

(No Model.)

C. DE QUILLFELDT.  
SPRING CURTAIN ROLLER.

No. 271,691.

Patented Feb. 6, 1883.

Fig. 1.

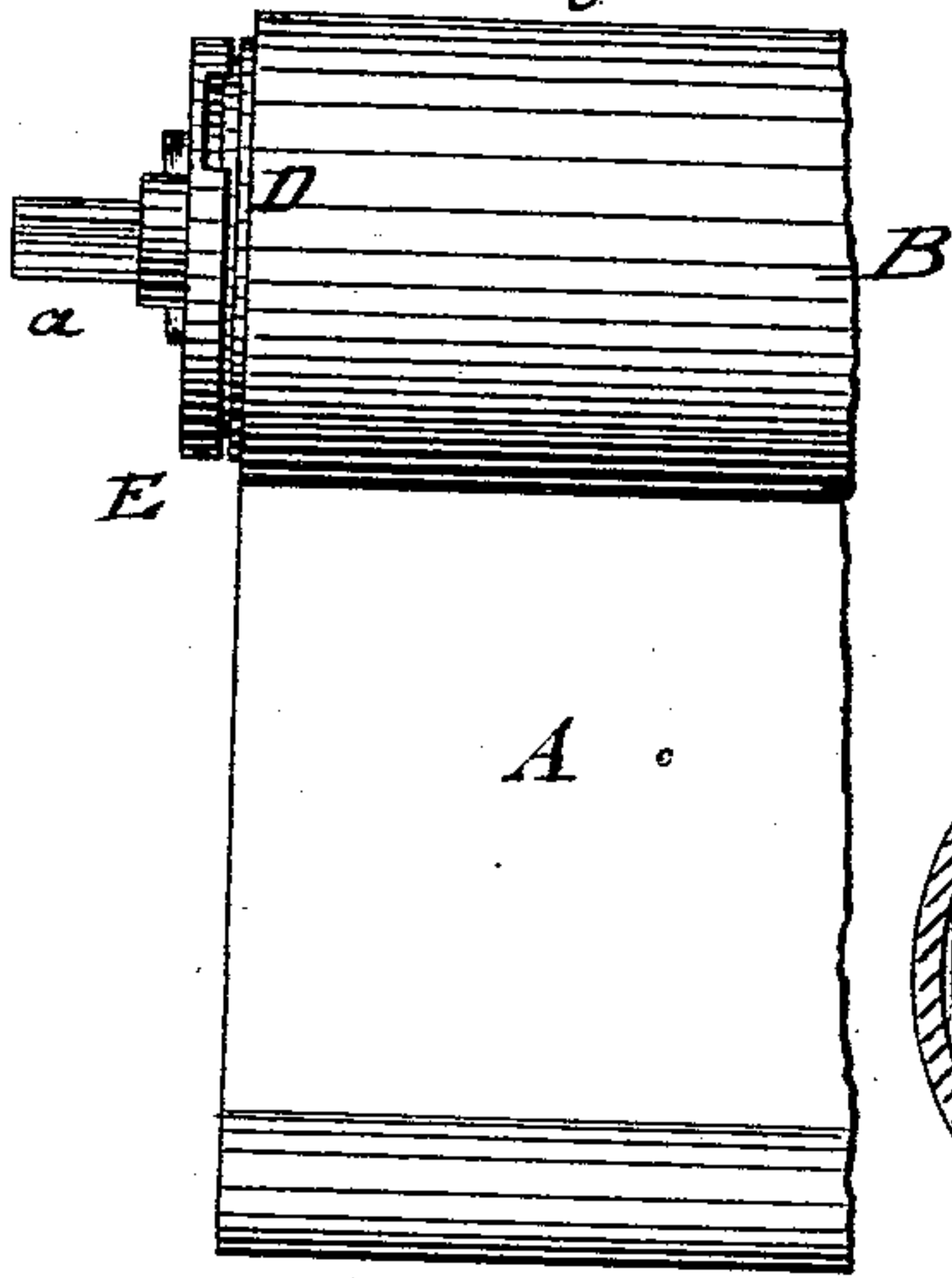


Fig. 2.

