

E. L. AIKEN.
KINETOSCOPE.

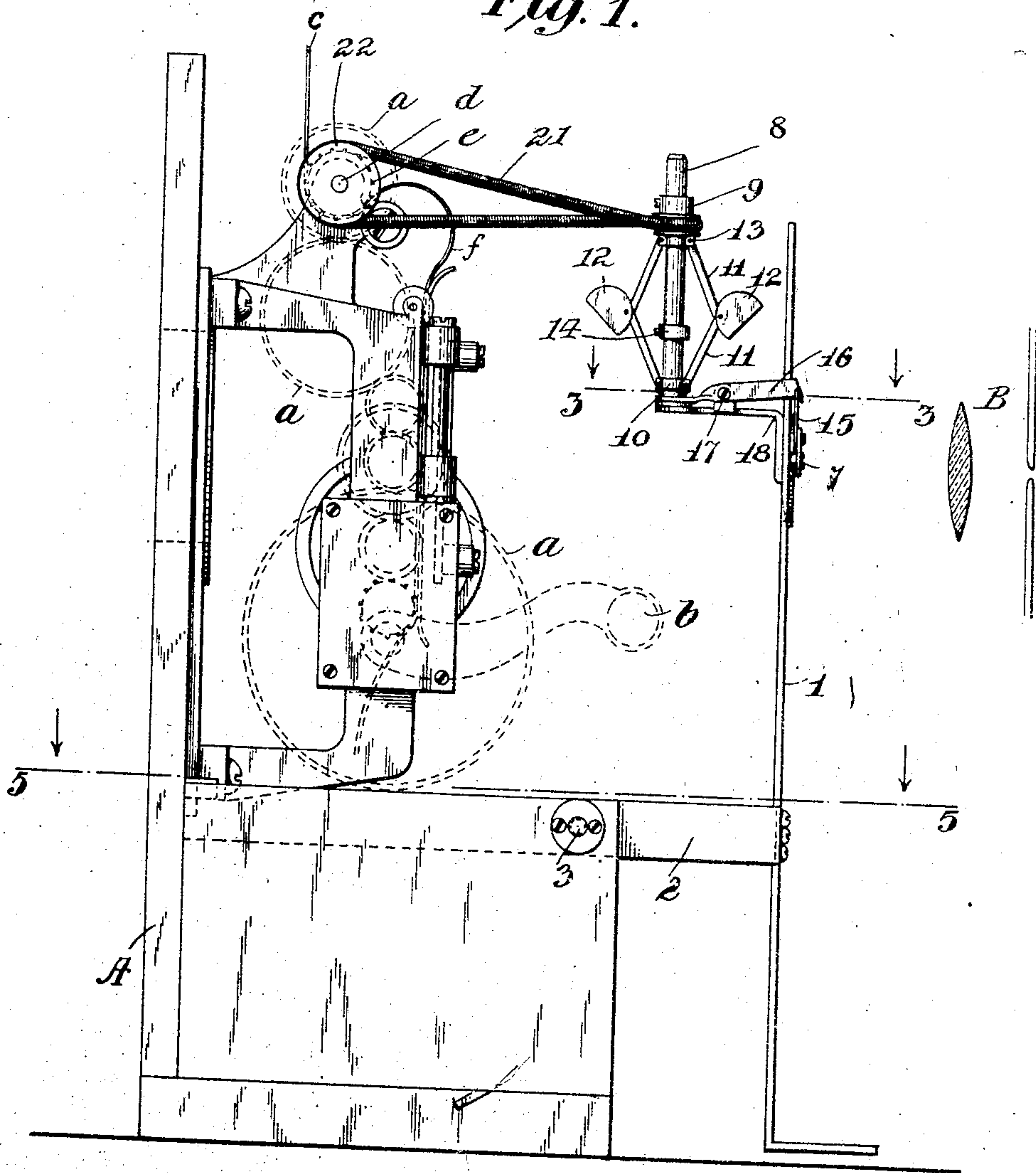
APPLICATION FILED APR. 12, 1905.

