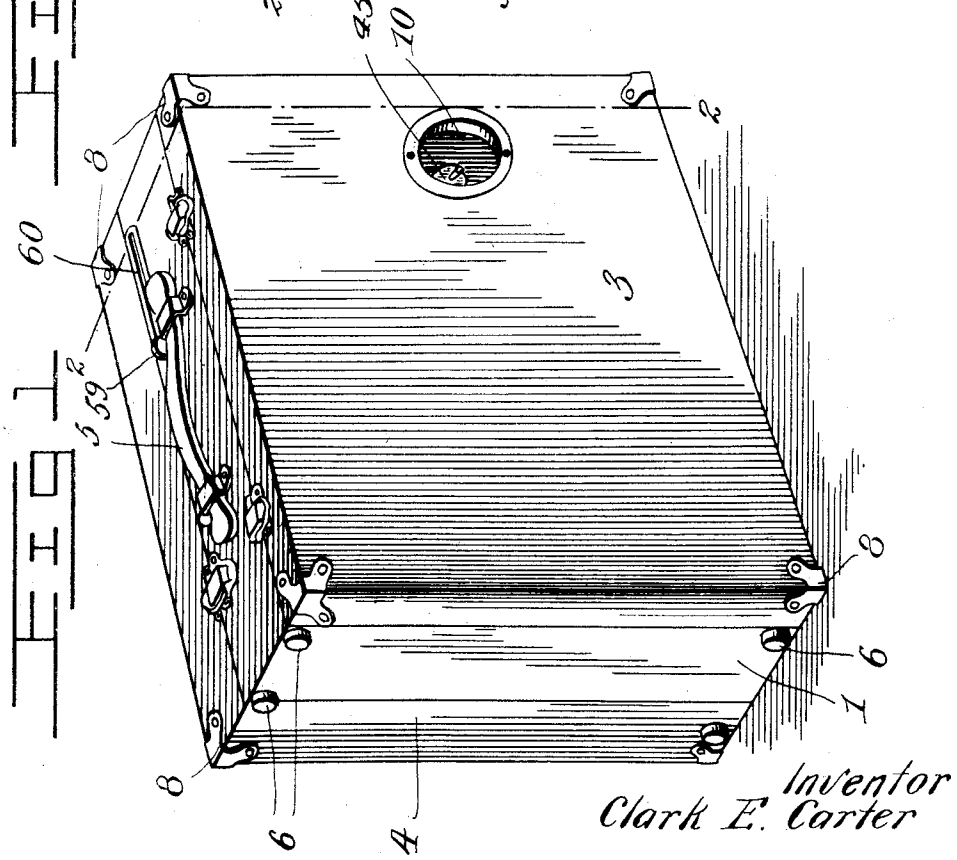


FIG. 1.

