

(No Model.)

2 Sheets—Sheet 1.

W. SPEAR.

ATTACHMENT FOR SLIDING DOORS.

No. 334,203.

Patented Jan. 12, 1886.

Fig. 1

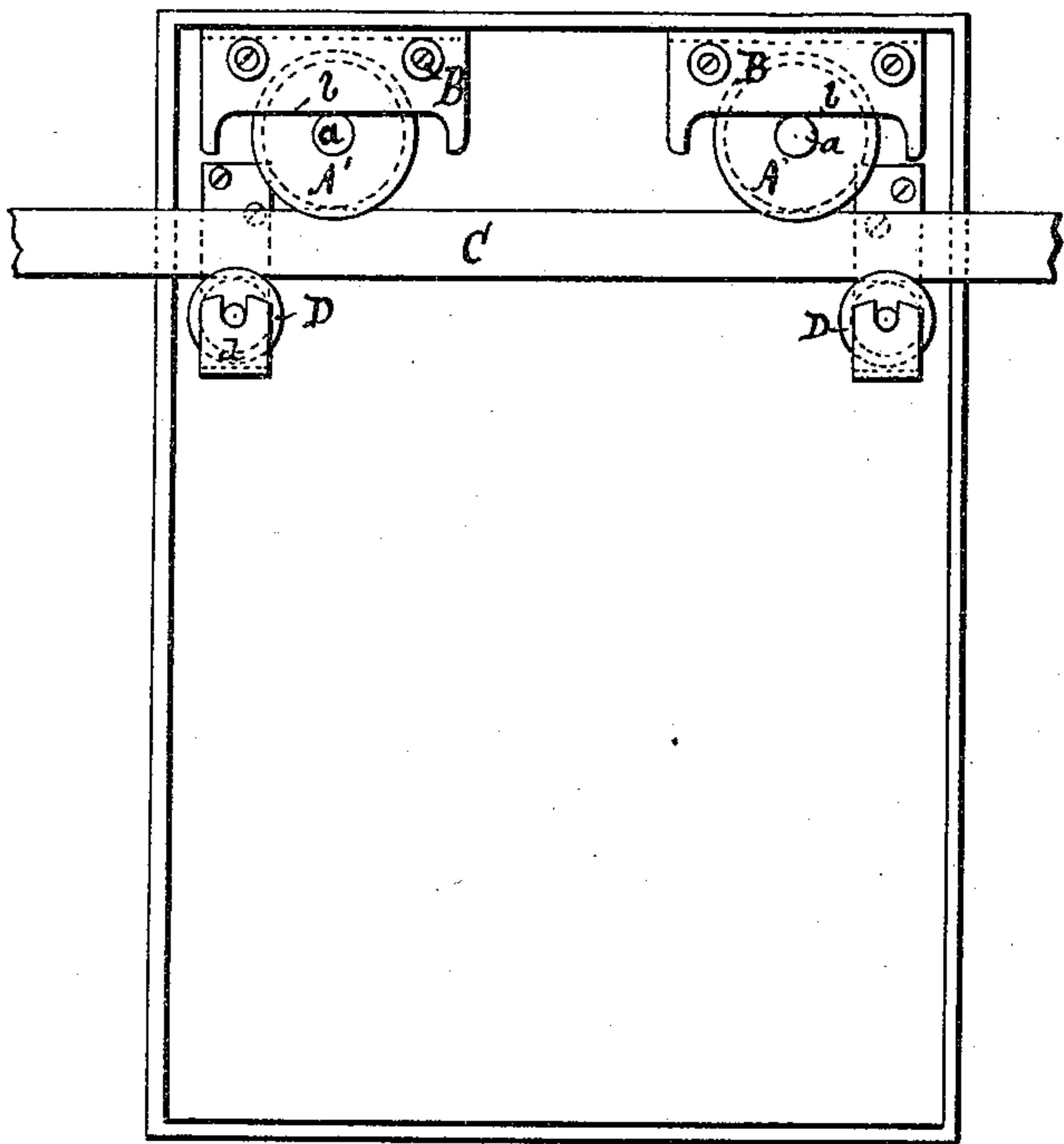


Fig. 2

