

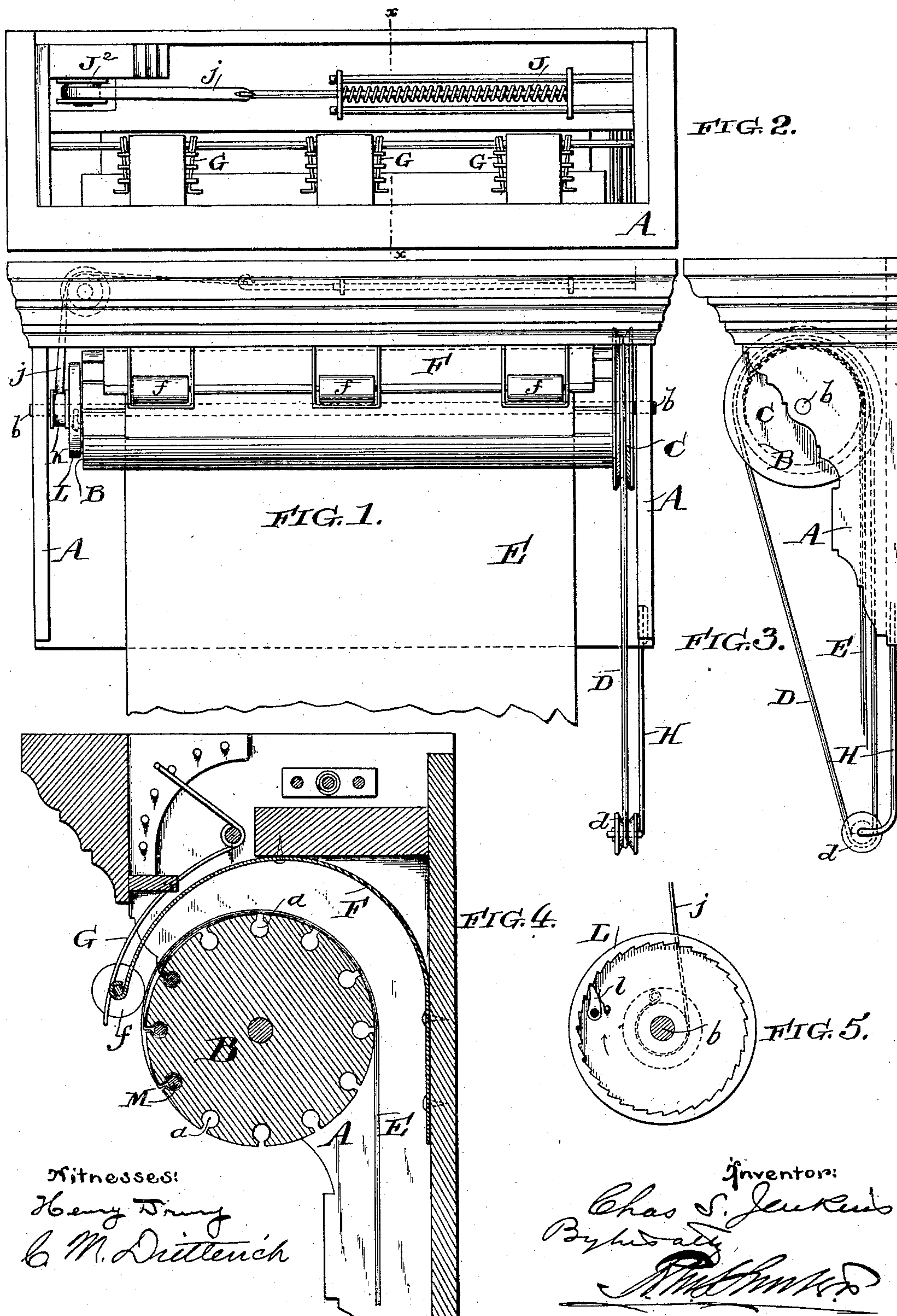
(No Model.)

3 Sheets—Sheet 1.

C. S. JENKINS.  
EXHIBITING APPARATUS.

No. 473,508.

Patented Apr. 26, 1892.





(No Model.)

3 Sheets—Sheet 2.

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EXHIBITING APPARATUS.

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FIG. 7.

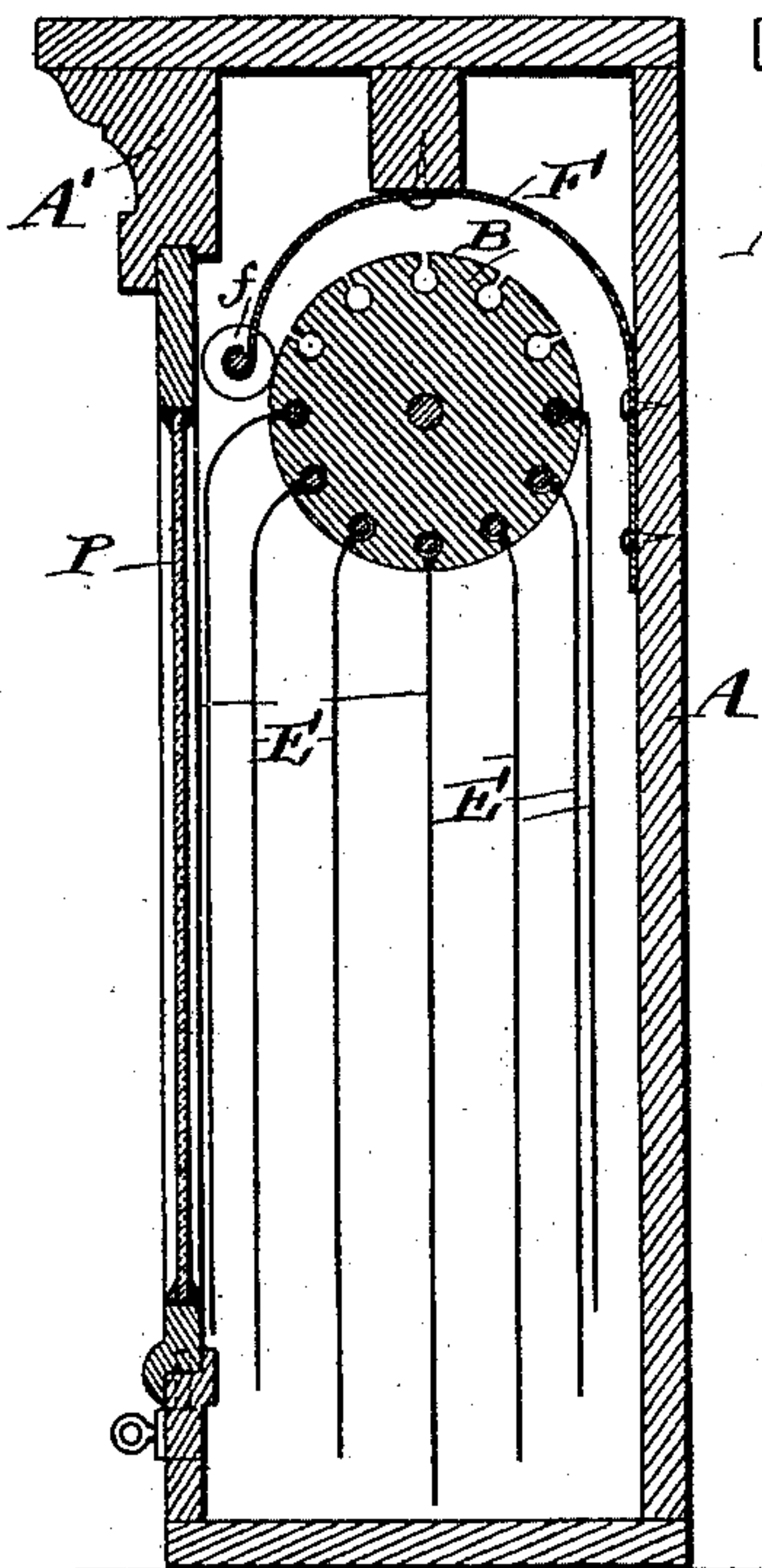


FIG. 6.

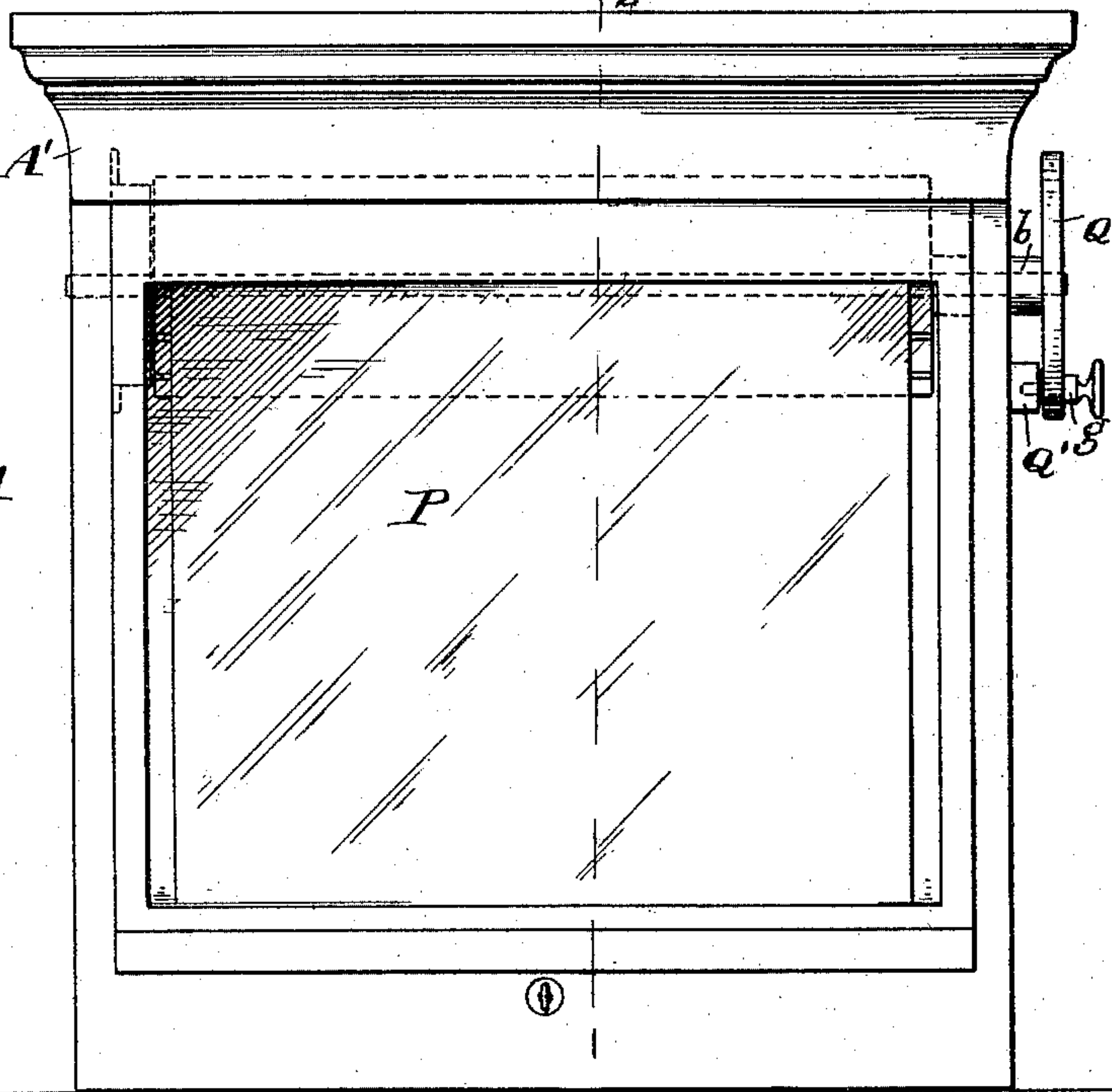


FIG. 10.