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6 SHEETS—SHEET 2

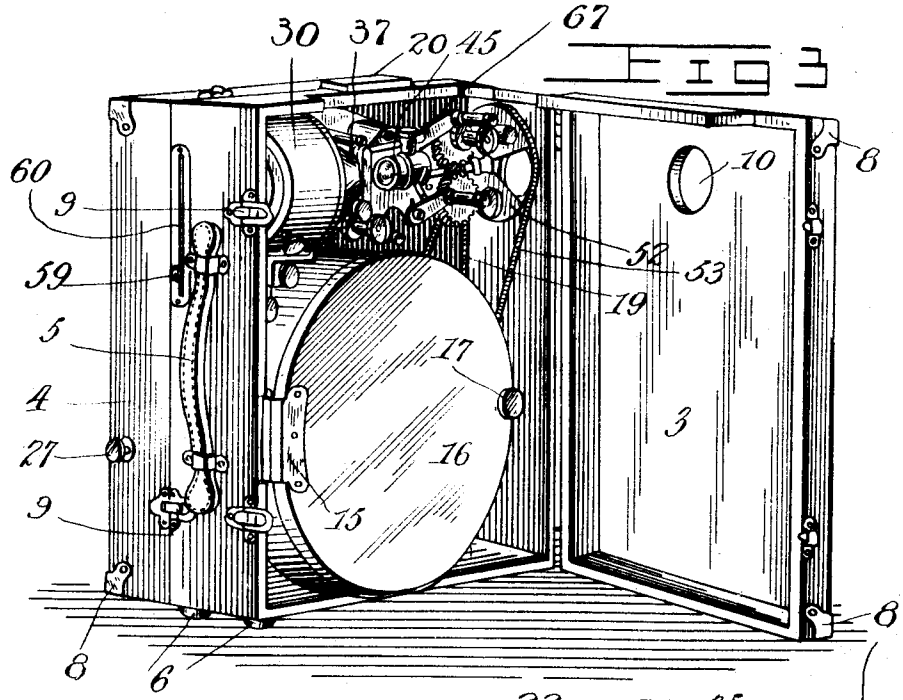


FIG 3

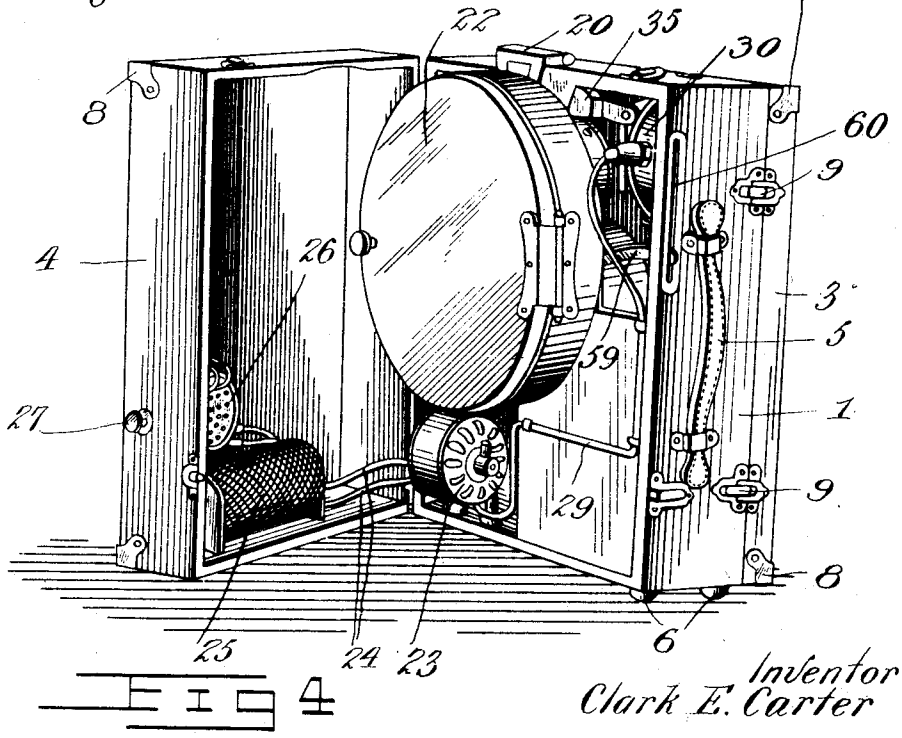


FIG 4

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CINEMATOGRAPHIC MACHINE.

ORIGINAL FILED JULY 8, 1920. 6 SHEETS—SHEET 3.

Fig 13

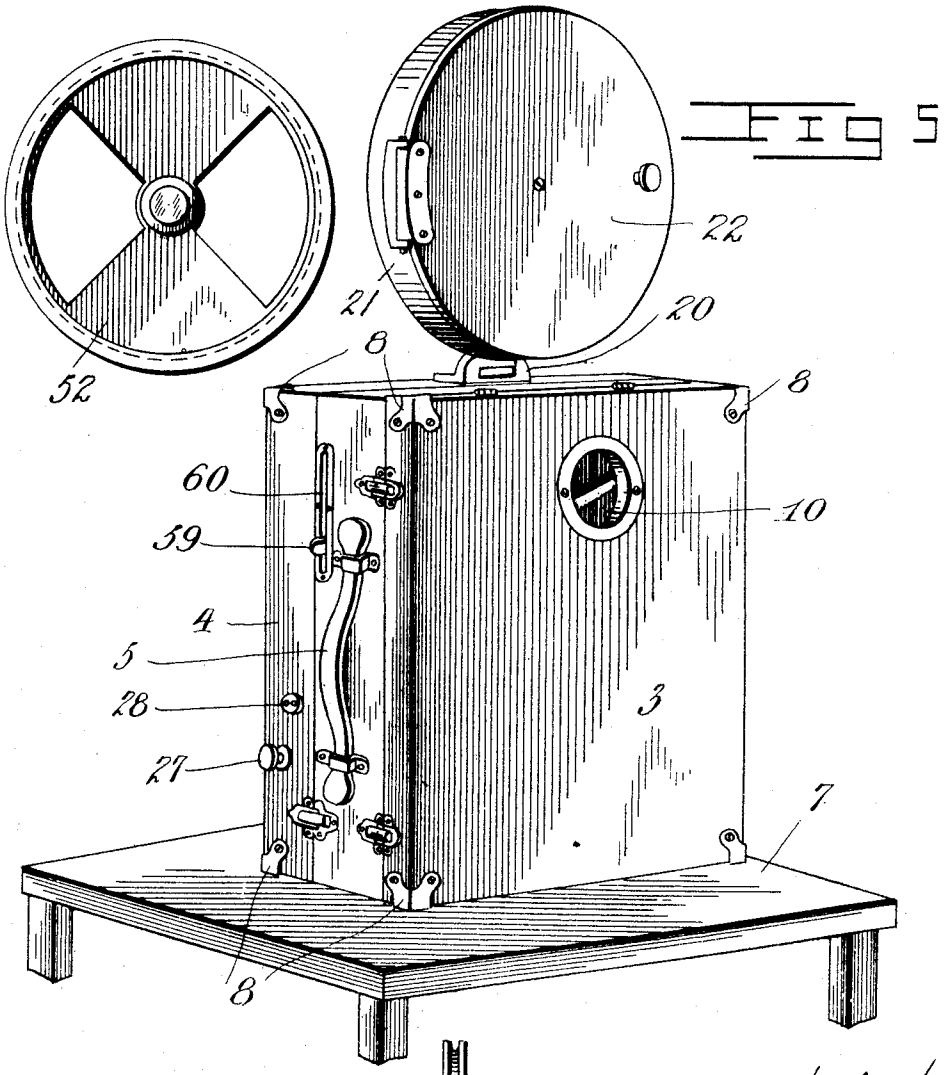
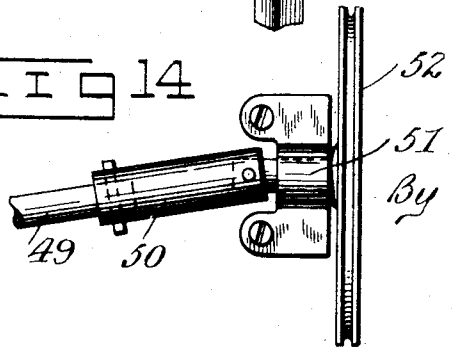