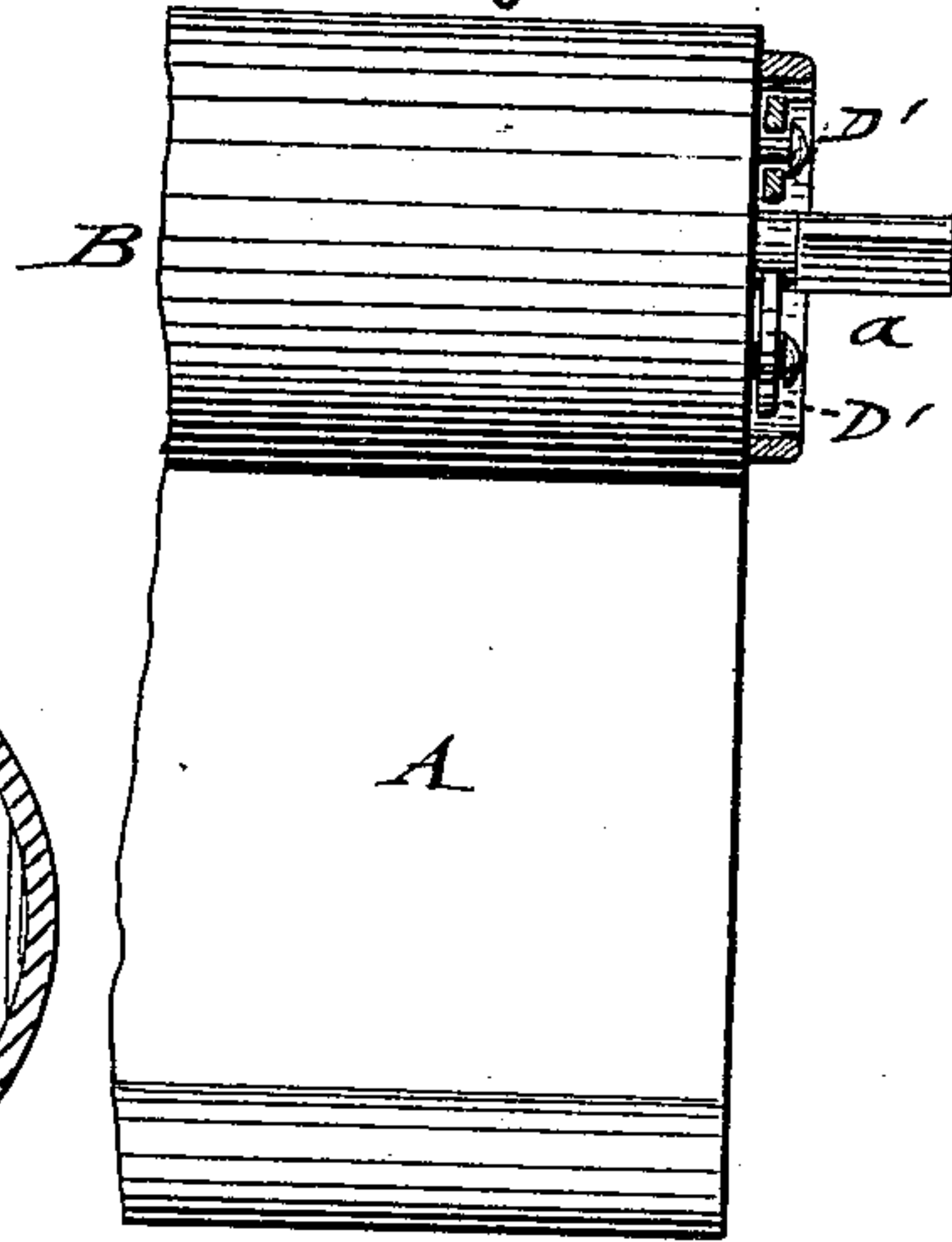


Fig. 3.

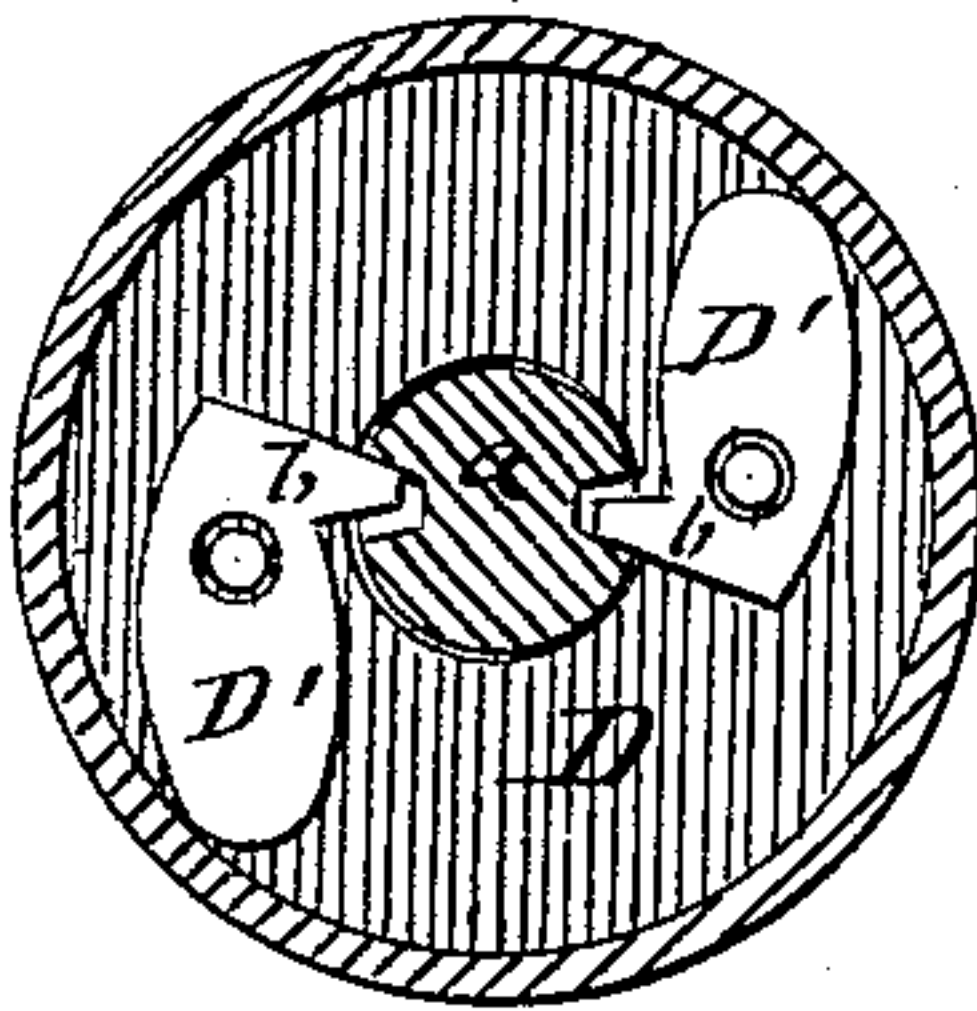


Fig. 4.