967,293.

Patented Aug. 16, 1910.

3 SHEETS—SHEET 1.

Fig. 1.



Attest:
Edgeworth
De los Holden

Inventor:
Edward L. Aiken
by *Frank L. Ayer* Atty.

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3 SHEETS—SHEET 2.

Fig. 2.

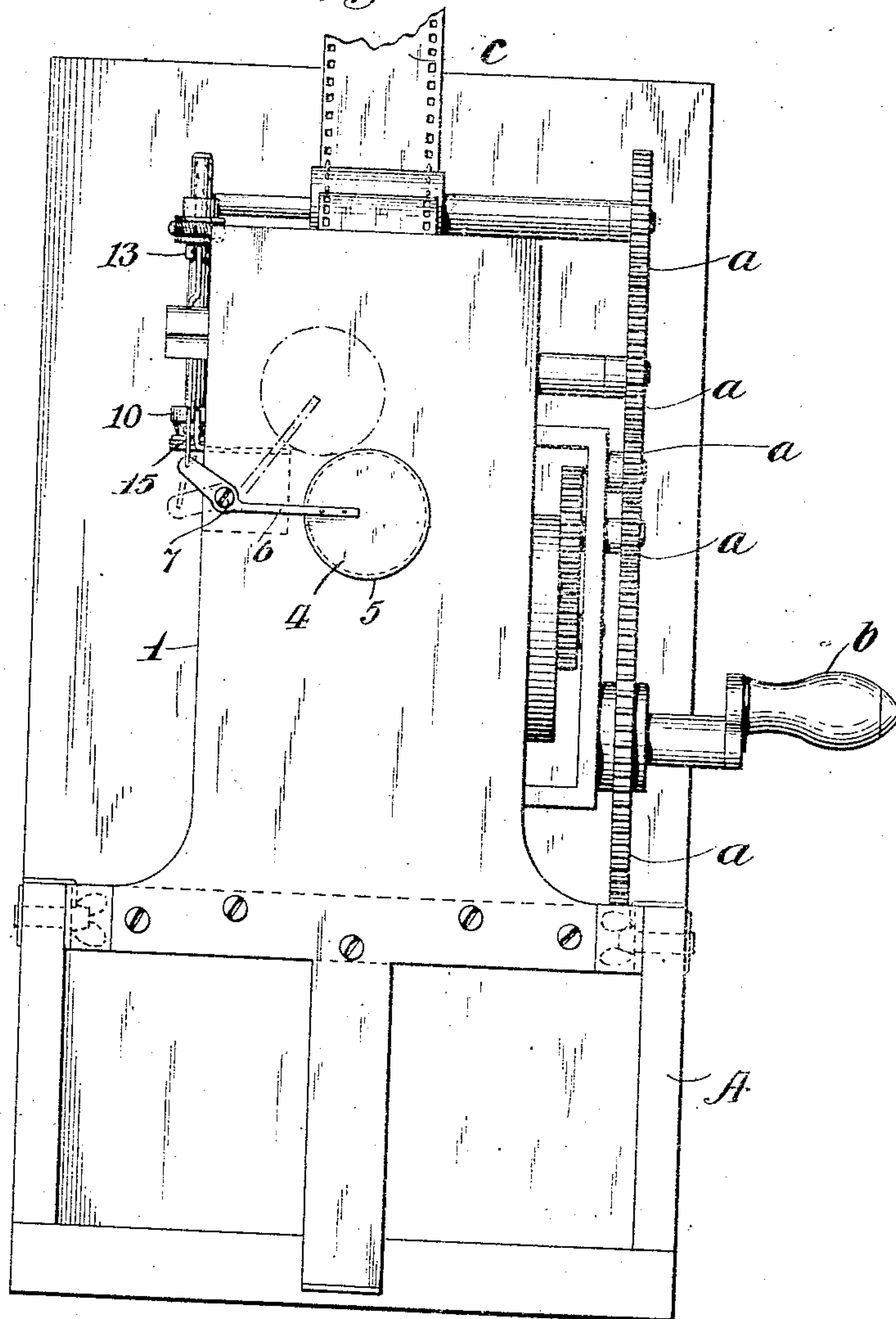
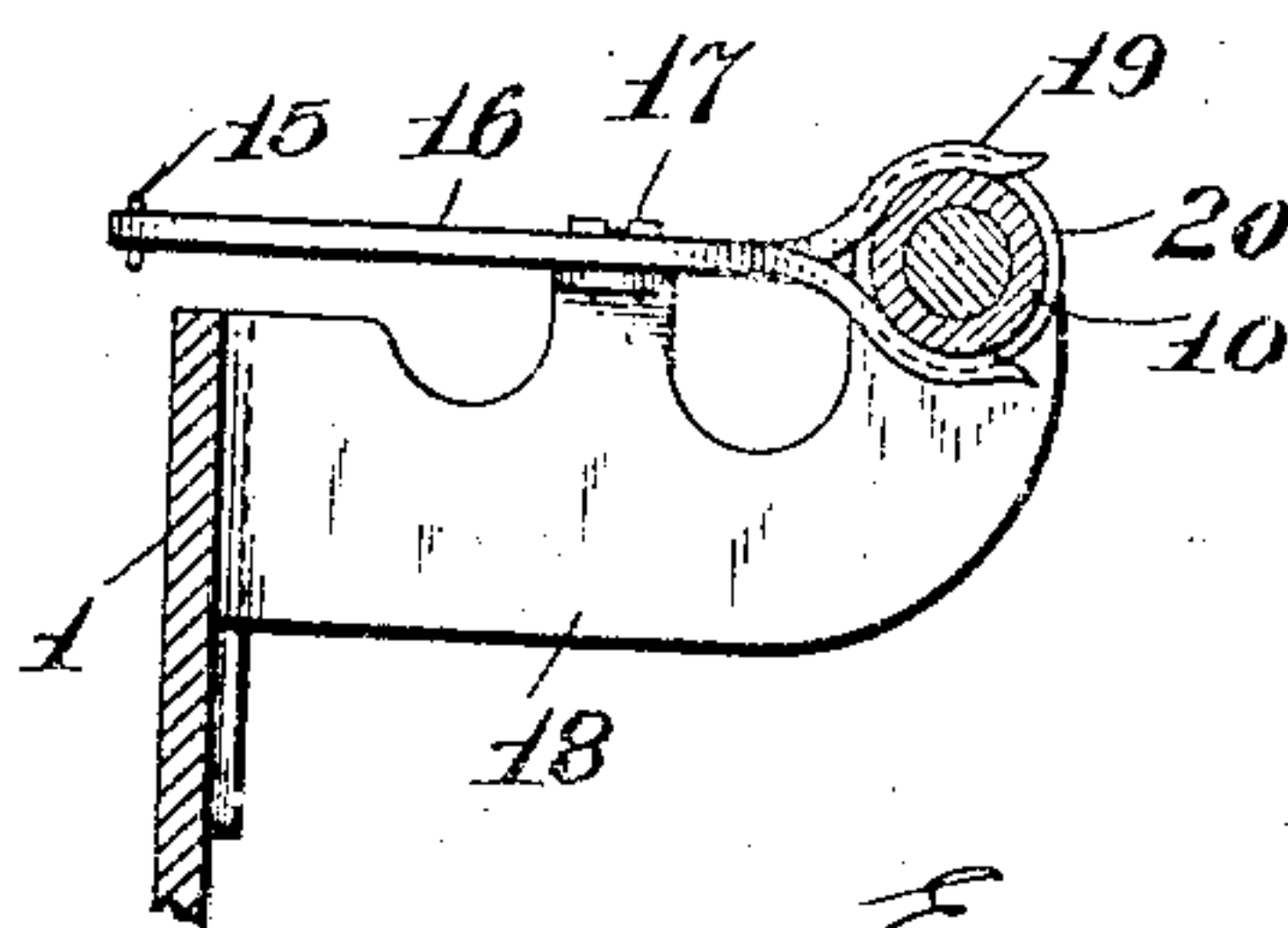


Fig. 3.