Fig 5

Fig 14



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6 SHEETS—SHEET 4.

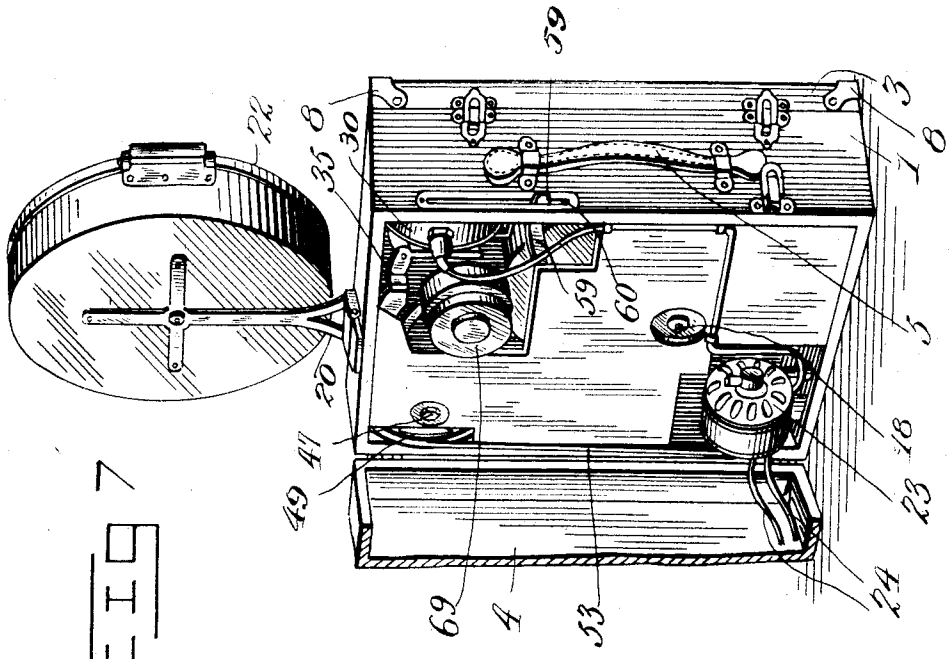


FIG 7

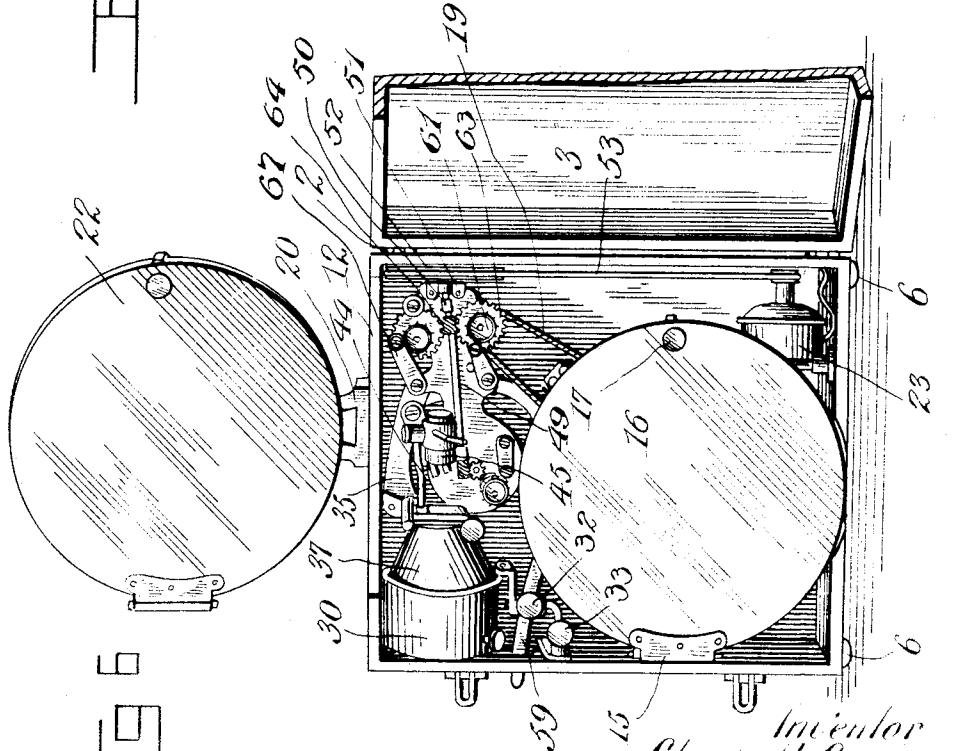


FIG 6

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CINEMATOGRAPHIC MACHINE.