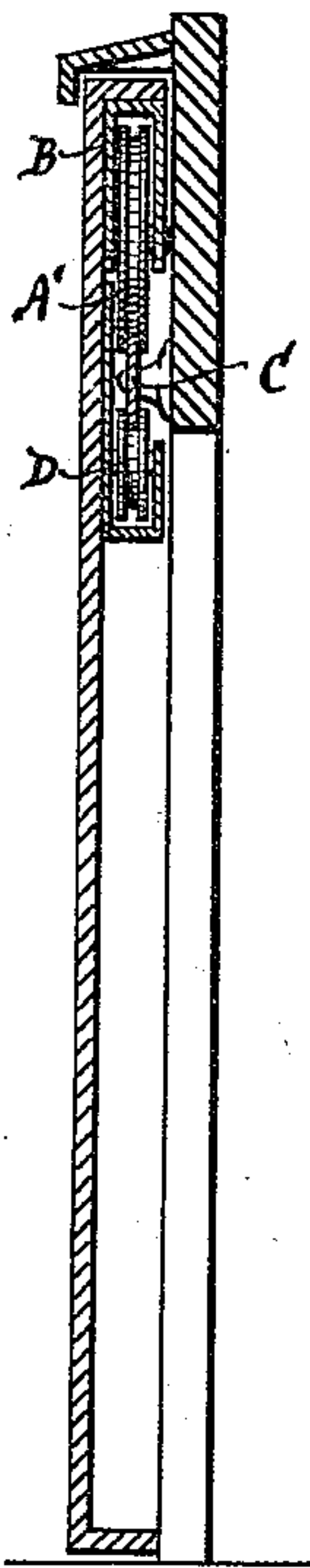


Fig. 3

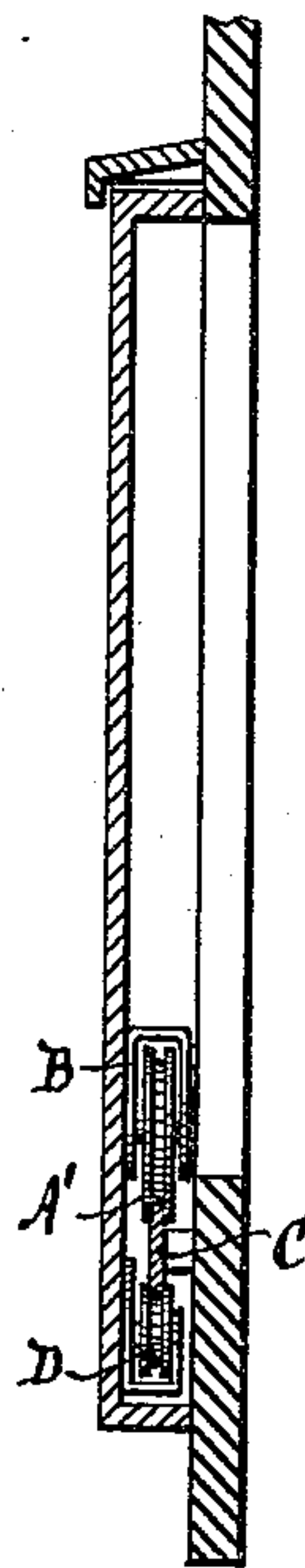


Fig. 4

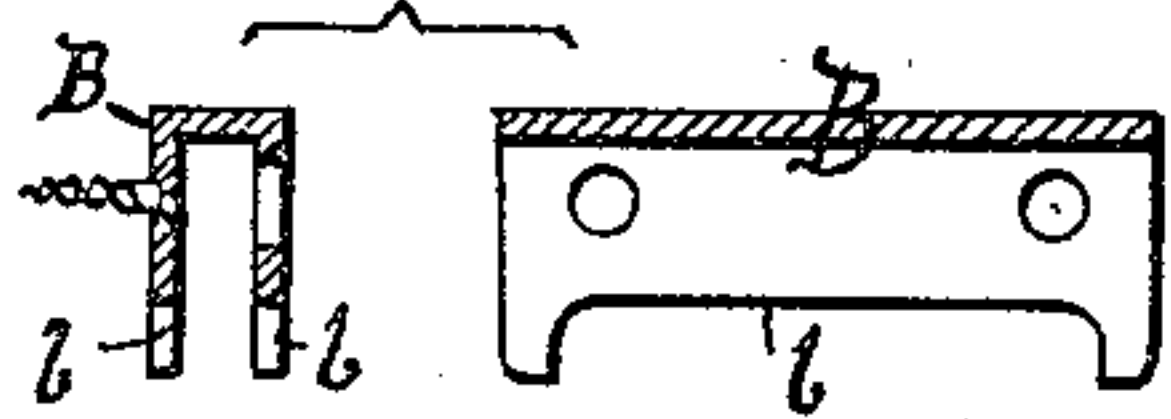


Fig. 5