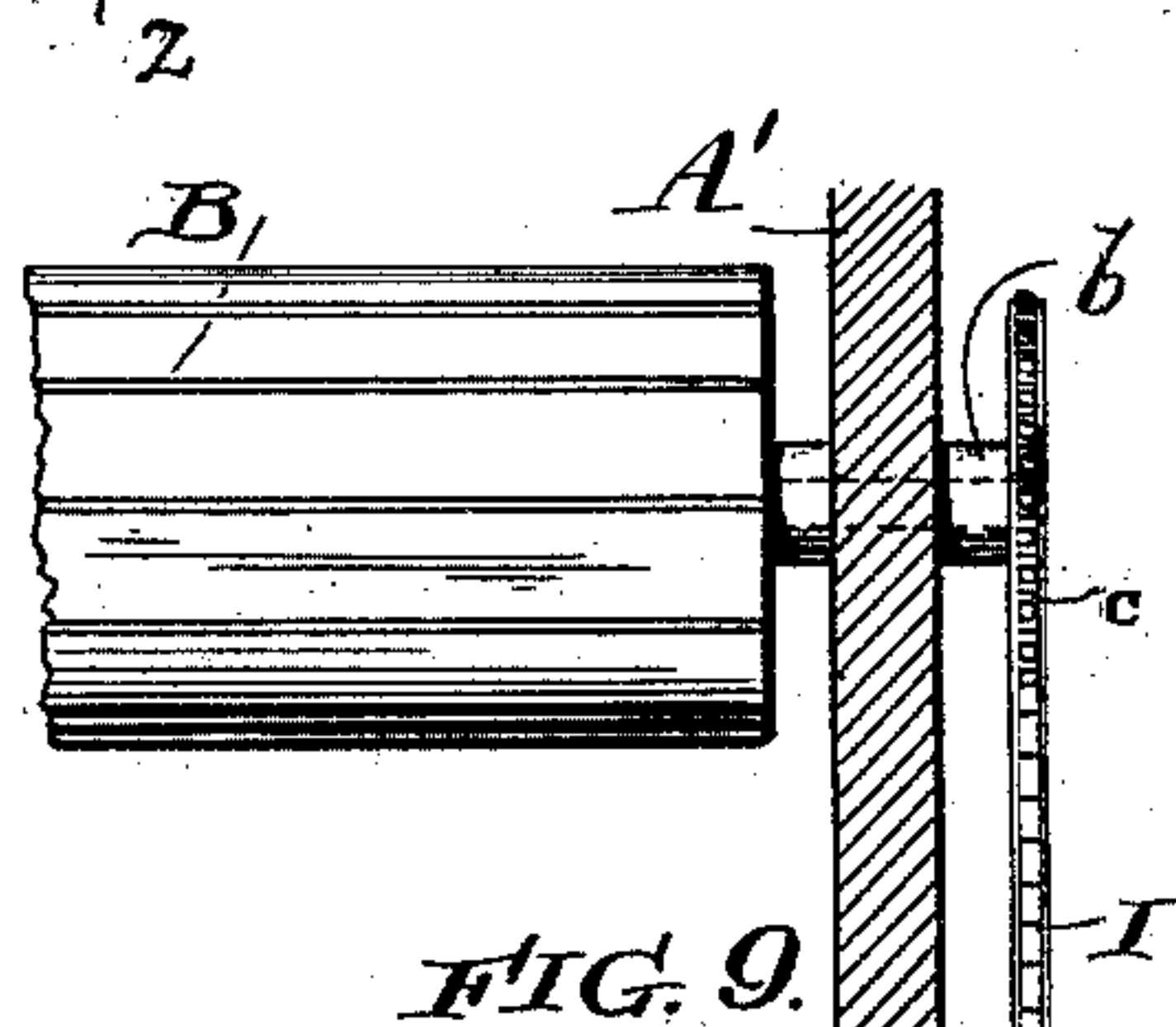
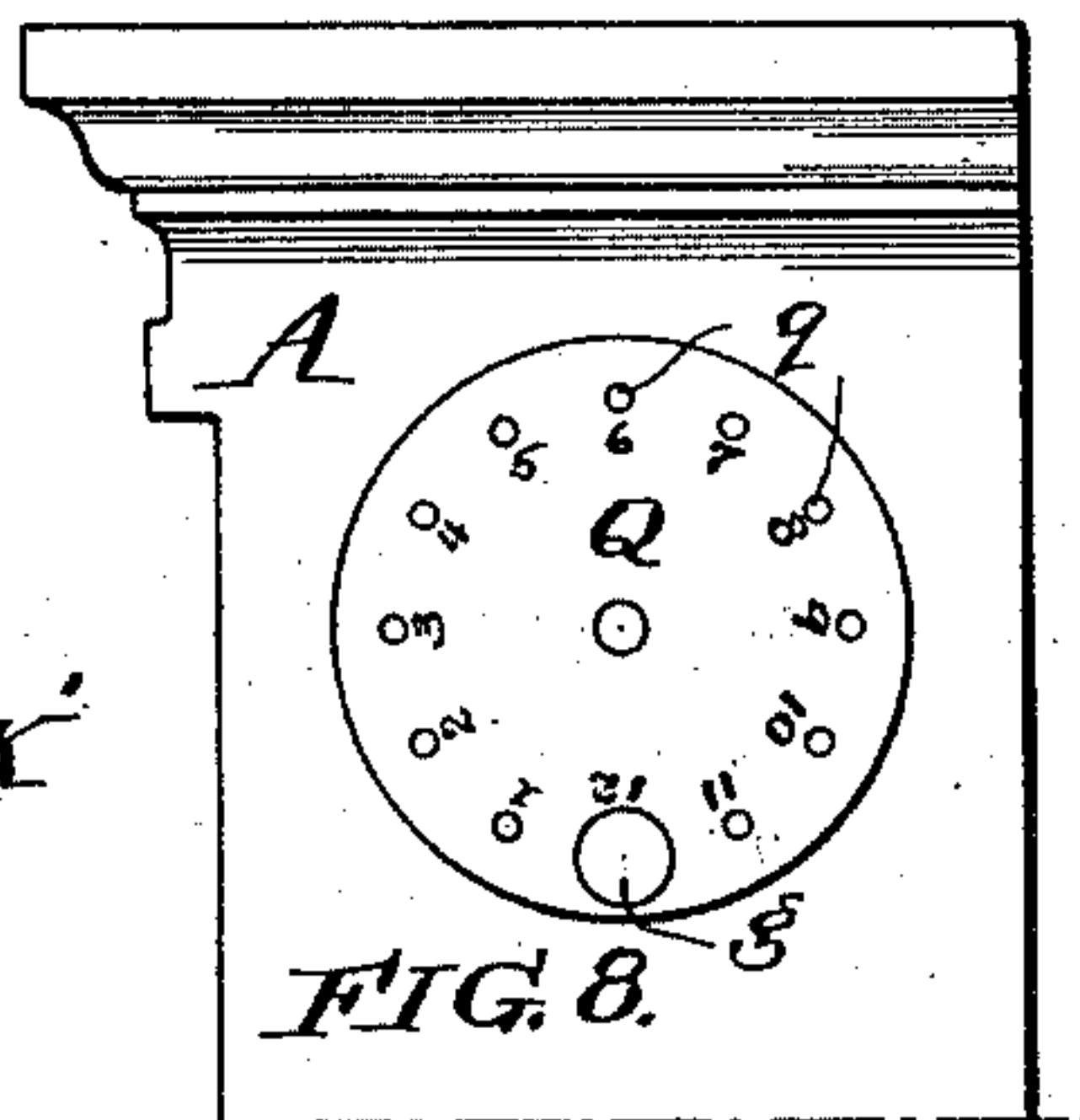
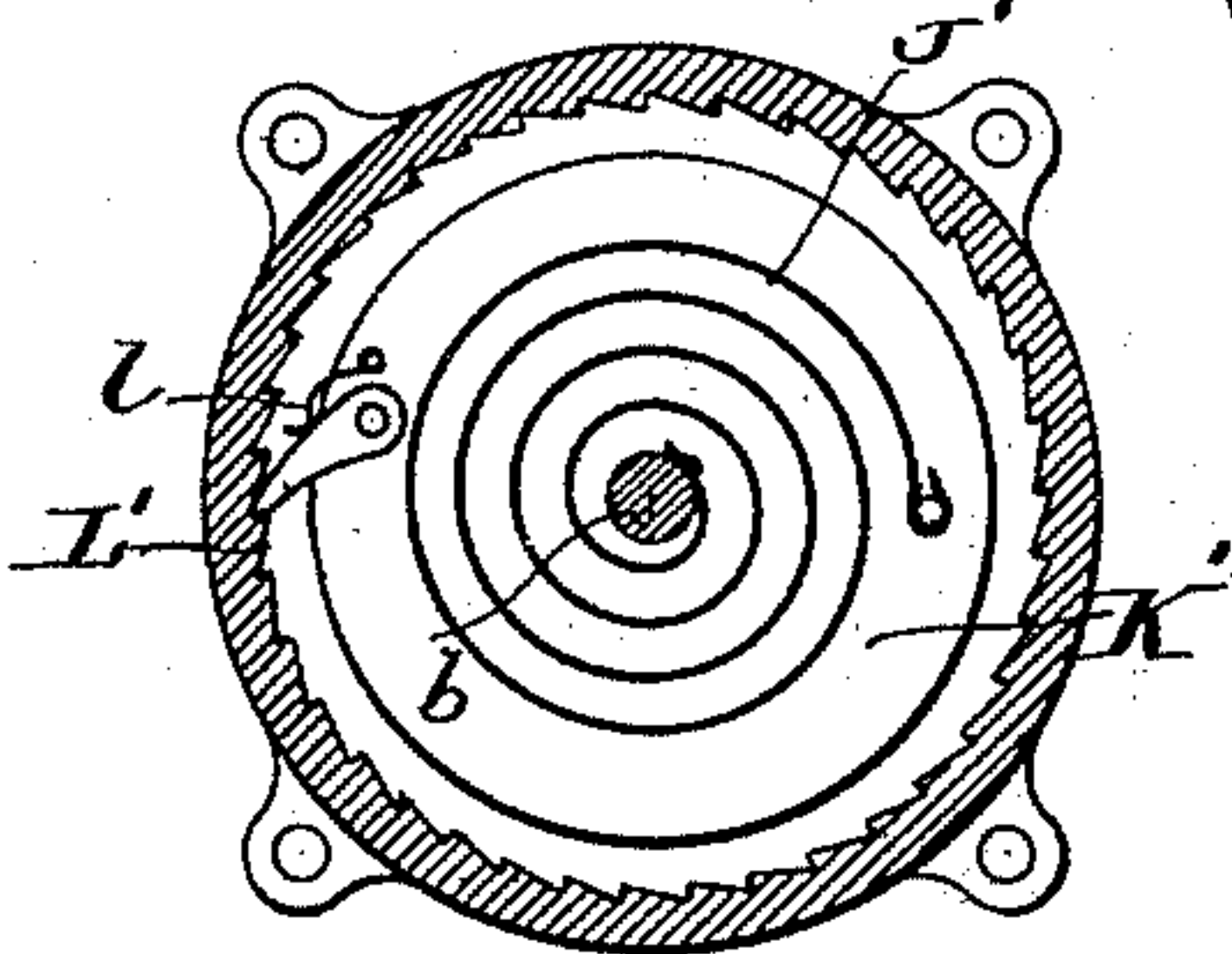