ORIGINAL FILED JULY 8, 1920.

6 SHEETS—SHEET 5.

Fig 8

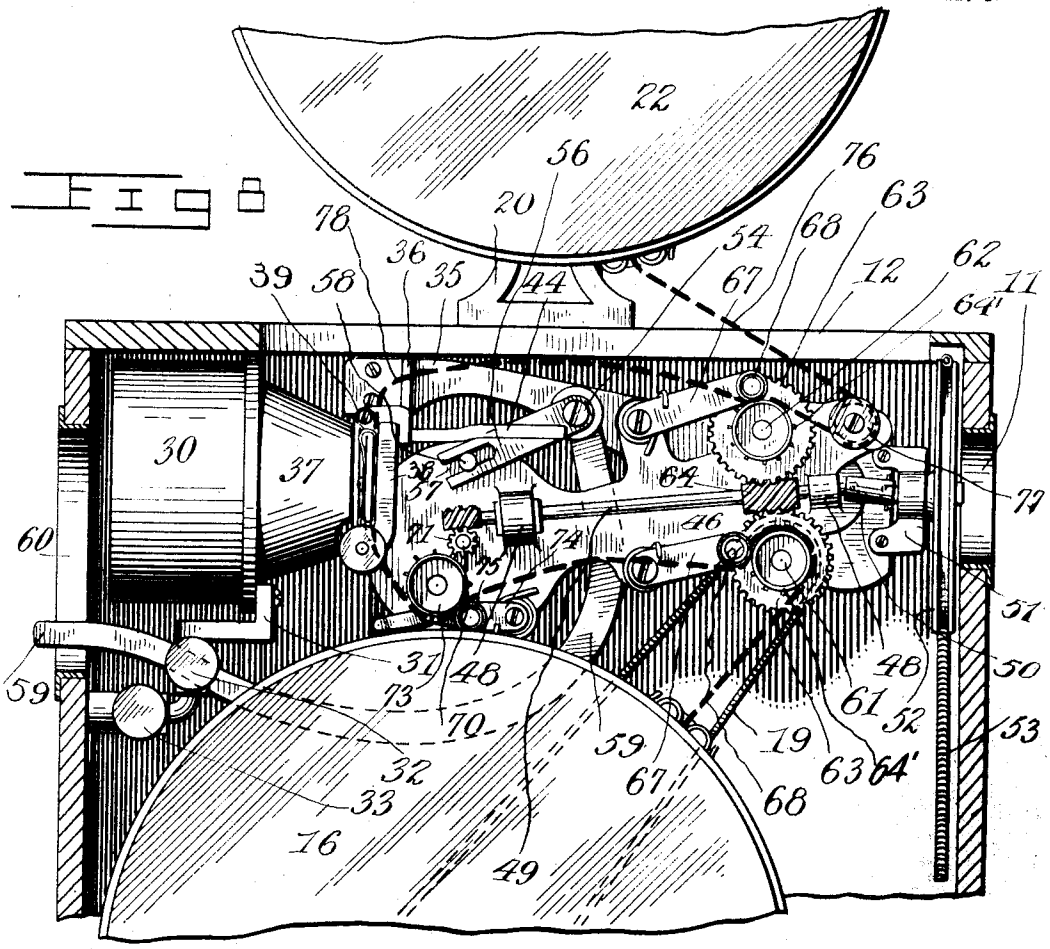


Fig 12

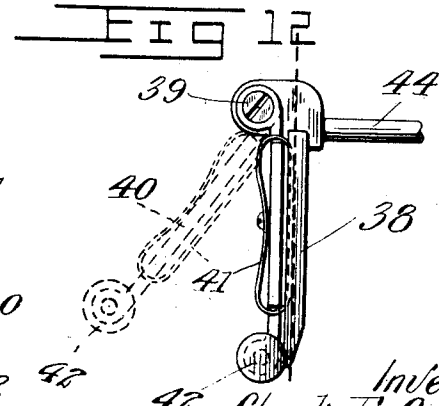
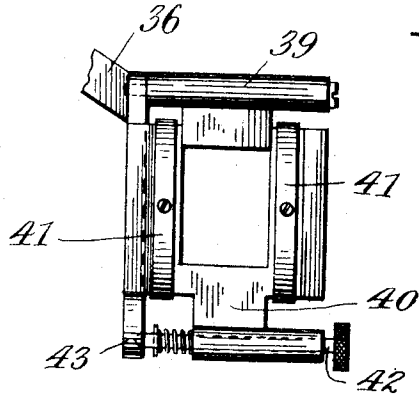


Fig 11



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CINEMATOGRAPHIC MACHINE.

ORIGINAL FILED JULY 8, 1920. 6 SHEETS-SHEET 6.