Attest:
Edgeworth
De los Atolera

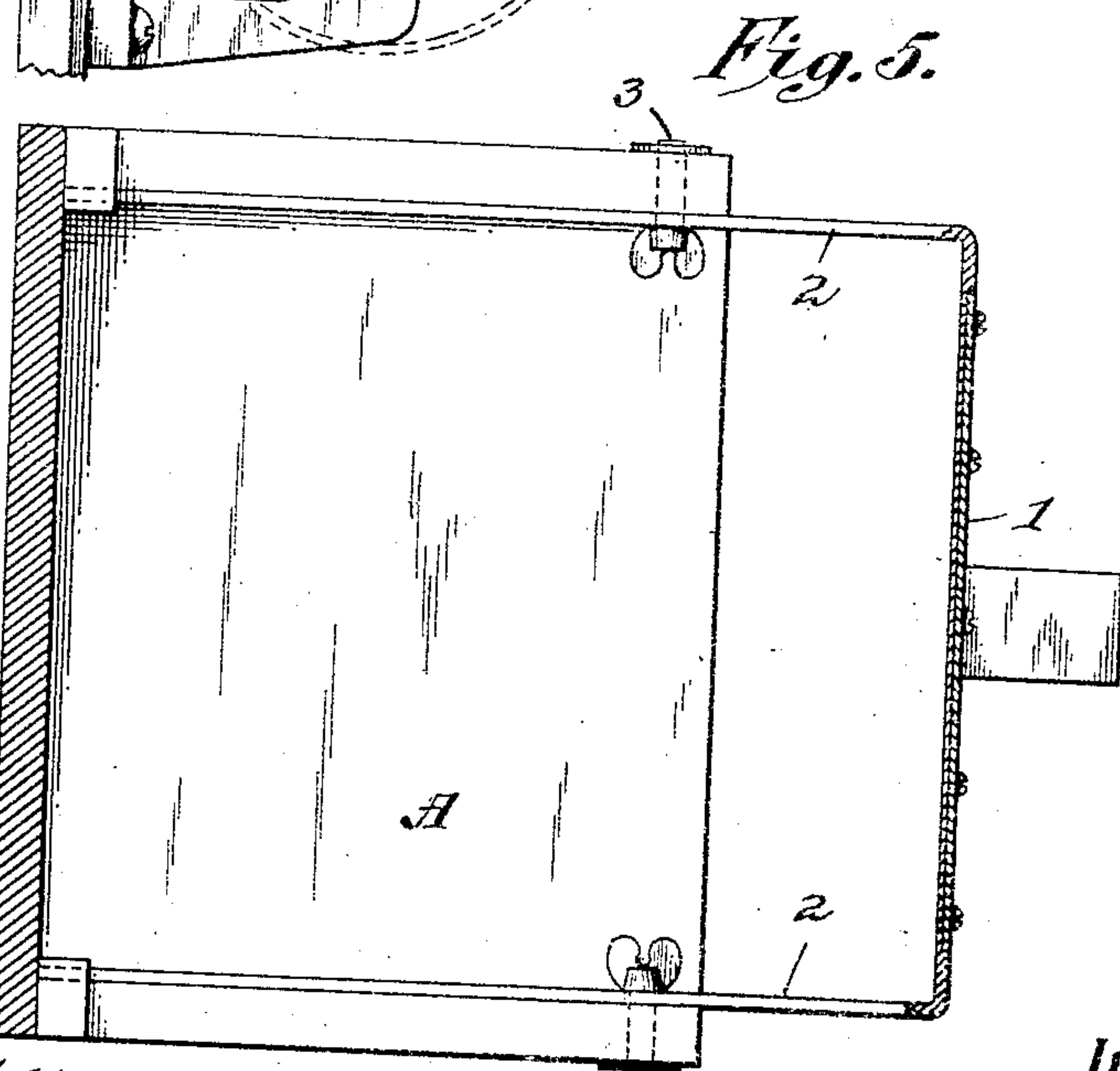