FIG. 11.

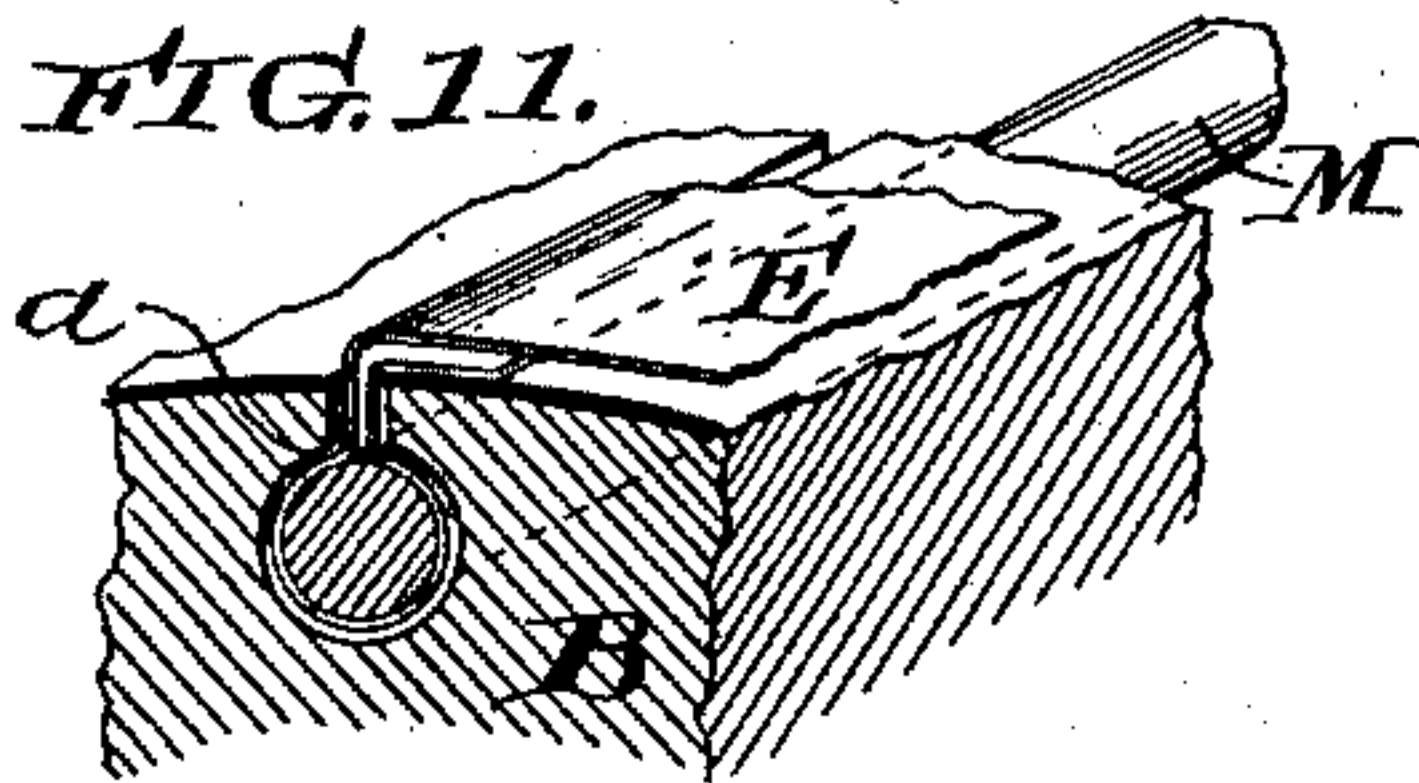


FIG. 12.

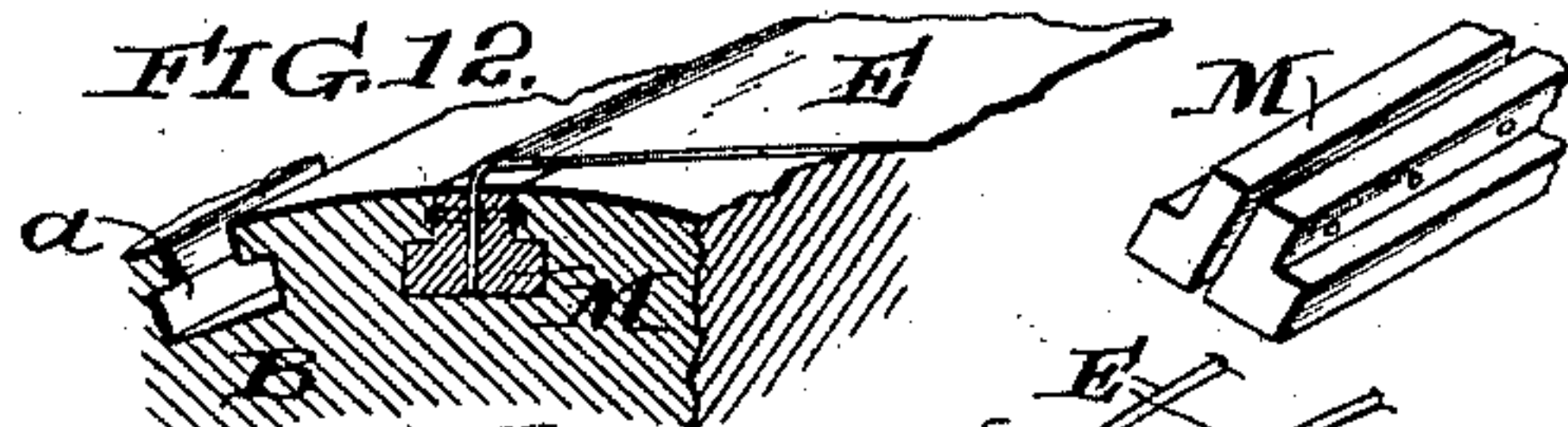


FIG. 15.

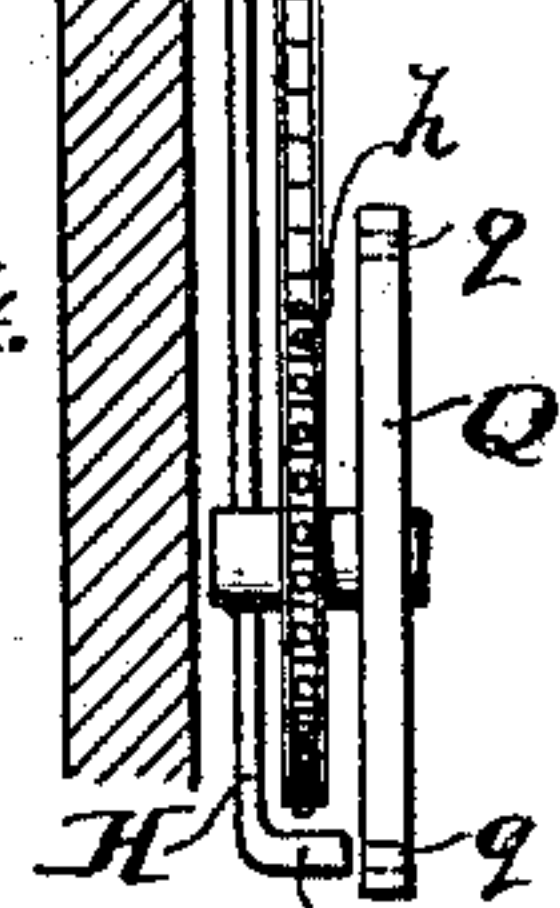


FIG. 13.