Fig 9

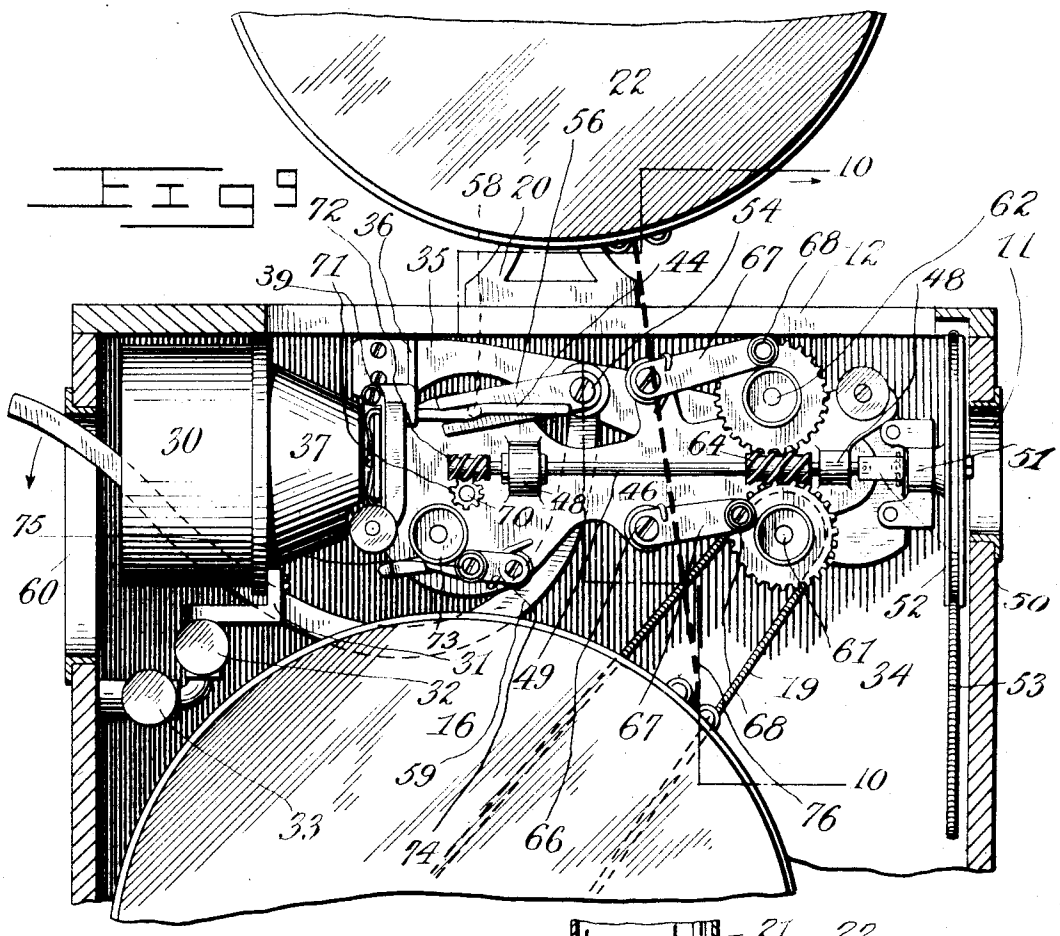
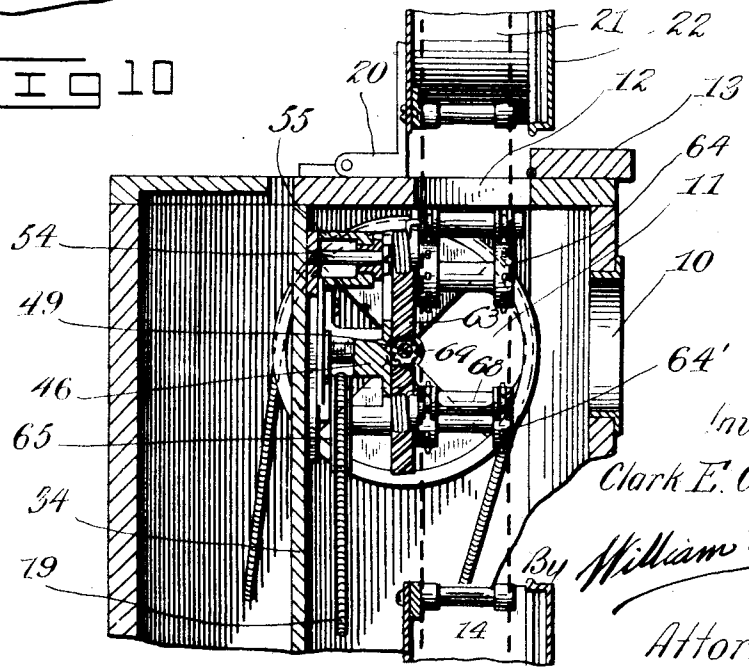


Fig 10



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Patented Jan. 16, 1923. 1,442,647

UNITED STATES PATENT OFFICE.

CLARK E. CARTER, OF MONTREAL, QUEBEC, CANADA, ASSIGNOR TO ALADDIN CINEMA CO. INC., OF MALONE, NEW YORK, A CORPORATION OF NEW YORK.

CINEMATOGRAPHIC MACHINE.

Application filed July 8, 1920, Serial No. 394,773. Renewed December 4, 1922.

To all whom it may concern:

Be it known that I, CLARK E. CARTER, a subject of the King of Great Britain, residing at Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Cinematographic Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which is appertains to make and use the same.