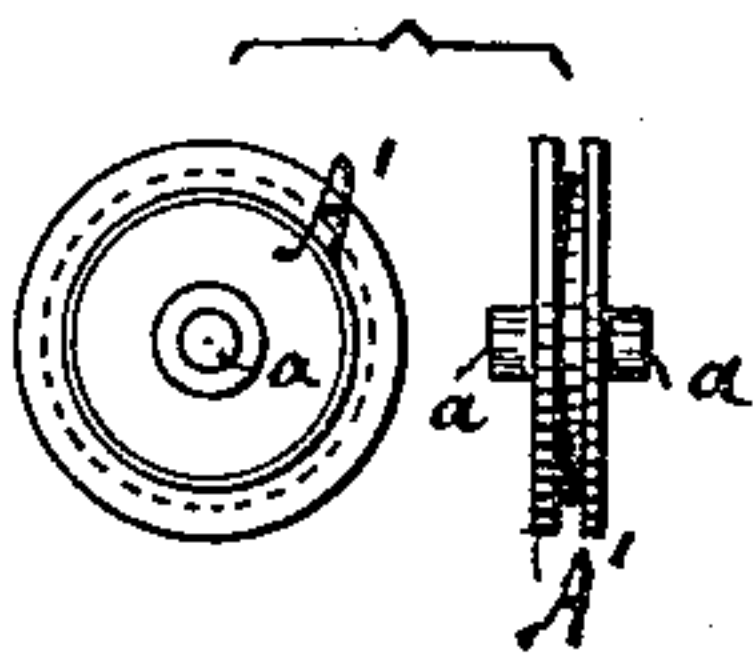


Fig. 6

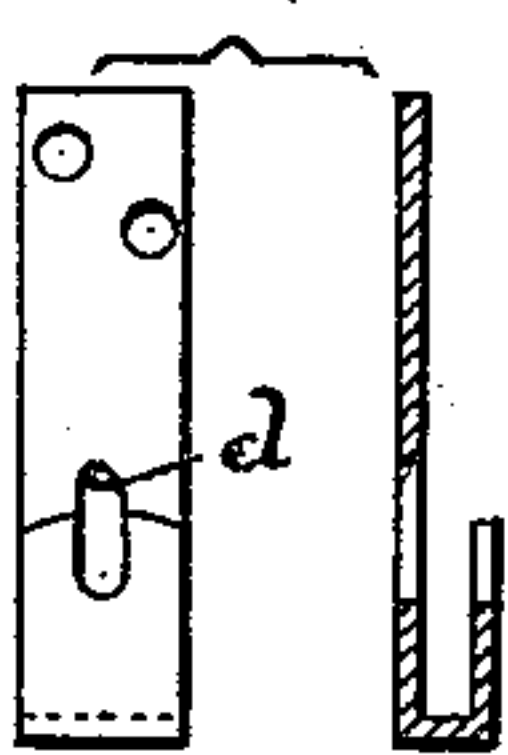


Fig. 7

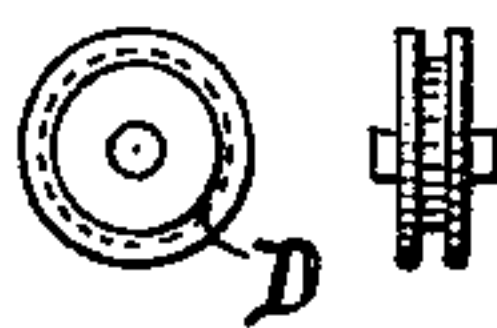
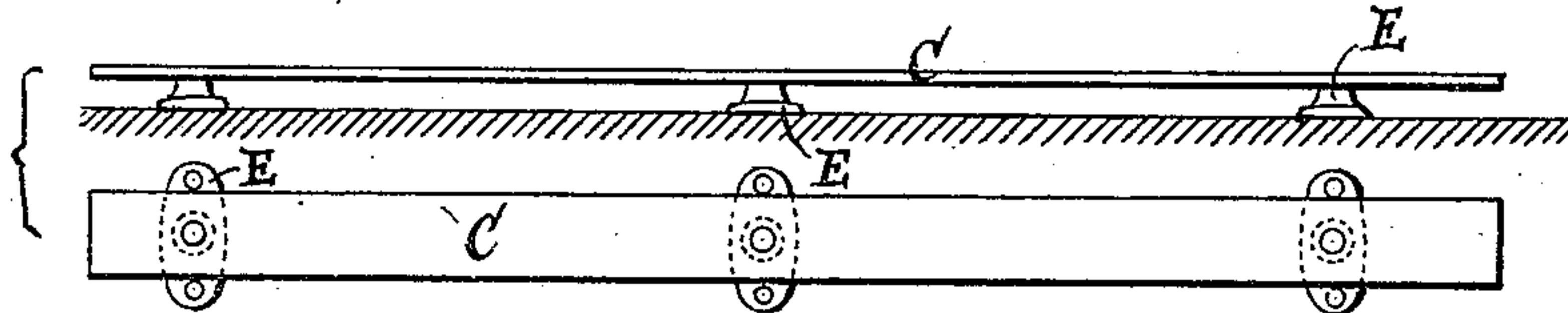