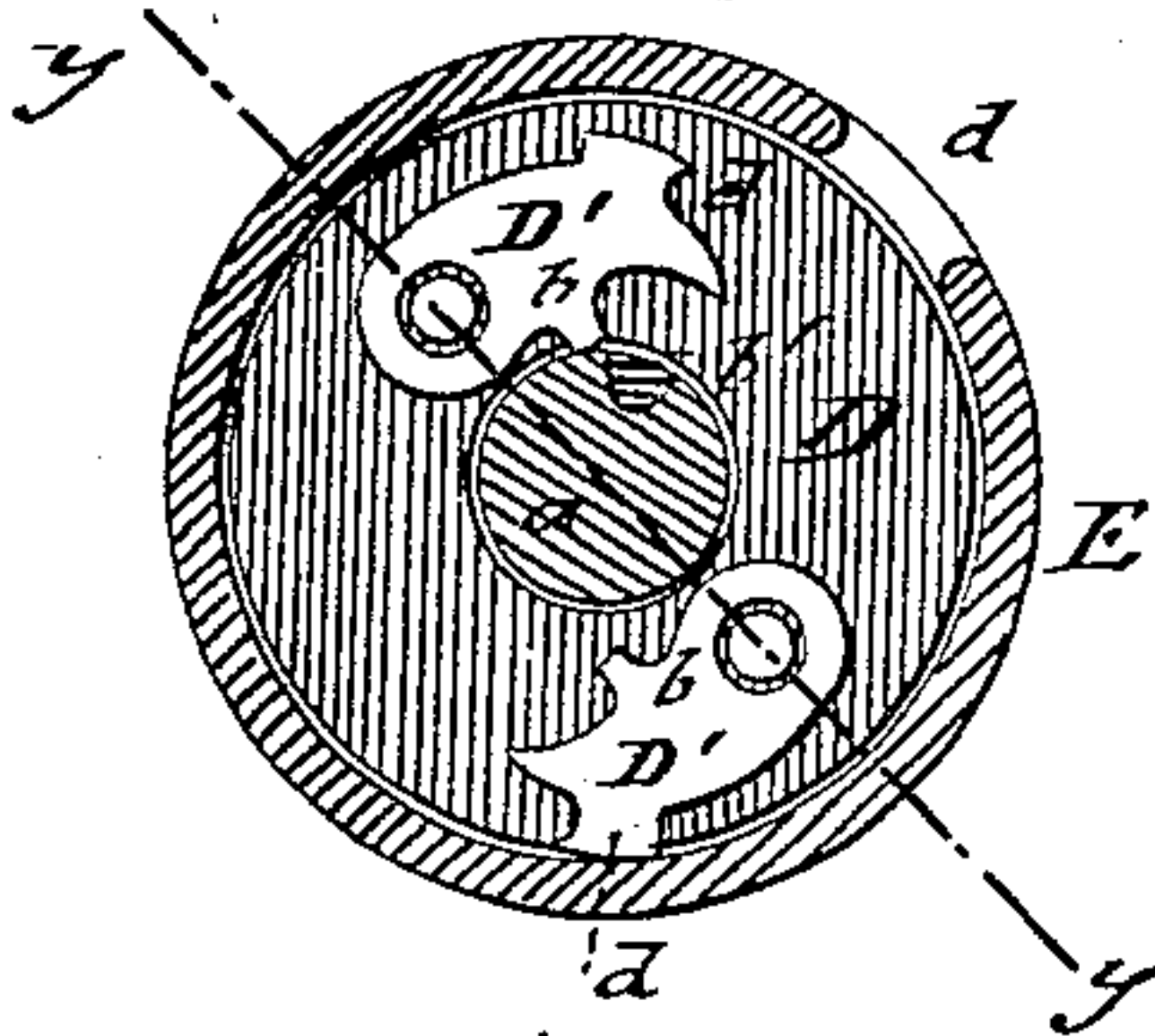


Fig. 5.