The present invention relates to moving picture machines and the purpose of this invention is to provide a portable apparatus which will be light in weight, simple in construction and operation and one which may be easily and readily set up for use or operated in a compact package so as to take up but a small amount of space when not in use.

A further object of the present invention is to provide a projecting apparatus of this character which may be placed within a small case and which may be easily and readily connected up to an ordinary lighting system whereby moving pictures may be projected upon a wall or any suitable screen.

A further object of the invention is to provide a comparatively simple and compact film feeding mechanism which will take up but a small amount of space within the casing or holder and one which can be adjusted for framing the picture upon the screen.

With the above and other objects in view, the invention consists in certain nominal features of construction, combination, formation and arrangement of parts as will hereinafter be evident as the description continues taken in connection with the accompanying drawings in which:

Figure 1 is a perspective view of the case having the complete projecting mechanism arranged therein, which embodies the present invention;

Figure 2 is a vertical cross section through the same taken on the line 2—2 of Figure 1;

Figure 3 is a perspective view of the casing having one door thereof open to show the projecting mechanism;

Figure 4 is a similar view having another door of the casing open;

Figure 5 is a perspective view of the apparatus when set upon a suitable support and in position for projecting the picture therefrom;

Figure 6 is a side elevation of the same having the front door thereof open;

Figure 7 is a perspective view from the rear side of the case to that as shown in Figure 6 and having the rear door of the casing open;

Figure 8 is an enlarged detail section through the case showing the projecting mechanism when feeding the film therethrough;

Figure 9 is a similar view showing the path of travel of the film when rewinding the same;

Figure 10 is a detail section taken on the line 10—10 of Figure 9;

Figure 11 is a front elevation of the film gate;

Figure 12 is a side elevation of the same;

Figure 13 is a detail front elevation of the pulley shuttle; and,

Figure 14 is a side elevation of the same.

Referring now more particularly to the accompanying drawings wherein like and corresponding parts are designated by similar reference characters throughout the several views.

The case which houses the projecting mechanism has the appearance of an ordinary suitcase, as is evident from Figure 1, and which comprises a central or main section 1 to which is hingedly connected at one end, as at 2, a front door 3 and a rear door 4. The central section is provided with a handle 5 whereby the case may be carried, and the rubber feet or blocks 6 are provided for supporting the case upon a table or any other suitable support which is indicated by the numeral 7. The corners of the case may be provided with the protecting plates 8, and the latch members 9 are provided for fastening the doors to the main section. The front door 3 is provided with a side opening 10 whereby the operator may see the film as it passes through the projecting mechanism and one wall of the central section 1 is provided with an opening 11 through which the pictures project to the screen. Another wall of this central section 1 is provided with a cut away portion 12 through which the film may pass, and adapted to close this cut away portion is a section 13 which is hingedly connected to

the front door whereby this film opening may be closed when the apparatus is not in use. Secured within this central section is a bracket supporting a lower metallic reel holding chamber 14 which has hingedly connected thereto, as at 15, a door 16 and this door 16 is provided with a latch member 17 whereby the door may be opened and closed and retained in its closed position. This lower chamber 14 is provided with a shaft 18 which supports the film winding reel within the casing 14, and this reel may be of the usual construction used in connection with ordinary moving picture machines. This shaft 18 is provided with a pulley over which passes a belt 19 and the latter may be of any flexible construction or a coil spring as shown, so as to effect a flexible drive to the film winding reel.

Supported upon the central section 1 is a bracket 20 and hingedly connected to this bracket is the upper reel holding chamber 21. This chamber 21 is provided with a shaft for holding the film reel and is provided with a door 22 whereby access may be gained to this chamber for placing a reel therein. As illustrated to advantage in Fig. 7 one end of the bracket 20 is secured to the back of the chamber 21 while the opposite end is bent at right angles and hingedly connected to the central section 1 of the case. The right angled portion of the bracket is of substantially oblong shape to capacitate as a base for maintaining the equilibrium of the chamber 21 when the latter is swung into superimposed engagement with the case. When in this position the film may be removed from the said reel, which is contained in the chamber 21, passed downwardly through the opening 12 as shown in Fig. 10, for engagement with cinematographic apparatus contained in the section 1, as hereinafter described, and ultimately wound on a take up reel carried by the chamber 14. The chamber 22, when not in use, may be swung on the axis of the bracket 20 into engagement with one side of the section 1, as shown in Fig. 4, to be completely housed in the case when the door 4 is closed.

For driving the projecting mechanism, which will be later described, and drawing the film through the device, a motor 23 is supported within the central section 1, and leading to this motor are the wires 24. These wires 24 are connected in circuit with the rheostat 25 and a variable switch 26. This rheostat and switch are supported within the rear door 4 and the switch has connected thereto a controller 27 which extends exteriorly of the rear door. A connecting block 28 is also supported within this rear door so that the electrical circuit may be connected with the ordinary lighting circuit of a building or house. Also arranged in circuit with this motor are the wires 29 which lead to a lamp supported within the lamp house 30. This lamp house comprises a suitable casing secured to a bracket 31 and this bracket 31 is vertically adjustable through the connection 32, or it may swing around the connection 33 whereby the lamp house may be swung into proper position or moved so that access may be gained to the lamp contained within the lamp house. From the foregoing, it will be apparent that upon moving the controller 27, the switch may be closed permitting the motor to revolve and supplying current to the lamp within the lamp house.