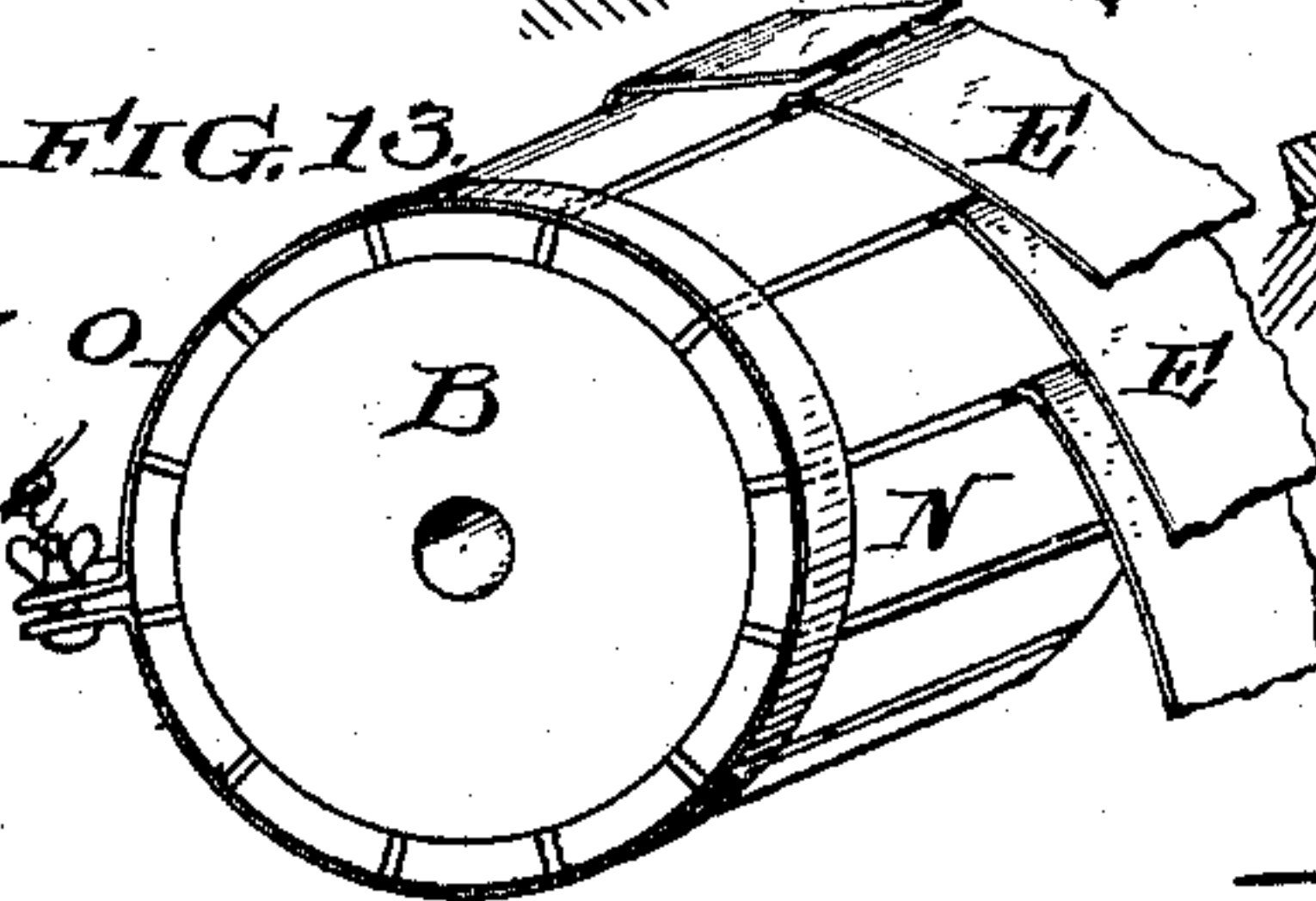
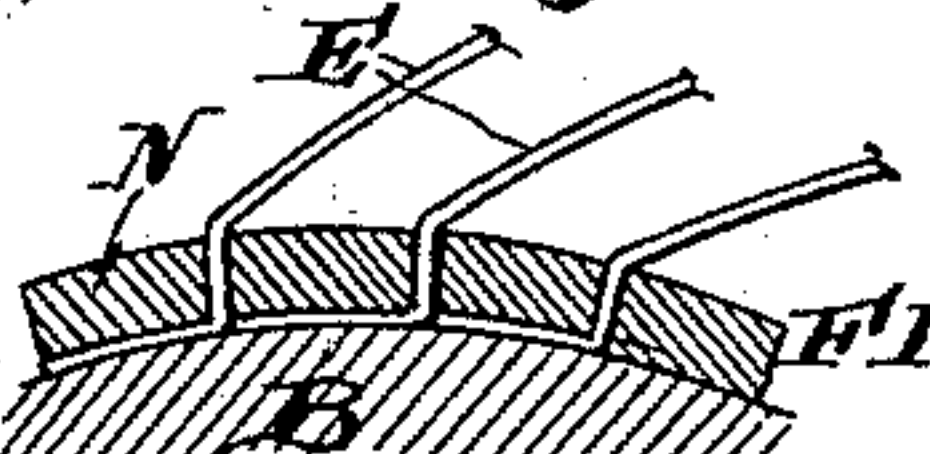


FIG. 14.