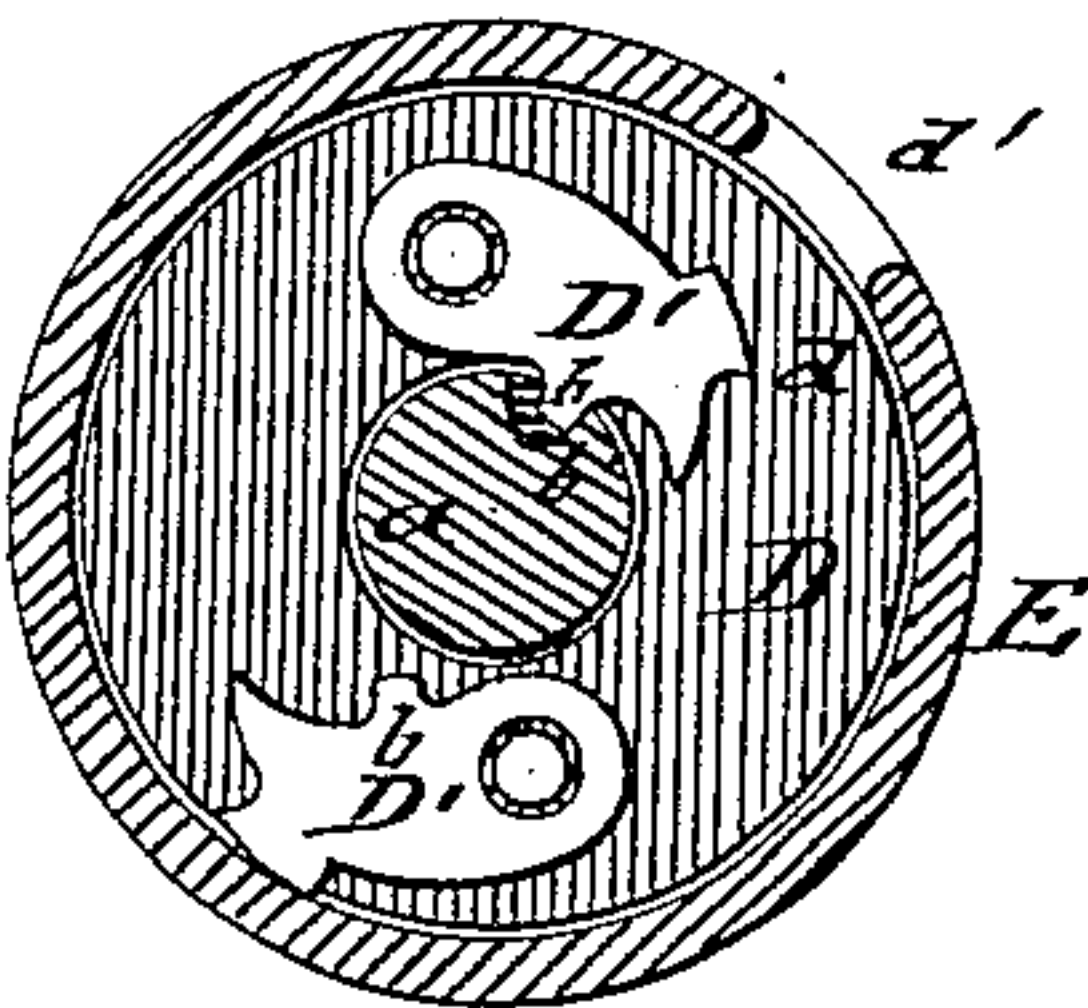


Fig. 6.

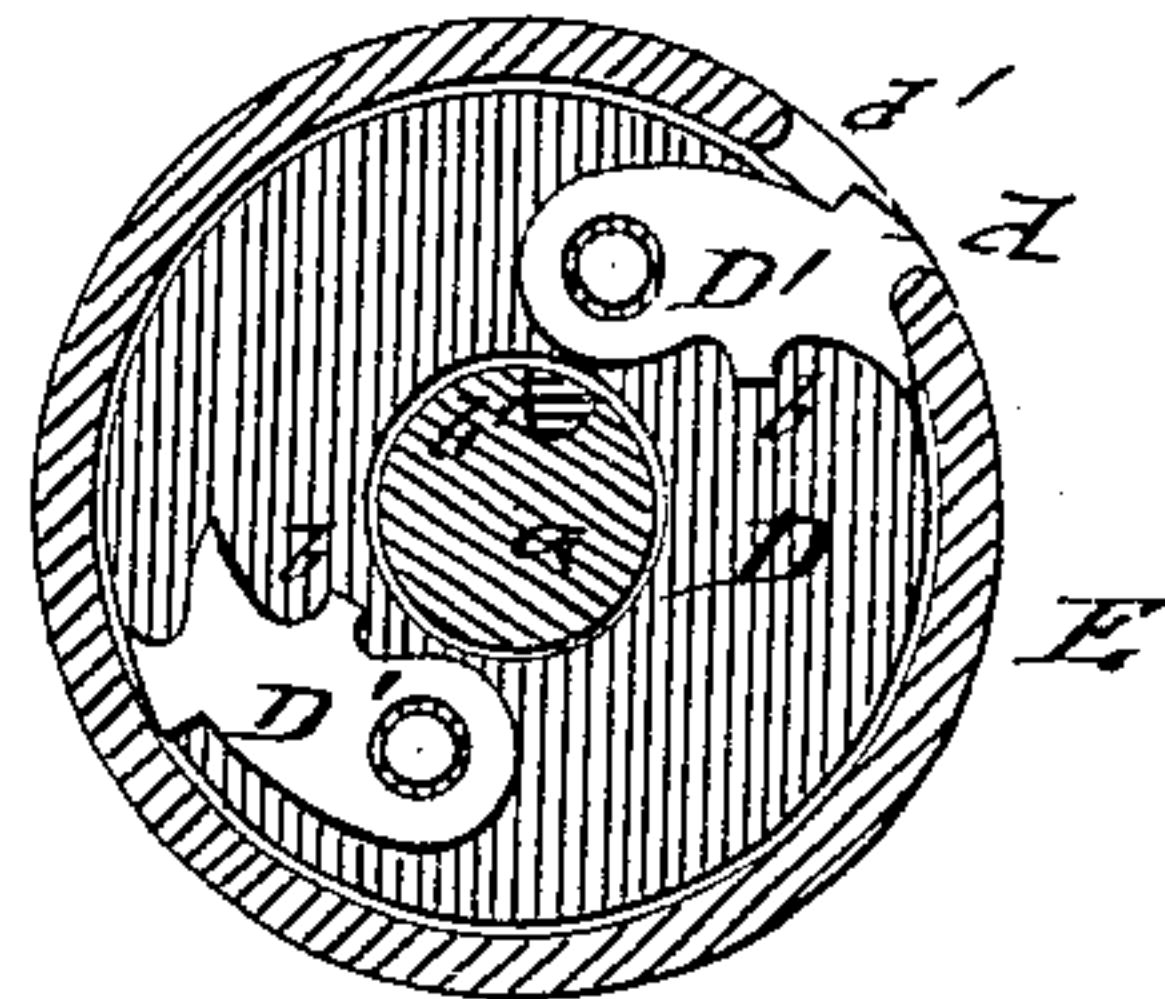


Fig. 7.