Arranged within the central section 1 is a partition 34 and secured to this partition is a bracket 35. This bracket is provided with a laterally extending arm 36 which has formed therewith the film gate and this film gate projects in front of the condensing lens holder 37 carried by the lamp house 30.

This film gate comprises a main stationary section 38 and pivotally connected to the upper end thereof, as at 39, is a swinging section 40. This swinging section 40 is provided with the leaf springs 41 which latter press against the film as it passes through the gate, so as to hold the film in a proper position as the light is being projected therethrough. The lower end of this swinging section 40 is provided with a spring actuated pin 42 which is adapted to normally engage the projecting end 43 of a stationary section of the gate. By pulling outwardly upon this pin 42, it will be released from the projection 43 and this swinging section may be moved to the position as is better illustrated in dotted lines in Figure 12, so that the film may be placed in position within the gate. The stationary section of this gate is provided with a longitudinally extending rod 44 which latter supports the lens holder 45.

The film feeding mechanism is carried by a plate 46 which plate is pivotally connected to the forward end of the bracket 35 and the bolt 47 which affords this pivotable connection extends through the forward end of the bracket 35 and the partition 34. Journalled within bearings 48 carried by this plate 46 is a main driven shaft 49. This shaft 49 is connected through a universal joint 50 to the hub 51 of the pulley shutter 52. This shutter 52 may be of any well known or preferred construction, but its periphery is provided with a groove so that a belt 53 may pass thereover. This belt is made of a suitable flexible material such as a coil spring, as shown, and also extends over the pulley carried by the motor 23. This pulley shutter is arranged within the medial section of the casing and at the rear of the opening 11. When the motor 23 is set in motion, the shutter pulley will also be

revolved and likewise the shaft 49 will be rotated. By providing the universal connection 50, the plate 46 may be adjusted so that the frame of the picture may be effected.

Mounted upon the bracket 35 is a shaft 54 and arranged upon this shaft is a sleeve 55 having secured thereto a link 56, and the outer free end of this link 56 is bifurcated as at 57 to receive a pin 58 projecting from one side of the plate 46. Also secured to this sleeve 55 is a curved lever 59, and one end of this lever 59 projects through the vertical slot 60 formed within the medial section 1, so that the frame of the picture may be effected by moving this lever 59. Journalled within the forward end of this plate 46 and extending laterally therefrom are the shafts 61 and 62. These shafts are each provided with a gear wheel 63 and the latter mesh with a worm gear 64 carried by the shaft 49, so that when the shaft 49 is rotated, the shafts 61 and 62 are also revolved. These shafts 61 and 62 each carry a feed sprocket 64′ and the shaft 61 is provided with a pulley 65 over which passes the belt 19 whereby the movement may be transmitted to the film winding reel. Pivotally supported as at 66 upon the plate 46 are the spring pressed arms 67 carrying the grooved rollers 68 and the latter project against the sprockets 64 for holding the film in place upon these sprockets.

Projecting from the opposite side of the plate 46 is a casing 69 in which is arranged a suitable escapement mechanism which is now in common use with ordinary moving picture machines and may be what is known as a star and cam movement. The drive shaft 70 of this escapement mechanism is provided with a gear 71 and the latter meshes with a worm gear 72 carried by the shaft 49. This escapement mechanism is also provided with a shaft carrying a sprocket 73 which sprocket has an intermittent movement whereby the film may be drawn through the film gate and each picture upon the film will be quickly and instantaneously lowered in position, momentarily retained in this position and almost instantaneously drawn from the film gate. A spring gate lever 74 is secured to the plate 46 and carries a grooved roller 75 which latter presses against the intermittent sprocket 73. The film which is represented by a dotted line and indicated by the numeral 76 is fed from the film holding reel mounted within the chamber 21 and this film passes through the opening 12 within the medial section of the casing around a roller 77 over the upper feed sprocket 64′ and from there it passes through the film gate, but before entering the film gate, it forms the usual loop at a point 78. The film then passes over the intermittent sprocket 73 and then over the lower feed sprocket 64′. From this lower feed sprocket, the film passes into the lower chamber 14 and is wound upon the film reel arranged within this chamber.

As current is supplied to the motor 23, the pulley shutter will be rotated and which in turn will cause the shaft 49 to revolve. As this shaft 49 revolves, it will draw the film through the projecting mechanism and also the film will be wound upon the reel arranged within the lower chamber 14. The lens 45 may be adjusted in any well known manner and the framing of the picture is effected by moving the plate 46 through the lever 59 as the intermittent sprocket 73 is carried by this movable plate. Therefore, as the apparatus is set in motion, the light from the lamp house will project through the film as the latter passes through the film gate and the moving pictures will be projected upon the screen. After the film has completely passed from the chamber 21 into the chamber 14 and it is desirable to rewind the film, the reel containing the used film may be removed from the chamber 14 and placed within the chamber 21. The film will then be passed through the opening 12 within the medial section of the casing and then directly to the reel arranged within the lower chamber 14, as is illustrated in Figure 7. The motor 23 may then be set in motion and the film wound upon the reel contained within the chamber 14. In this manner, it is obvious that no additional apparatus is necessary for rewinding the film, but the apparatus may be used for projecting the pictures, drawing the film through the machine for effecting such projection and rewinding the film without projecting the pictures from the apparatus.