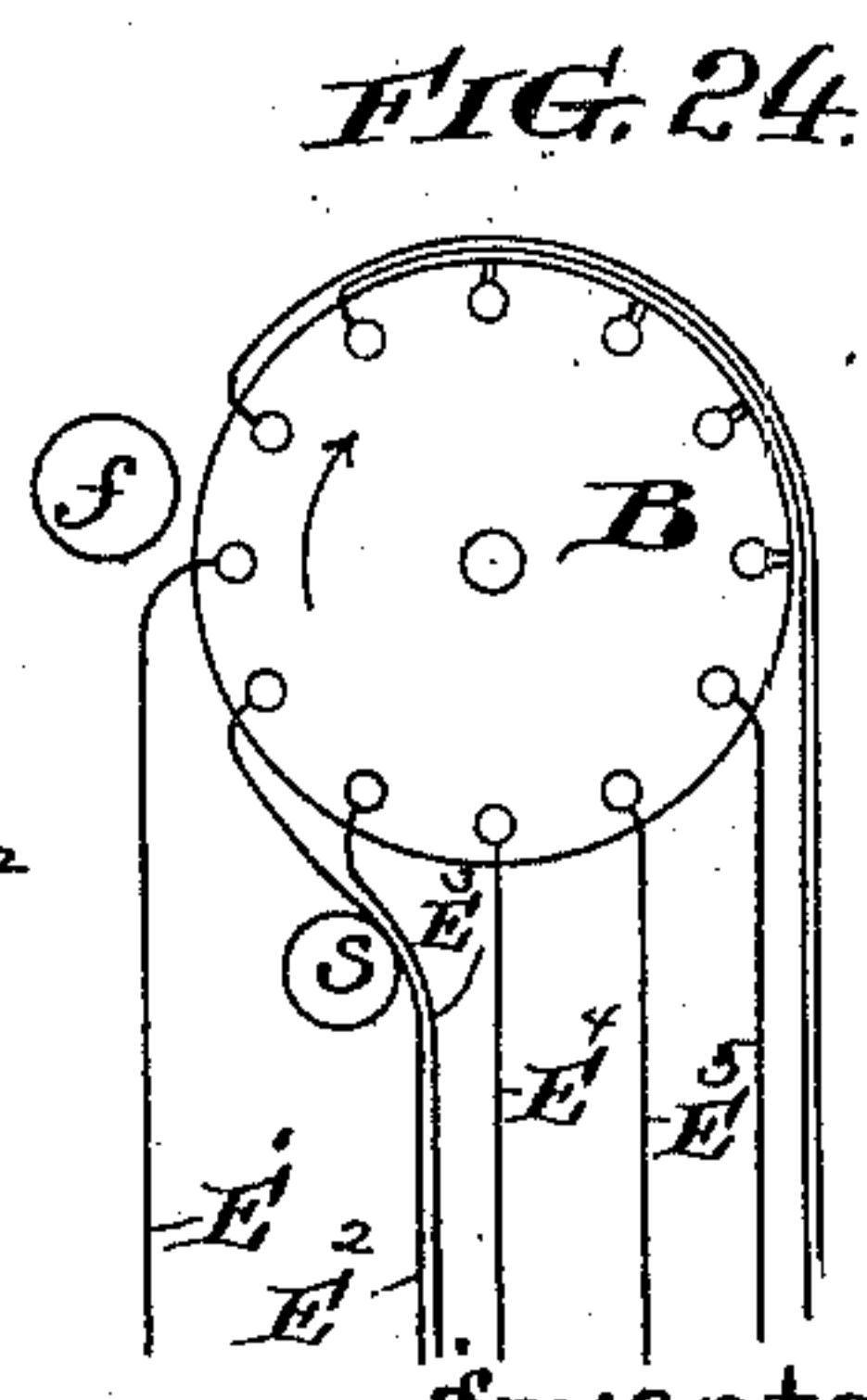
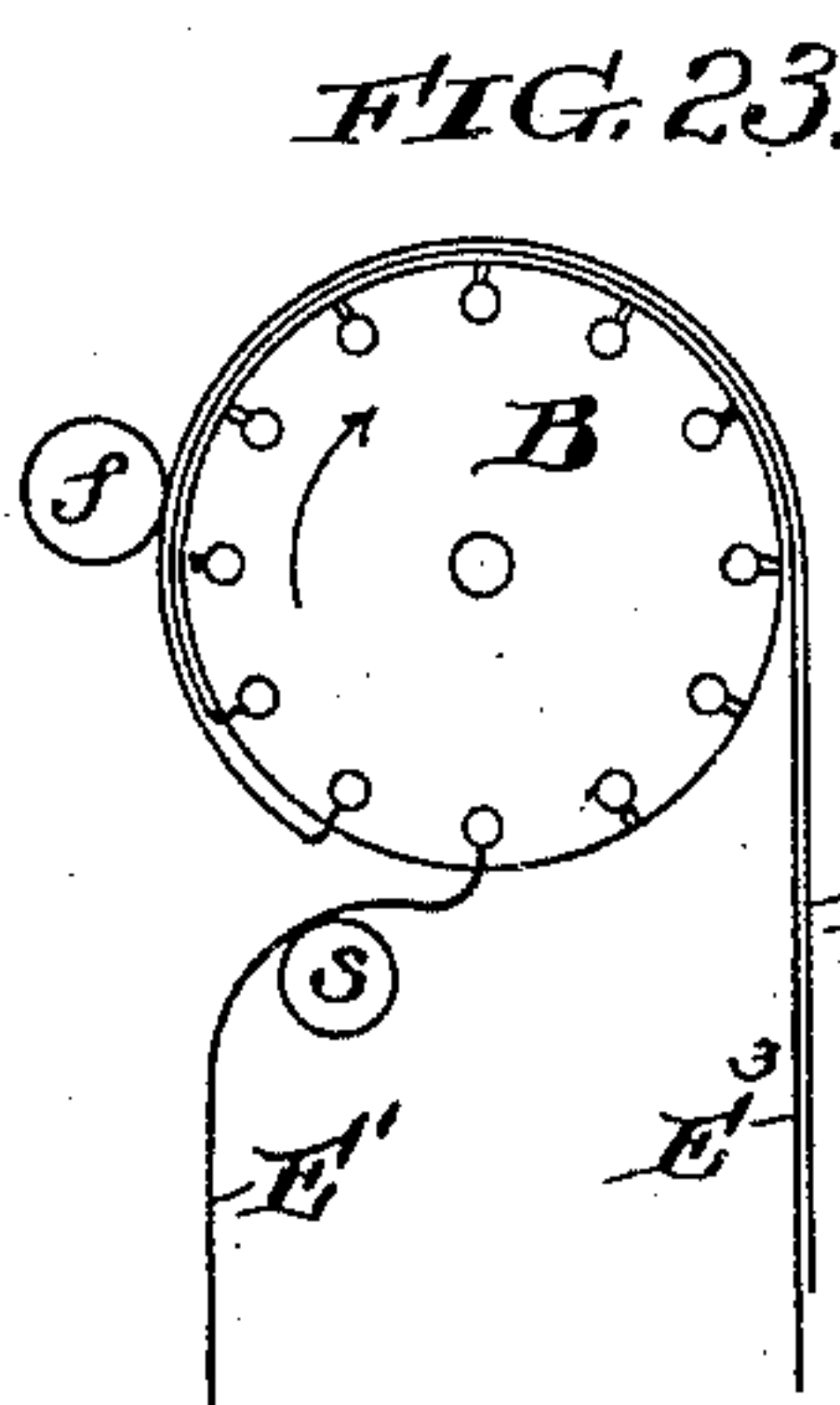
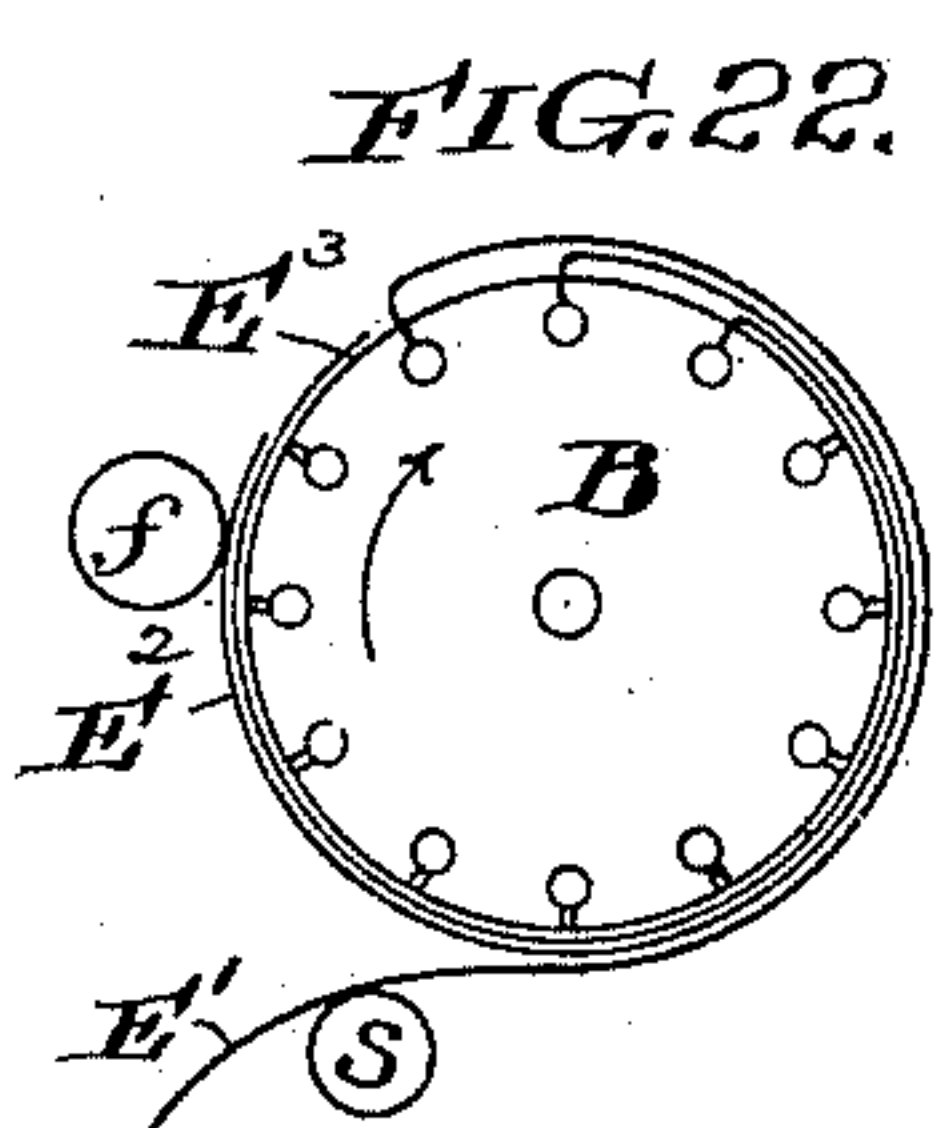
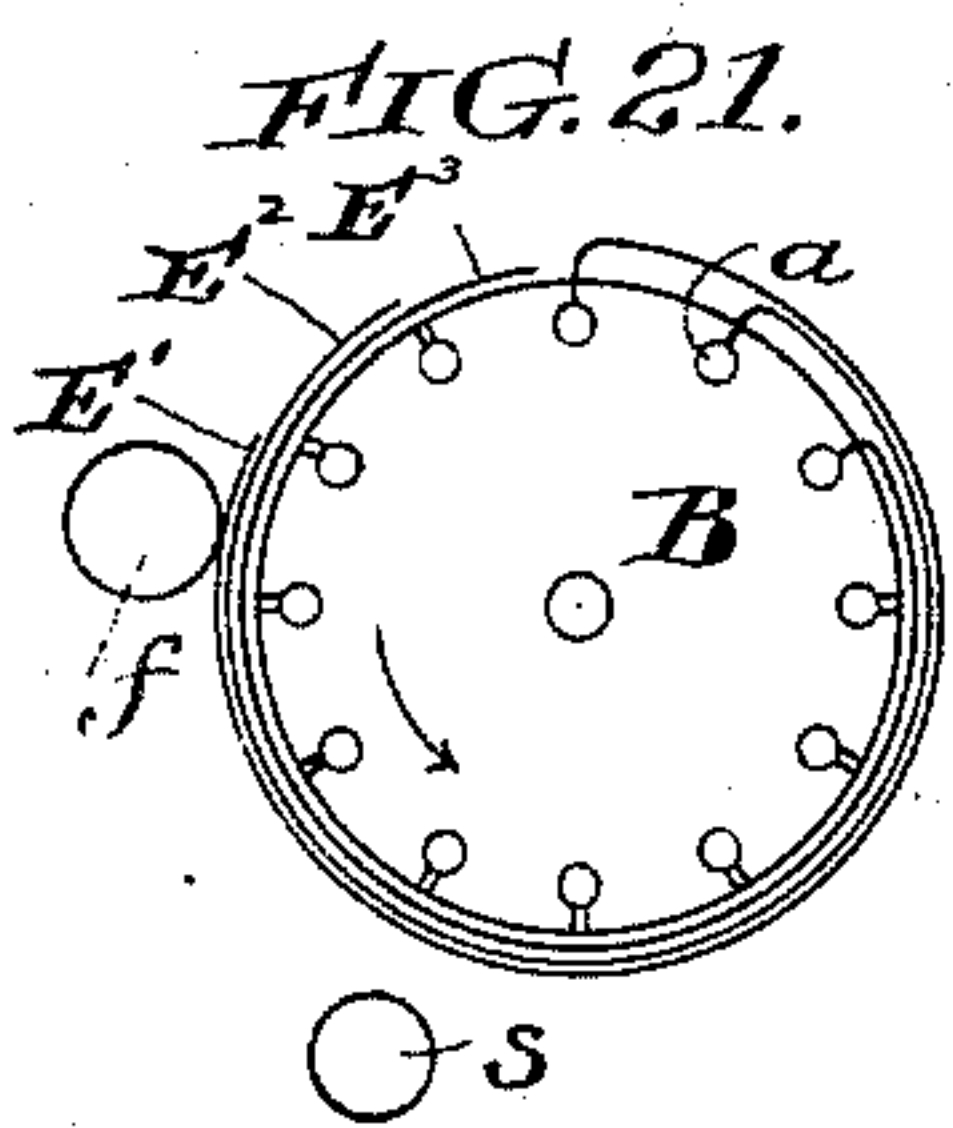
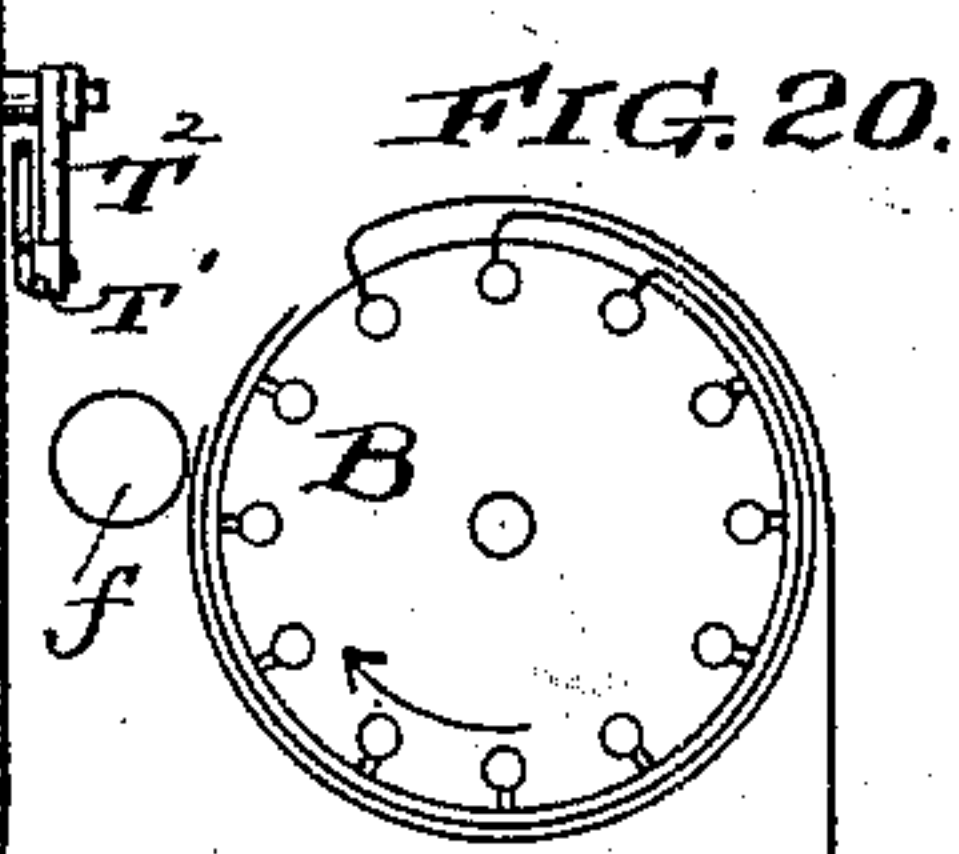