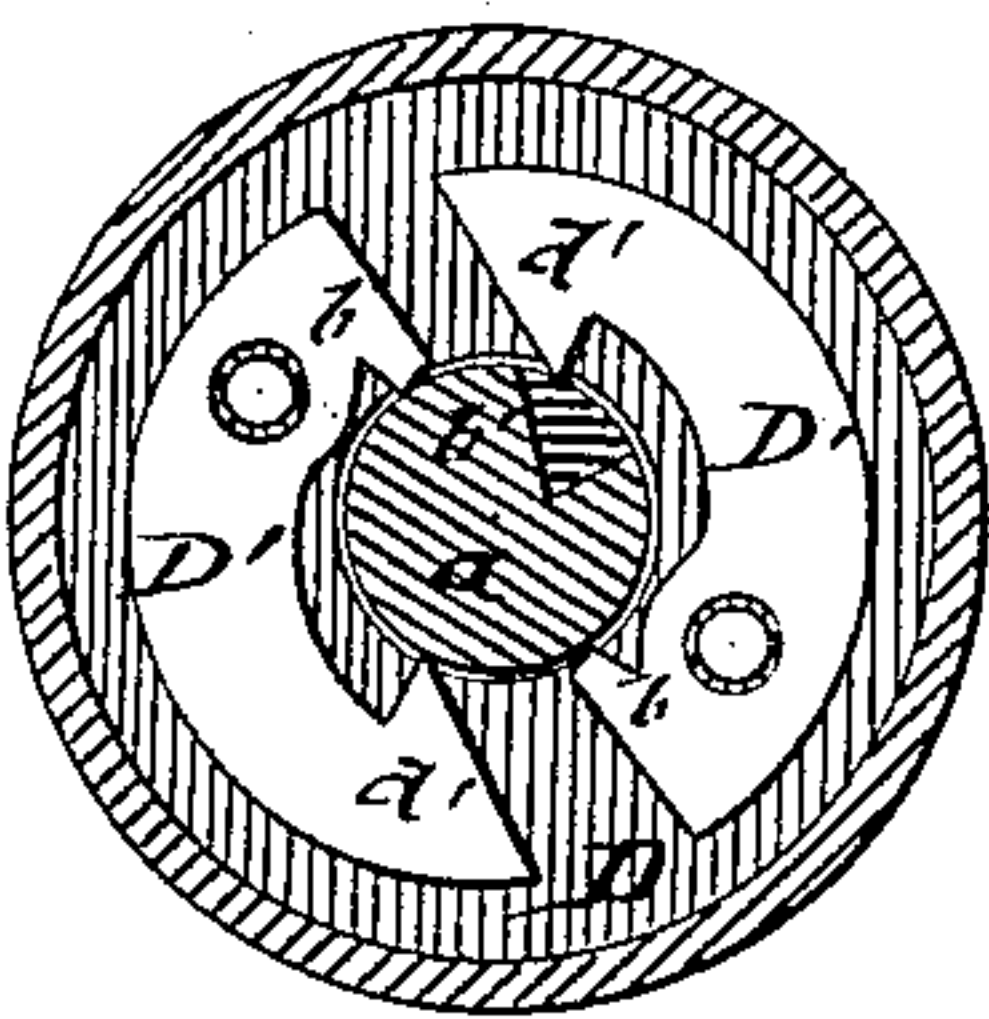


Fig. 8.