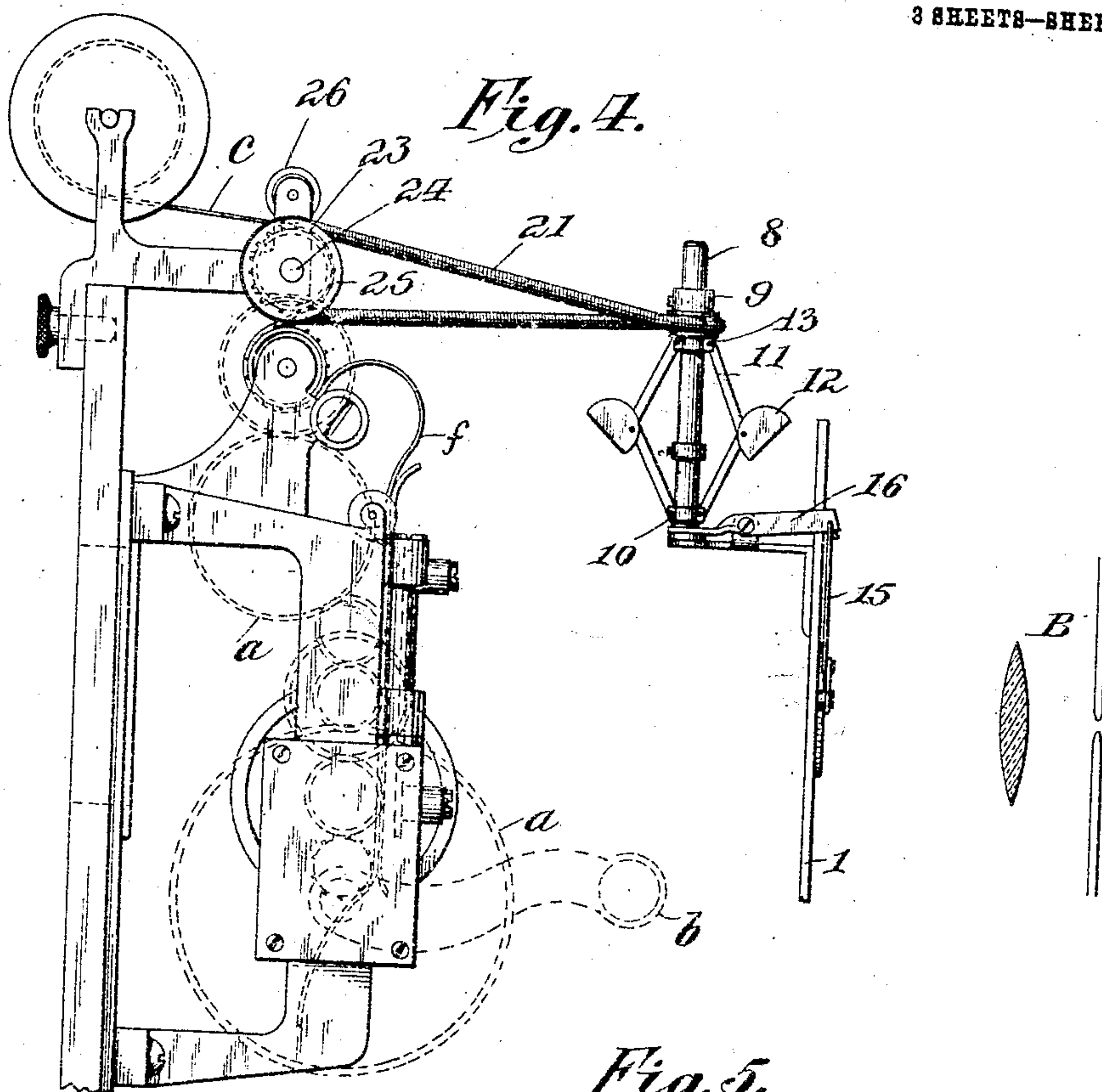
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3 SHEETS—SHEET 3.