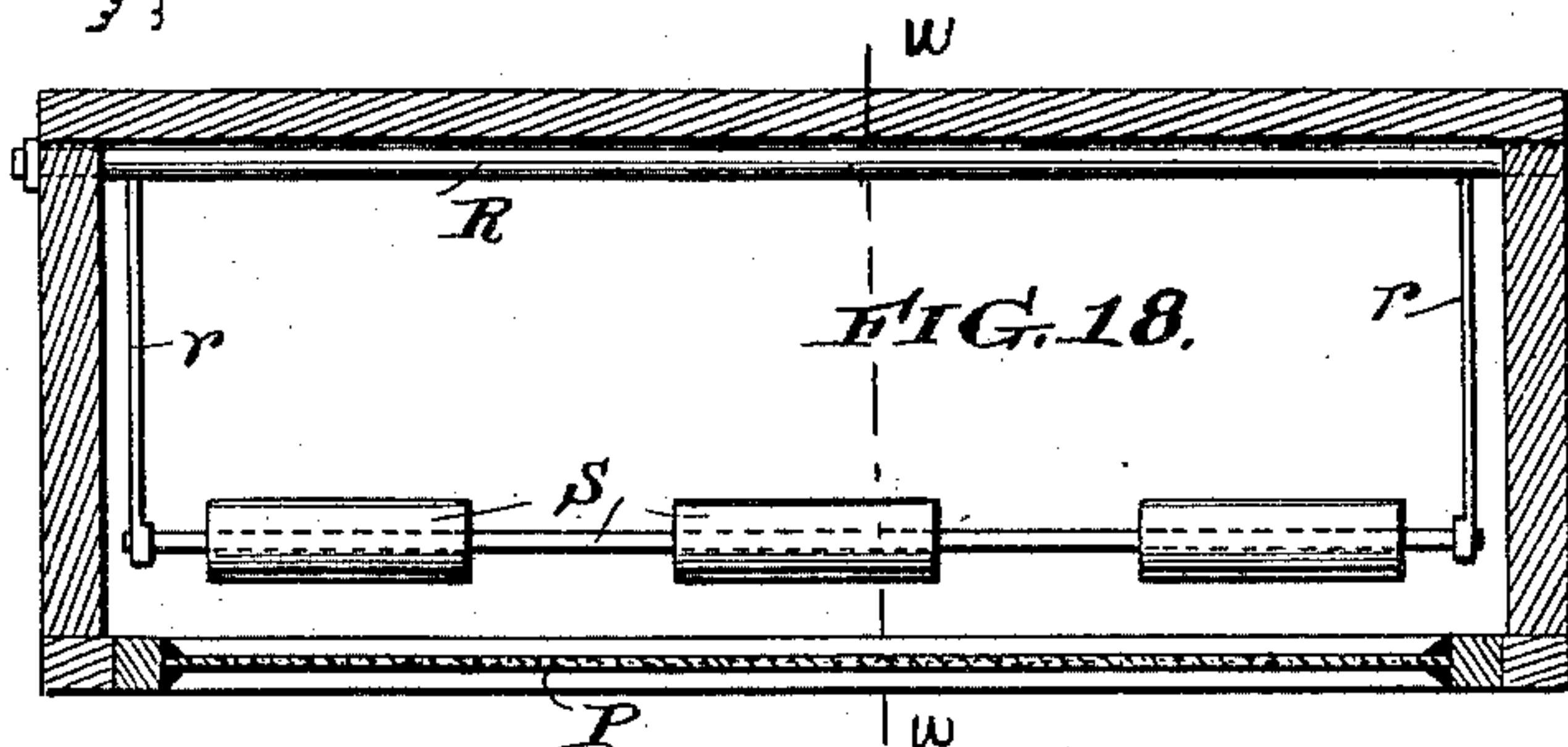
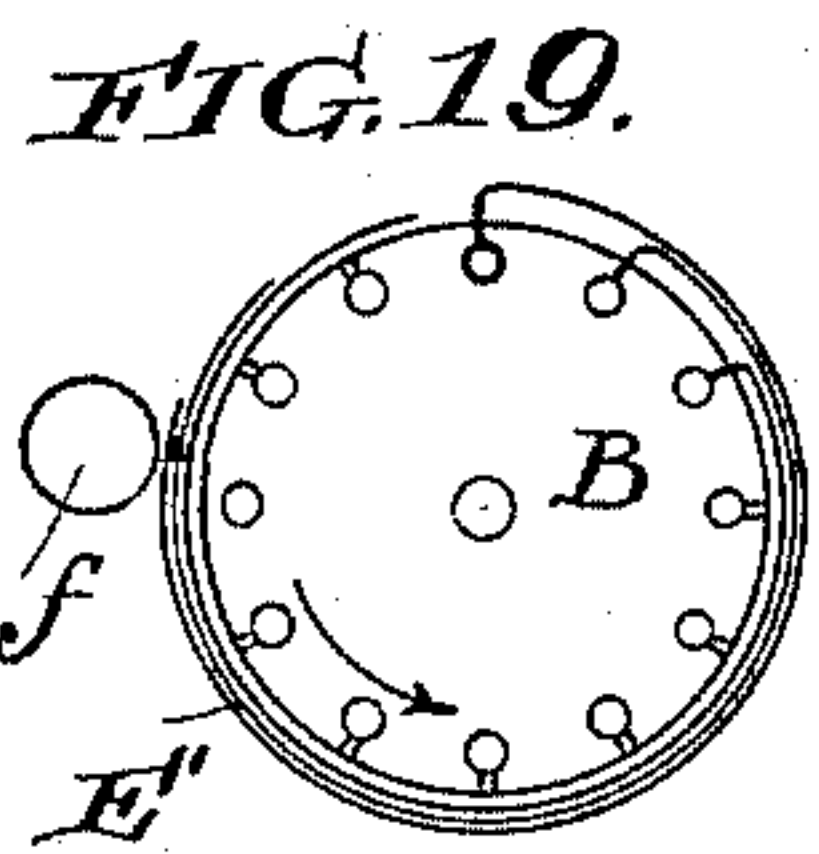
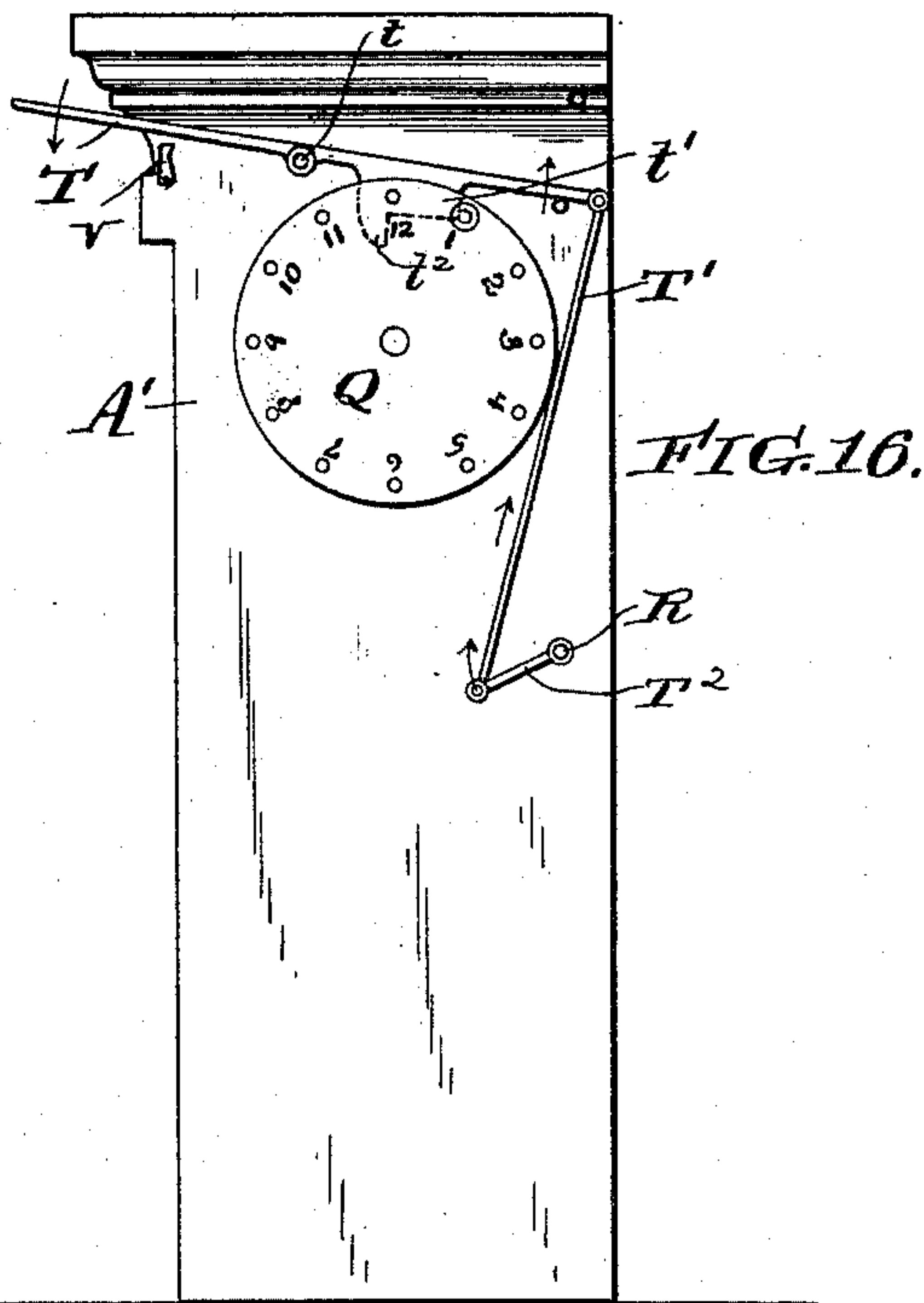
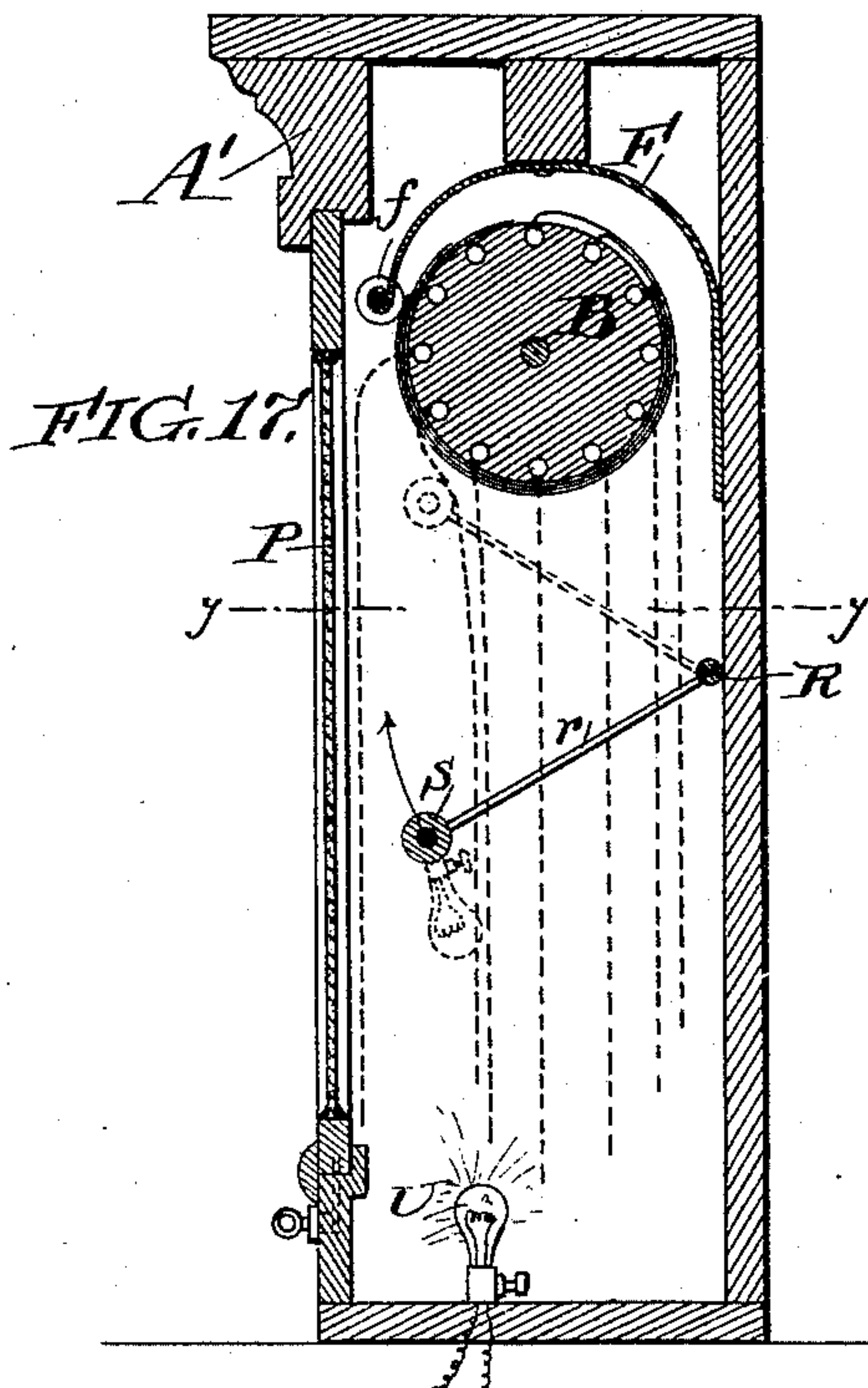
Witnesses:  
Henry D. Dwyer  
C. M. Dietterich