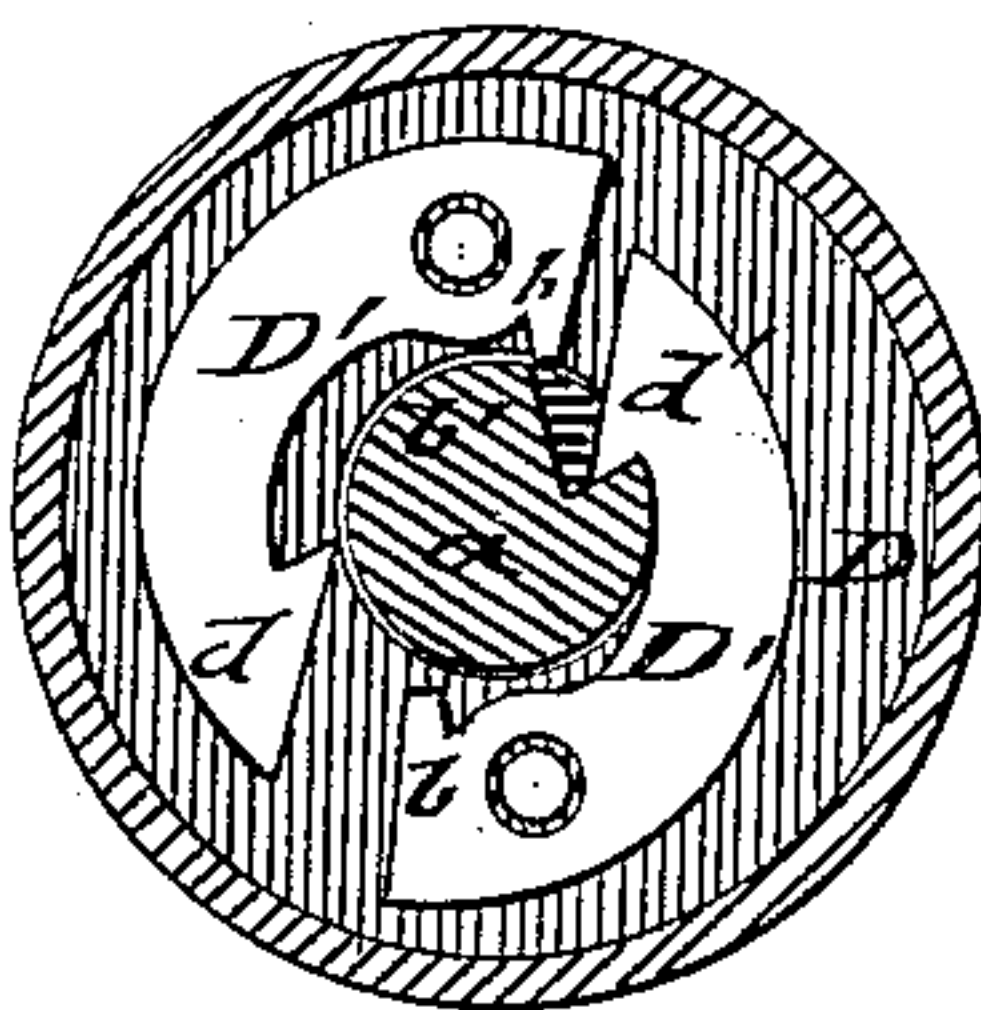


Fig. 9.

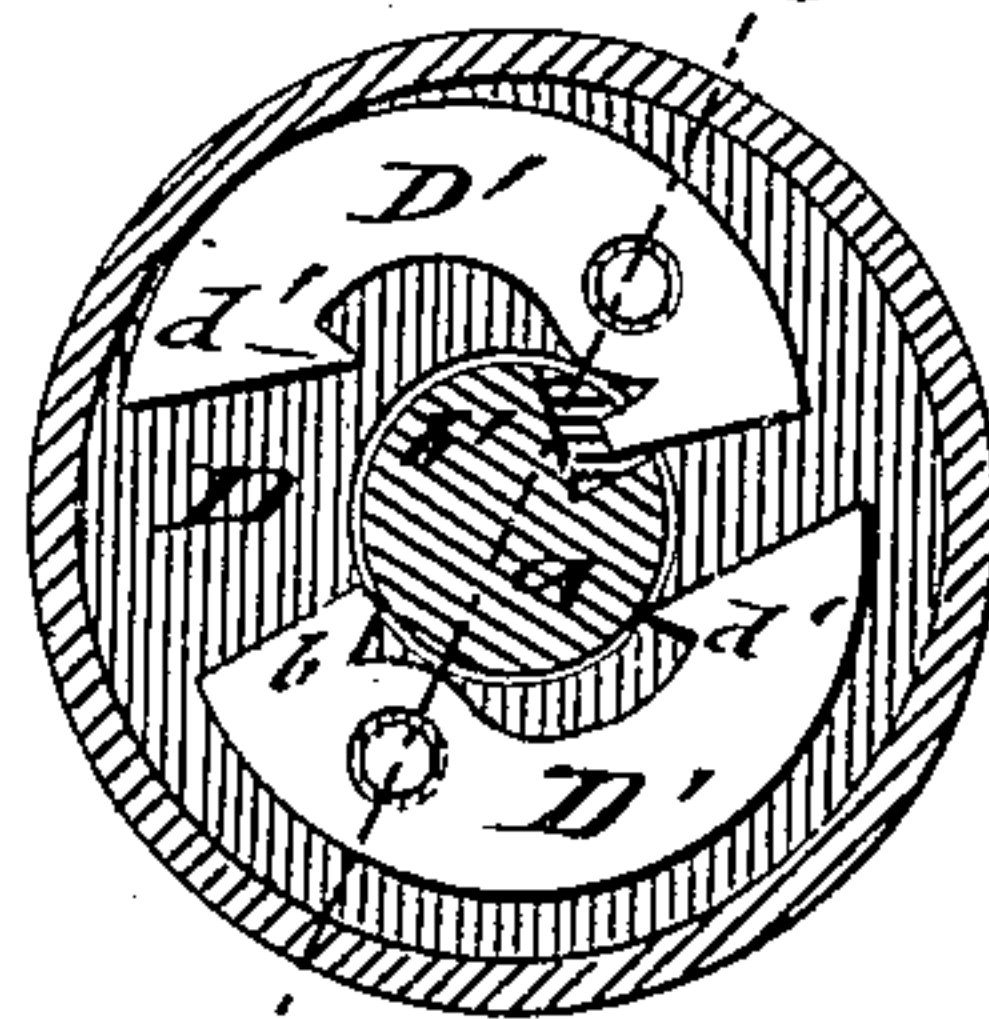
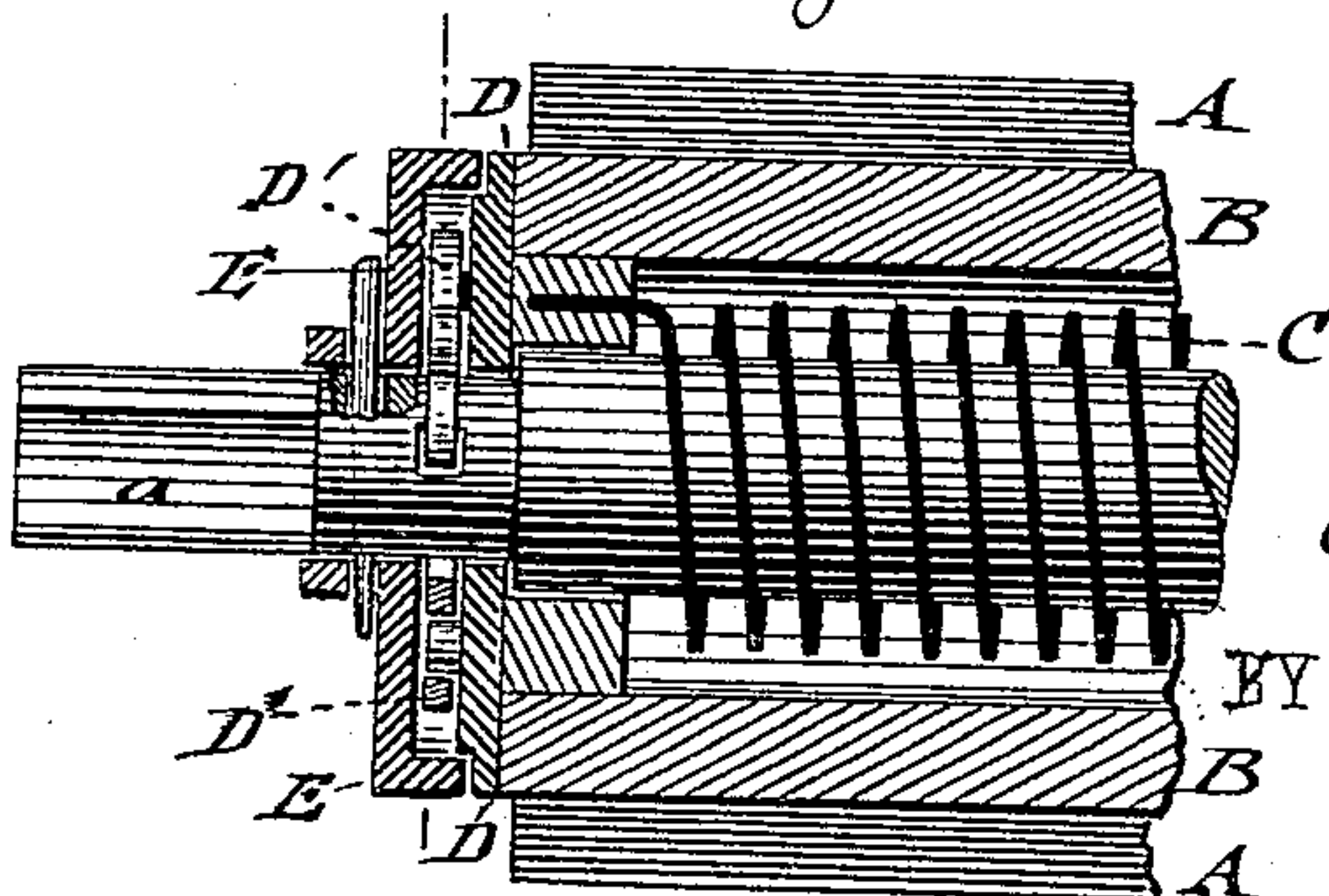