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

1. A portable cinematograph including a casing, and a film feed reel hingedly mounted within the casing and movable into an operative position on the exterior of the case.

2. A motion picture machine including a portable casing, and film feed and take up reels mounted in the casing, the former of which is movably attached to the casing and capable of being swung into superimposed engagement with the outside of the latter.

3. A device as specified including a portable casing equipped with feet on one end to support the casing in an upright position, cinematograph apparatus carried by the casing embodying a film feed reel movable from within the casing into superimposed engagement with the top of the latter.

4. A motion picture machine including a case equipped with a feed reel chamber,

and a bracket secured to the chamber and hinged on the case to permit said chamber to be swung from within the case to a position of operation on the outside of the latter.

5. A casing for moving picture machines comprising a main section consisting of end, lower and top walls, film feeding and projecting mechanism arranged within said casing, said lower wall having a picture projecting opening therein, a handle carried by said top wall, supporting blocks carried by one of the said end walls, and a film holding reel connected to the other of said end walls whereby it may rest thereupon while the film is being fed through the machine and folded within the casing when the machine is not in use.

6. The combination with a moving picture machine comprising a casing, a film projecting and feeding mechanism arranged therein, a film holding reel, a support for said reel, means for pivotally connecting said support to said casing whereby said reel may be suspended therein, and said support being adapted to rest upon said casing for retaining the reel in position whereby the film contained thereon may be fed to said film feeding mechanism.

7. A portable moving picture machine including a casing comprising a main section and side sections, film feed and take up reels adapted to be arranged within the sections of said casing, a power element operable to transfer the film from one reel to the other, and a shutter arranged in front of the film and in direct operative connection with the power element for rotation simultaneously with the motion of the film.

8. A moving picture machine comprising in combination a casing, an adjustably supported plate arranged therein, a film projecting and feeding mechanism carried by said plate, a shutter, a motor directly connected to said shutter and means whereby when said shutter is rotated, said film projecting and feeding mechanism may be operated.

9. A moving picture machine comprising a casing, a plate adjustably suspended within said casing, a film feeding mechanism carried by said plate, a lamp house arranged within said casing at one end of said plate, a film gate arranged in front of said lamp house, a lens holder connected to said film gate, a shutter arranged within said casing at the opposite end of said plate, a film receiving reel arranged within said casing below said plate, and a film holding reel adapted to be supported above said plate, substantially as and for the purpose specified.

10. A moving picture machine comprising a bracket, a plate having the forward end thereof pivotally connected to said bracket, means operatively connected to the opposite end of said plate for adjusting the same, a film feeding mechanism comprising a plurality of sprocket wheels over which the film passes, said sprocket wheels being supported upon and projecting from one side of said plate, an escapement mechanism arranged upon the opposite side of said plate and operatively connected to one of said sprocket wheels, a shaft journalled upon one side of said plate and operatively connected to said film feeding mechanism, a driven shutter supported upon said bracket, one end of said shaft extending beyond said plate and a flexible connection between said shutter and the extended end of said shaft.

11. A portable moving picture machine including a case comprising a central open sided section and hinged side sections, feet carried by one end of the central section to support the case in an upright position, and cinematograph apparatus arranged in said sections, a portion thereof being engageable with the upper end of the central section when the latter is set upon its feet.

12. A moving picture machine comprising a portable casing consisting of a main section, a film feeding mechanism arranged within said main section, a lamp house supported within said main section, and at one side of said feeding mechanism, a rotary shutter arranged within said main casing, and at the opposite side of said feeding mechanism, a film receiving chamber arranged within said main section, a film holding chamber pivotally connected to said main section, doors for closing said main section, and said film holding chamber adapted to swing within one of said doors.

13. A moving picture machine comprising a portable casing consisting of a main section, a film feeding and projecting mechanism arranged within said main section, a motor for driving said projecting and feeding mechanism and arranged within said main section, a lamp arranged within said main section, a door hingedly connected to said main section, whereby access may be gained to the feeding and projecting mechanism, a rear door hingedly connected to said casing, a switch and rheostat supported within said rear door, said switch, rheostat, motor and lamp being in the same circuit, a controller arranged exteriorly of said casing for controlling said switch, and a lever arranged exteriorly of said casing for moving the film feeding mechanism whereby the pictures may be framed, substantially as and for the purpose specified.

14. A portable moving picture machine including a case having an opening through one of the walls thereof, motion-picture apparatus mounted within the casing and embodying a film feed reel capable of swinging movement into superimposed engagement with the wall of the casing in which said

opening is formed, said reel overhanging the opening to permit movement of its film therethrough and into the casing substantially as described.

15. A portable moving picture machine including a casing comprising a central section and a pair of hinged side sections, feet carried by one end of the central section, the latter having an opening formed in its opposite end, a film feed reel engageable with the upper end of the central section, when the latter is set upon said feet, to permit movement of its film through said opening and into the casing, a portion of one of said hinge sections being extended to close said opening when the hinged sides are engaged with said central section.

In witness whereof I have hereunto set my hand.

CLARK E. CARTER.