Inventor:  
Chas. S. Jenkins  
By his atty  
*[Signature]*

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EXHIBITING APPARATUS.

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Witnesses:

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Inventor:

Chas S. Jenkins  
By *[Signature]*



# UNITED STATES PATENT OFFICE.

CHARLES S. JENKINS, OF LANSDALE, PENNSYLVANIA.

## EXHIBITING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 473,508, dated April 26, 1892.

Application filed September 24, 1891. Serial No. 406,637. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES S. JENKINS, of the town of Lansdale, Montgomery county, and State of Pennsylvania, have invented an  
5 Improvement in Exhibiting Apparatus, of which the following is a specification.

My invention relates to exhibiting apparatus; and it consists of certain improvements which are fully set forth in the following  
10 specification and are shown in the accompanying drawings, which form a part thereof.

More particularly my invention relates to certain improvements upon exhibiting apparatus of the character shown in the Patent of  
15 the United States No. 403,673, granted to me on the 21st day of May, A. D. 1889. In that apparatus a series of sheets are connected each at one edge with a rotatable drum or support, so that the outer or free edges of the  
20 sheets will project one beyond the other when the sheets are wound up. By rotating this drum or support in one direction any desired sheet may be brought to the front, and by then reversing the rotation of the drum all  
25 the sheets may be unwound and permitted to hang down, with the desired sheet in front, so as to be exposed to view.

The present invention includes certain improvements in the manner of attaching the  
30 series of sheets to the rotary drum so that any sheet may be easily detached or removed, if desired. By this means the sheets may be changed whenever desired.

My invention also includes the employment  
35 of compensating devices in connection with the rotary drum to compensate for the variation in weight acting upon the drum due to the rolling up and unrolling of the sheets. When the sheets consist of large and heavy  
40 charts or maps, this variation in the weight of the amount unrolled is considerable.

My invention also includes certain means for easily and positively bringing a desired sheet into proper position and exposing it to  
45 view.

My invention also relates to devices for illuminating the exposed sheet and to the construction and arrangement of the apparatus whereby it may be conveniently employed  
50 in stations, &c., for indicating the arrival and departure of trains, vessels, &c.

My invention also includes other improve-

ments in construction and combination of parts, all of which are fully described herein after and claimed.

In the drawings, Figure 1 is a front elevation of my improved exhibiting apparatus. Fig. 2 is a plan view of the same. Fig. 3 is an end elevation of the same. Fig. 4 is a vertical sectional view of the same on the line  $x x$  of  
55 Fig. 2 on an enlarged scale. Fig. 5 is a detail view of the rotary ratchet which is connected with the compensating spring. Fig. 6 is a front view of the apparatus adapted for indicating railway-trains, &c. Fig. 7 is a vertical  
60 sectional view of the same on the line  $y y$  of Fig. 6. Fig. 8 is an end elevation of a portion of the same, showing the dial by means of which the desired sheet may be brought to the front without examining or inspecting the po-  
65 sitions of the sheets within the inclosing case. Fig. 9 is a front elevation of a portion of the supporting-drum and of the devices for rotating it, illustrating a modification therein. Fig. 10 is a view similar to Fig. 5, illustrating  
70 a modification of the compensating spring devices. Fig. 11 is a perspective view of a portion of the supporting-drum, showing one manner of attaching the sheets thereto. Figs.  
75 12 and 13 are similar views showing modifications of the manner of attaching the sheets to the drum. Fig. 14 is a cross-sectional view of a portion of Fig. 13. Fig. 15 is a perspective view of a portion of that form of the clamping device which is shown in Fig. 12 for  
80 holding the sheet on the drum. Fig. 16 is an end elevation of the apparatus similar to that shown in Fig. 6 with the devices for illuminating the sheet applied thereto. Fig. 17 is a vertical sectional view of the same on the  
85 line  $y y$  of Fig. 18. Fig. 18 is a horizontal sectional view on the line  $z z$  of Fig. 17, and Figs. 19, 20, 21, 22, 23, and 24 are diagrams illustrating the manner in which a desired sheet is brought into position and exposed to  
90 view.

A is the frame or bracket in which is journaled the shaft  $b$  of the rotary drum or cylinder B.

C is a sheave connected with the drum or  
95 cylinder B, over which passes the endless cord or band D. This endless band or cord D may be guided below by a roller carried by a spring-wire H. The wire H may be de-



tachably connected with the frame A or other stationary part and acts as a spring to hold the cord D taut. The drum or cylinder is rotated by means of this cord or band D and sheave C. Other convenient means may, however, be employed for rotating the drum. In Fig. 9 is shown a construction in which there is a sprocket-wheel *c* upon the end of the shaft *b* and a second sprocket-wheel *h* carried by the wire H, with a chain I between the sprocket-wheels.

E are the sheets which are carried by the drum or cylinder B and which are to be exposed to view one at a time.

F is a curved guide arranged above and in the back of the cylinder or drum to guide the free edges when the sheets are wound up upon the cylinder. Carried by the guide F are the rollers *f*, which, by means of springs G, bearing upon the edge of the guide E, are pressed in contact with the cylinder or drum.

J is a compensating spring, preferably arranged in the top of the frame A, as is shown in Figs. 1 and 2, and connected by the band *j* with a drum K, loosely mounted upon the shaft *b*. J<sup>2</sup> is a guide for the band *j*. Carried by this drum K is a ratchet-disk L, the teeth of which are engaged by a spring-pawl *l*, carried by the drum or cylinder B. This pawl *l* is arranged to engage the ratchet-teeth only when the cylinder B is rotated in the direction to unroll the sheets E and does not engage the ratchet-teeth when the cylinder is rotated in the opposite direction. When the sheets are rolled up upon the cylinder or drum and the latter is rotated, there is no movement of the ratchet-disk L, and consequently no compression of the spring J. When, however, the drum or cylinder B is rotated in the other direction and the sheets E begin to unroll therefrom, the pawl *l* engages the ratchet-disk L and turns it, winding the band *j* upon the drum K and correspondingly compressing the spring J. The compression of the spring J continues with the unrolling of the sheets and is proportional to the extent to which they are unrolled, so that it compensates for the weight of the amount unrolled, and thus prevents that weight from causing the drum or cylinder to rotate with undue rapidity or without the continued action of the cord D or of such other devices as may be employed for operating the drum or cylinder. When the rotation of the drum is reversed to roll up the sheets E, the ratchet-disk L turns with the drum and correspondingly relieves the tension of the spring J. While I prefer this construction of the compensating devices, it is apparent that they may be arranged differently, if desired, while still accomplishing the same object.