Fig. 10.



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# UNITED STATES PATENT OFFICE.

CHARLES DE QUILLFELDT, OF NEW YORK, N. Y.

## SPRING CURTAIN-ROLLER.

SPECIFICATION forming part of Letters Patent No. 271,691, dated February 6, 1883.

Application filed March 31, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES DE QUILLFELDT, of the city, county, and State of New York, have invented certain new and useful  
5 Improvements in Spring Curtain-Rollers, of which the following is a specification.

In the spring curtain-rollers heretofore used the spring-acted roller is generally locked by means of pivoted pawls, which drop into recesses or ratchets of the fixed roller-shaft by  
10 the force of gravity whenever the shade is allowed to be wound up slowly by the spring of the roller. This locking action, however, could not take place when the shade was allowed  
15 to follow quickly the motion of the roller, as imparted by the spring, as in this case the pawls were prevented from dropping into the recesses. The consequence was that a shade  
20 suddenly escaping from the hands of the person trying to adjust it was wound up with great rapidity around the roller, to the great annoyance and dissatisfaction of those using  
25 this class of curtain-rollers. These disadvantages of the curtain-rollers described have been sought to be obviated by arranging the  
30 end plate with pivoted pawls, which were thrown out by centrifugal force against a stationary contact-stop, that was connected to the fixed shaft of the roller, but exterior to the end plate of the roller. In this class of  
spring-rollers the shade was stopped, whenever it escaped suddenly from the hand of the person adjusting it, as soon as the centrifugal  
35 force exceeded the gravity of the pawls, so that thereby the so-called "running up" of the shade was fully prevented.

The object of this invention is to improve the spring shade-roller for which Letters Patent have been granted to me heretofore, dated  
40 February 16, 1875, and numbered 159,803, so as to combine the advantages of the two classes of spring-rollers hereinbefore described, and to produce a spring-roller which can not only be stopped in the usual slow manner of the  
45 rollers with gravity-pawls, but also by the quick stop of the rollers with centrifugal pawls, so that thereby the escape of the shade and its running up are fully prevented, and a most satisfactory roller for all practical purposes is  
50 obtained.