Attest:
Edgewood Greene
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UNITED STATES PATENT OFFICE.

EDWARD L. AIKEN, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO EDISON MANUFACTURING COMPANY, OF WEST ORANGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

KINETOSCOPE.

967,293.

Specification of Letters Patent. Patented Aug. 16, 1910.

Application filed April 12, 1905. Serial No. 255,100.

To all whom it may concern:

Be it known that I, EDWARD L. AIKEN, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Kinetoscopes, of which the following is a description.

My invention relates to an improved attachment for kinetoscopes or machines for the exhibition of photographs or other pictures carried on a transparent traveling film and projected upon a screen by means of a source of light and relates more particularly to the exhibition of photographs known as moving pictures, which are carried on a long ribbon-like film composed usually of collodion, celluloid or other highly inflammable material. For the exhibition of such pictures, a powerful light such as an arc light or calcium light is used and focused by means of lenses, so that a very powerful beam of light is produced. The heat which accompanies such beam of light is very considerable and is sufficient to ignite the film referred to within a space of a few seconds if the film is at rest. These films are intended to be driven at a high rate of speed during the operation of the device, but owing to their fragile and flexible character they sometimes tear or fail to feed through the apparatus, and if the operator fails to quickly cut off the light from the projecting device, the film is set on fire, with disastrous results, since these pictures are generally exhibited in theaters and similar public places in which panics may be very easily started.

My invention has for its object the provision of mechanism for automatically shutting off the beam of light from the projecting device whenever the strip of film is not in motion, so it will be impossible for a film to be ignited from the cause mentioned, and my invention consists in the features hereinafter set forth and claimed.

In the drawings which accompany this specification, Figure 1 is a side elevation showing strip moving mechanism of the usual form and one form of my invention attached thereto. Fig. 2 is an elevation of Fig. 1 viewed from the direction in which the light travels, which I will hereafter call the rear of the apparatus. Fig. 3 is a section on line 3, 3 of Fig. 1. Fig. 4 is a partial

side elevation similar to Fig. 1, and showing a modification of my invention. Fig. 5 is a section on line 5, 5 of Fig. 1.

In all the above views corresponding parts are indicated by like reference numerals. 60

In the apparatus shown A represents a support for the strip moving mechanism, the latter comprising a train of gears *a*, and a crank *b* for operating the said gears. The gears *a* operate the usual shafts and sprockets for feeding the film past the display opening with alternate feed and stop motion in the usual manner. All of these parts are well known, and may be of any form suitable for the purpose. 70

Between the source of light B and the strip actuating mechanism, I interpose a metallic screen 1, the same being supported in any suitable way, as by means of forwardly projecting arms 2, 2 secured to the support A by bolts 3, 3. This screen is provided with a circular opening 4 directly behind the display opening across which the film passes and a circular shutter 5 slightly greater in diameter than the opening 4 normally closes the same, as shown in Fig. 2. This shutter is composed of noninflammable material, preferably metal, and is carried at one end of a lever 6 which is pivoted at 7 to the screen 1. When the shutter is turned on its pivot to the position indicated by dotted lines in Fig. 2, the opening 4 will be completely open. This movement of the shutter 5 is accomplished by means of a centrifugal governor mounted on a stud 8 carried by the screen 1. The sleeves 9 and 10 are rotatably mounted on the stud 8 and are connected by links 11, 11 pivoted at one end to the respective sleeves and at the other end to each other and to the weights 12. The upper sleeve 9 is sustained on the stud 8 by a collar 13. It is obvious, therefore, that when the sleeve 9 is rotated, the motion will be imparted to the links 11, weights 12 and sleeve 10. Centrifugal force will cause the weights 12 to draw the sleeve 10 upward, until it contacts with the collar 14. This movement of the sleeve 10 is conveyed to the lever 6 by means of a link 15 connected to one end of a second lever 16 which is pivoted at 17 to a suitable support 18, and whose opposite end 19 is forked and occupies a groove 20 formed in the sleeve 10, whereby the upward movement of the said sleeve causes the forked end of the lever 16 110