In Fig. 10 I have shown a modification in the construction and arrangement. L' is a ratchet-disk fixed to the frame A. K' is a disk rotatable upon the shaft *b*, carrying the spring-pawl *l*. J' is a compensating spiral spring between the shaft *b* and the disk K'.

When the drum or cylinder rotates in one direction, the pawl *l* snaps over the teeth of the ratchet L' without winding up the spring. When, however, the direction of rotation is reversed, the pawl *l* engages the teeth of the ratchet and locks the disk K' against rotation, so that the spring J' is wound up, and thus compensates for the weight of the sheets E unrolled in the manner heretofore described.

For the purpose of detachably fastening the sheets E upon the drum or cylinder B, I form the latter with a series of longitudinal grooves *a*, having their interiors enlarged. In these interior enlargements of the grooves are inserted rods or bars M, having the end of the sheet passed about them. By this means the sheets are attached to the drum or cylinder, and any one thereof may be disconnected by drawing out the bar which carries it.

In Figs. 12 and 15 is shown a modification in which the bars M are divided longitudinally and the sheets are clamped between the two parts. Another modification is shown in Figs. 13 and 14, in which a series of longitudinal strips N are employed, with the edges of the sheets placed between them and the surface of the cylinder. These strips N are secured to the cylinder and clamped down upon the edges of the strips by means of end bands O and clamp *o*, Fig. 13. The rods or bars M or the strips N thus constitute clamping-pieces for detachably clamping the sheets upon the drum B.

In Figs. 1, 2, 3, and 4 I have shown my invention applied to an open bracket or support, which may be hung or fixed upon the wall of a room, office, or school-building. This form is particularly adapted for displaying large maps and charts and for displaying samples of paper, &c.

I shall now describe the invention as especially adapted for advertising purposes, station indications, &c., where it is desired to have the supporting drum or cylinder within a closed case or cover.

A' is a closed box or cover within which the shaft of the drum B is journaled, as in the bracket or support A.

P is a glass or sight-opening in the front of the box or case, through which the front sheet may be exposed to view. To bring a desired object into position upon the drum or cylinder without inspecting the sheets in the interior of the box, I employ a disk Q, carried upon the shaft *b* upon the exterior of the case A' and provided with a series of holes corresponding in number to the sheets upon the drum. Arranged upon the outside of the case is a stop Q', against which a pin *g*, inserted in one of the holes *q*, is adapted to strike to stop further rotation of the drum or cylinder in that direction. This stop is so adjusted with reference to the location of the holes *q* and the sheets E that when the pin in a hole of a certain number strikes the stop the end of the sheet E corresponding to that number will just have dropped from under the rollers



*f*, as is shown in diagram Fig. 20. Now by rotating the drum in the opposite direction the sheets are unrolled, with this desired sheet *E* in front immediately behind the glass or opening *P*, as is shown in Fig. 7. In Fig. 9 this disk *Q* is shown carried by the lower sprocket-wheel *h*. Such a construction would be preferable where the drum is to be located at an altitude.

10 In Figs. 16, 17, and 18 I have shown the same form of apparatus with means for illuminating the front sheet. *R* is a rod journaled in the back of the case *A'*, carrying arms *r r* adjacent to its ends, which support a transverse rod or roller *S*. *T* is a lever pivoted at *t* to the case *A'* and having its inner end connected by a link *T'* with a crank-arm *T<sup>2</sup>* of the rod *R*. The rod or roller *S* is normally in the lower portion of the case *A'* a distance  
20 below the drum or cylinder *B* as indicated in Fig. 17. By operating the lever *T* the rod or support may be raised into the position shown in the dotted lines in Fig. 17 adjacent to the drum or cylinder *B*. The arrows in Figs. 16  
25 and 17 show the direction of movement of the parts. *U* is a lamp or source of light, which may be arranged on the bottom of the case *A'* or may be carried by the rod or roller *S*, as indicated in dotted lines. *V* is a catch to hold the free end of the lever when it has been depressed. Carried by the lever *T* are two stops or projections *t' t<sup>2</sup>*, which are adapted to be successively struck by the pin or stop *g* in the dial *Q*. The stop *t'* is so located that  
35 when the pin *g* strikes it the sheet *E'* corresponding to the number of the hole in the dial *Q* in which the pin *g* is inserted will be just ready to pass from under the roller *f*, as shown in diagram Fig. 21.

40 I will now describe the operation of the apparatus. The roller *S* is normally in the position shown in Fig. 17 and the sheets *E* may pass over it when the drum *B* is rotated. The arms *r r* are separated a greater distance  
45 apart than the width of the sheets, so that they may hang between them. The pin *g* is inserted in the hole of the dial *Q* corresponding to the sheet which it is desired to expose to view. In the drawings it is shown inserted  
50 in hole No. 1, corresponding to the sheet *E'*. The dial *Q* and drum *B* are now rotated in the direction of the arrow in Fig. 29, rolling up the sheets upon the drum, as shown. When the pin *g* strikes the stop *t'*, the sheet *E'* is in the position shown in Fig. 19, with its end under the roller *f*. The lever *T* is now depressed, lifting the rod *S* adjacent to the drum  
55 *B*, as shown in Fig. 21. This movement also moves the stop *t'* out of the path of the pin *g* and brings the second stop *t<sup>2</sup>* in its path. The dial *Q* is now turned one point more until the pin *g* strikes the stop *t<sup>2</sup>*. The movement of the drum *B* causes the sheet *E'* to drop from under the roller *f* upon the rod or roller *S*, as  
65 shown in Fig. 22. Now when the dial *Q* is

rotated in the opposite direction the sheets are all unrolled, and the sheet *E'* is upon one side of the rod *S*, while the other sheets are upon the other side thereof and are held back by the rod, so as to permit the rays of light  
70 from the lamp *U* to fall directly upon the back of the sheet *E'* and thoroughly illuminate it. These last movements are as shown in Figs. 23 and 24. It will thus be seen that the rod *S* constitutes a movable separator that  
75 may be moved to and from the drum *B*.

While I prefer the minor details of construction which have been here shown, I do not limit my invention to them, as it is apparent that they may be modified in many  
80 ways without departing from it.

What I claim as new, and desire to secure by Letters Patent, is—

1. In exhibiting apparatus, the combination of a rotary shaft, a drum fast to said shaft, a  
85 series of sheets carried by the drum and adapted to be rolled upon the drum and unrolled therefrom when the shaft is rotated, a pawl-and-ratchet device having one member thereof carried by the drum and positively  
90 moved therewith and the other member loosely journaled upon the shaft, a compensatory spring, and a flexible connection between the compensatory spring and the member of the pawl-and-ratchet device, which is loosely car-  
95 ried by the rotary shaft, whereby when the shaft and its drum are positively rotated to unroll the sheets the fast member of the pawl-and-ratchet device is also rotated with the drum and shaft and the flexible connection  
100 is wound up thereon to increase the tension upon the compensatory spring and thus compensate for the weight of the sheets that have been unrolled.

2. In exhibiting apparatus, the combination  
105 of a rotary drum having a series of sheets attached thereto so that their ends overlap when the sheets are wound up, a lamp, and a movable separating-rod movable to and from the rotary drum to hold back all of the sheets  
110 but one away from the rays of the light from the lamp.

3. In exhibiting apparatus, the combination of a rotatable drum having a series of longitudinal grooves and a series of detachable  
115 clamping-pieces, each made in two parts, to clamp a sheet between the parts and adapted to be received in the grooves of the drum.

4. In an exhibiting apparatus, the combination of a rotary drum having its periphery  
120 provided with a series of longitudinal grooves having an enlarged internal diameter with a contracted opening, a series of sheets, and a series of clamping-pieces adapted to be received in the enlarged portions of said grooves  
125 to hold the sheets therein.

5. In an exhibiting apparatus, the combination of a rotary drum, a series of sheets attached thereto so that the ends overlap when the sheets are wound up, a dial connected with  
130



said drum, so as to rotate therewith, provided with a series of openings or apertures corresponding to the number of the sheets, a pin adapted to be inserted in said holes, and a  
5 stop in the path of said pin.

6. In an exhibiting apparatus, the combination of a rotary drum having a series of sheets attached thereto so that the ends overlap when the sheets are wound up, a rotary dial  
10 connected with said drum, so as to rotate therewith, a pin carried by said dial, and a stop in the path of the pin to arrest the rotation of the dial and drum at any desired position.

7. In exhibiting apparatus, the combination  
15 of a rotary drum, a series of sheets carried thereby so that the ends overlap when the sheets are wound up, a dial Q, carried by said drum, a fixed stop Q', adjacent to the dial, and a movable pin carried by the dial and  
20 adapted to be moved so as to strike the stop when the dial is rotated to arrest the drum in a desired position.

8. In an exhibiting apparatus, the combination of a rotary drum having a series of sheets  
25 attached thereto so that their ends overlap when the sheets are wound up, a lamp, a movable separating-rod, and mechanism to move said rod to and from the drum to hold back

all the sheets but one away from the rays of light from the lamp. 30

9. In an exhibiting apparatus, the combination of a rotary drum having a series of sheets attached thereto so that their ends overlap when the sheets are wound up, a lamp, a separating-rod S, a lever to raise said rod to and  
35 from the drum, the dial Q, pin g, and stops t' t<sup>2</sup>.

10. In an exhibiting apparatus, the combination of a closed case having a sight-opening, a lamp within said case, a rotary drum, a series of sheets attached to said drum so that  
40 their ends overlap when the sheets are wound up, a separating-rod S, a lever T, connections between said lever and rod S, whereby the latter may be moved to and from the drum, a rotary dial connected with said drum, so as  
45 to rotate therewith, a pin g, carried by the dial, and stops t' t<sup>2</sup>, carried by the lever T and adapted to be moved successively in the path of the pin g.

In testimony of which invention I have 50 hereunto set my hand.

CHARLES S. JENKINS.

Witnesses:

SYL. JENKINS,

WILSON H. GODCHALL.