The invention consists of a spring-roller having a fixed spindle and an end plate pro-

vided with eccentrically-pivoted pawls, the latter having projecting lugs that engage stop-recesses of the spindle, whether they are operated by the force of gravity or by centrifugal force, according as the roller is allowed to rotate at quick or slow speed.

In the accompanying drawings, Figure 1 represents a side view of my improved spring  
60 curtain-roller; Fig. 2, a side view, partly in vertical section, on line *xx*, Fig. 9, of a modified construction of the same. Fig. 3 is a sectional end view of a modified form of the same. Figs. 4, 5, and 6, and 7, 8, and 9 are  
65 sectional end views of the spring curtain-rollers shown respectively in Figs. 1 and 2, the end views showing the different positions which the pawls assume during the rotation of the spring-rollers; and Fig. 10 is a detail  
70 vertical longitudinal section of the spring-roller shown in Fig. 1, taken on line *yy*, Fig. 4.

Similar letters of reference indicate corresponding parts.

A in the drawings represents a roller-shade, 75 and B its roller, which is provided in the usual manner with an interior spiral spring, C, that is attached at one end to the roller and at the other end to a fixed projecting spindle or shaft, *a*, which is set by its flattened sides into a fixed  
80 supporting-bracket, whereby it is retained in a stationary position, while the roller turns readily thereon by the action of the spring, as customary in spring-rollers of this class. The roller B is provided with an end plate, D, which  
85 is screwed or otherwise attached to the end of the roller B, and to which are applied one or more eccentrically-pivoted pawls, D'. The pawl or pawls D' are provided at that side adjoining the fixed shaft *a* with projecting lugs *b*,  
90 which lugs engage a notch or recess, *b'*, of the fixed shaft whenever, by the slow rotation of the spring-roller, the pawl is allowed to be dropped into the recess by the force of gravity. A second projection or lug, *d*, is arranged at the exterior side of the pawl, as  
95 shown in Figs. 4, 5, and 6, or at the same side as the first lug, *b*, but at greater distance from the pivot-pin than lugs *b*, as shown in Figs. 7, 8, and 9. When the second lug, *d*, is arranged on the exterior side of the pawls D' a  
100 recess or stop, *d'*, is arranged in the circumference of a cap, E, which latter is rigidly secured at its center or hub to the fixed shaft *a*,



and which is so constructed as to inclose the pawls and end plate of the roller. The recess or stop  $d'$  of the cap is so arranged relatively to the pawls  $D'$  that the latter are thrown out toward the circumference of the roller whenever, by the quick rotation of the roller, the centrifugal force overcomes the gravity of the pawls, so that the lug  $d$  is thrown into the recess  $d'$  and stops thereby the roller. When the second projection or lug,  $d$ , is arranged at the same side as the first lug,  $b$ , the notch or recess  $b'$  of the fixed shaft  $a$  is used as a stop-recess for the pawls, whether they are operated by centrifugal power or by gravity, as shown clearly in Figs. 8 and 9. In the latter case no exterior closing-cap is necessary, but simply a flange on the end plate, which acts as a stop, against which the pawl  $D'$  abuts by its outer curved side when locked by centrifugal force, as shown in Fig. 9. In place of one stop-recess on the spindle, two may be used, as shown in Fig. 3.

The arrangements of the pawls and stop-recesses, whether they are arranged to lock the roller by gravity or centrifugal power, may be varied from, and also, in place of eccentrically-pivoted pawls, sliding pawls be used, which pawls are guided in corresponding recesses of the end plate and thrown out by centrifugal force when the roller is quickly rotated, but dropped by gravity into a stop-recess of the spindle when the roller is slowly rotated. Any other equivalent means may be employed whereby the roller is stopped by gravity when allowed to revolve slowly, or by centrifugal force when allowed to revolve quickly. It is also obvious that the same result will be reached when one or more of the pawls are simply gravity-pawls, while the remaining pawl or pawls are centrifugal pawls. In this manner a spring-roller is obtained, which can be stopped slowly or quickly, according as gravity or centrifugal force is called into action by the slow or quick rotation of the roller,

while at the intermediate speed of the roller the pawls are not acted upon and the shade is allowed to be wound up without being liable of escaping from the hand of the operator and running up, so as to require readjustment of the shade.

I am aware that spring-rollers provided with a pawl pivoted to the spindle and adapted to be worked by centrifugal force, so as to lock into suitable stop devices of the roller, are not new. I am also aware that spring-rollers provided with a pawl actuated by gravity, and a second pawl actuated by centrifugal force, so as to lock into notches, recesses, or other stop devices of the spindle or roller, have been used heretofore, and I therefore do not claim either of these constructions, broadly.

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

1. The combination, in a spring-roller, of one or more eccentrically-pivoted pawls pivoted to the end plate of the roller and provided with projecting lugs, with stop devices of the fixed spindle, into which the pawls are thrown, either by gravity or by centrifugal force, according as the roller is allowed to rotate slowly or quickly, substantially as specified.

2. The combination, in a spring-roller, of a flanged end plate, one or more eccentrically-pivoted pawls having projecting lugs, one closer to, the other farther from, the pivots, and a fixed spindle, having stop devices for the pawls, the pawls being adapted to lock the roller by the action of gravity or by centrifugal force, according to the speed of the roller, substantially as described.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

CHARLES DE QUILLFELDT.

Witnesses:

PAUL GOEPEL,  
SIDNEY MANN.