to be moved upward; the opposite end of the link 15 being moved downward, the lever 6 is turned on its pivot and the shutter 5 is carried up into the position shown in Fig. 2.

5 In the apparatus shown in Fig. 1 the sleeve 9 is driven by means of a belt 21 passing over a pulley 22 and the latter is fixed on one of the shafts driven by the gear train *a*, such as the shaft *d* which carries the sprocket *e* for drawing the film *c* from the supply reel to form the loop *f*. It is obvious from this description that whenever the operator ceases to drive the train of gears or slows up in the speed of rotation of the crank *b* sufficiently, the governor weights 12 and sleeve 10 will drop and close the shutter 5, and that the shutter will be opened or raised only when the crank is turned at or above a given speed.

20 In some cases it is desirable that the governor for operating the shutter should be driven by means of the traveling film, so that in case of a breakage of the film, the shutter will be closed even though the operator should keep on driving the gear train. In order to accomplish this it is only necessary to provide a sprocket 23 mounted on a shaft 24 which carries a pulley 25 for driving the belt 21. The shaft 24 being entirely separate from the driving train, acts as an idler driven by the film *c* and transmitting power to the belt 21 for operating the governor. A roller 26 is preferably placed above the sprocket 23 to hold the film in engagement therewith.

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

1. In a kinetoscope, the combination with 40 film moving mechanism, of a source of light, a movable shutter normally occupying a position between the light and the film, and means operated by the moving film for automatically moving said shutter out of said position, substantially as set forth.

2. In a kinetoscope, the combination with 45 means for supporting and progressively moving a film, of a screen in the rear of the film supporting means and provided with an opening, a movable shutter normally closing said opening and means adapted to be operated by the moving film for moving said

shutter out of said position, substantially as set forth.

3. In a kinetoscope, the combination with 55 a frame provided with an opening and means for progressively moving a film across said opening, of a movable shutter behind said frame, and means adapted to be operated by said film for moving the shutter, substantially as set forth.

4. In a kinetoscope, the combination with a frame provided with a light opening and means for progressively moving the film across said opening, of a screen behind said 65 frame and provided with an opening in line with the first named opening, a movable shutter normally closing the opening in said screen, and means adapted to be operated by the moving film for moving the said shutter 70 out of its said position, substantially as set forth.

5. In a kinetoscope, the combination with means for supporting and progressively moving a film, of a shutter in the rear of 75 said film supporting means and centrifugal means adapted to be actuated by the moving film for operating said shutter, substantially as set forth.

6. In a kinetoscope, the combination with 80 means for supporting and progressively moving a film, of a shutter in the rear of the film supporting means, centrifugal means for operating said shutter, a loose pulley around which the film is adapted to 85 pass, and a driving connection between said pulley and the shutter operating mechanism, substantially as set forth.

7. In a moving picture apparatus, the combination of two frames removably secured 90 together, one frame provided with mechanism for intermittently feeding a film across a display opening and the other frame carrying a shutter adapted to cut off the projecting light from behind said display opening, and centrifugal means for operating 95 said shutter, also mounted on said last mentioned frame substantially as set forth.

This specification signed and witnessed this 11th day of April, 1905.

EDWARD L. ATEN.

Witnesses:

DELOS HOLDEN,
FRANK L. DYER.