Fig. 8



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INVENTOR:

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 9

Fig. 10 Fig. 11

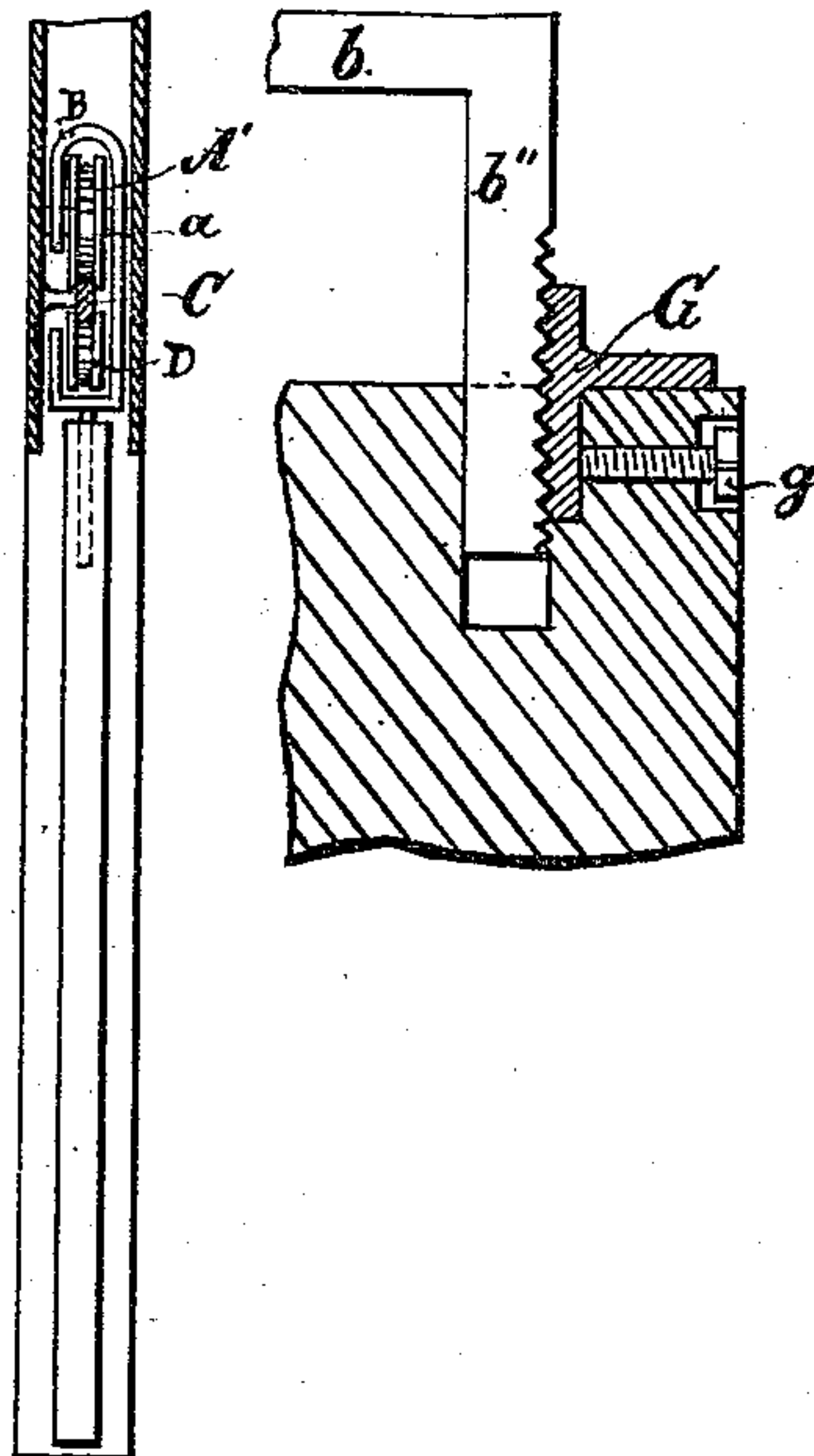
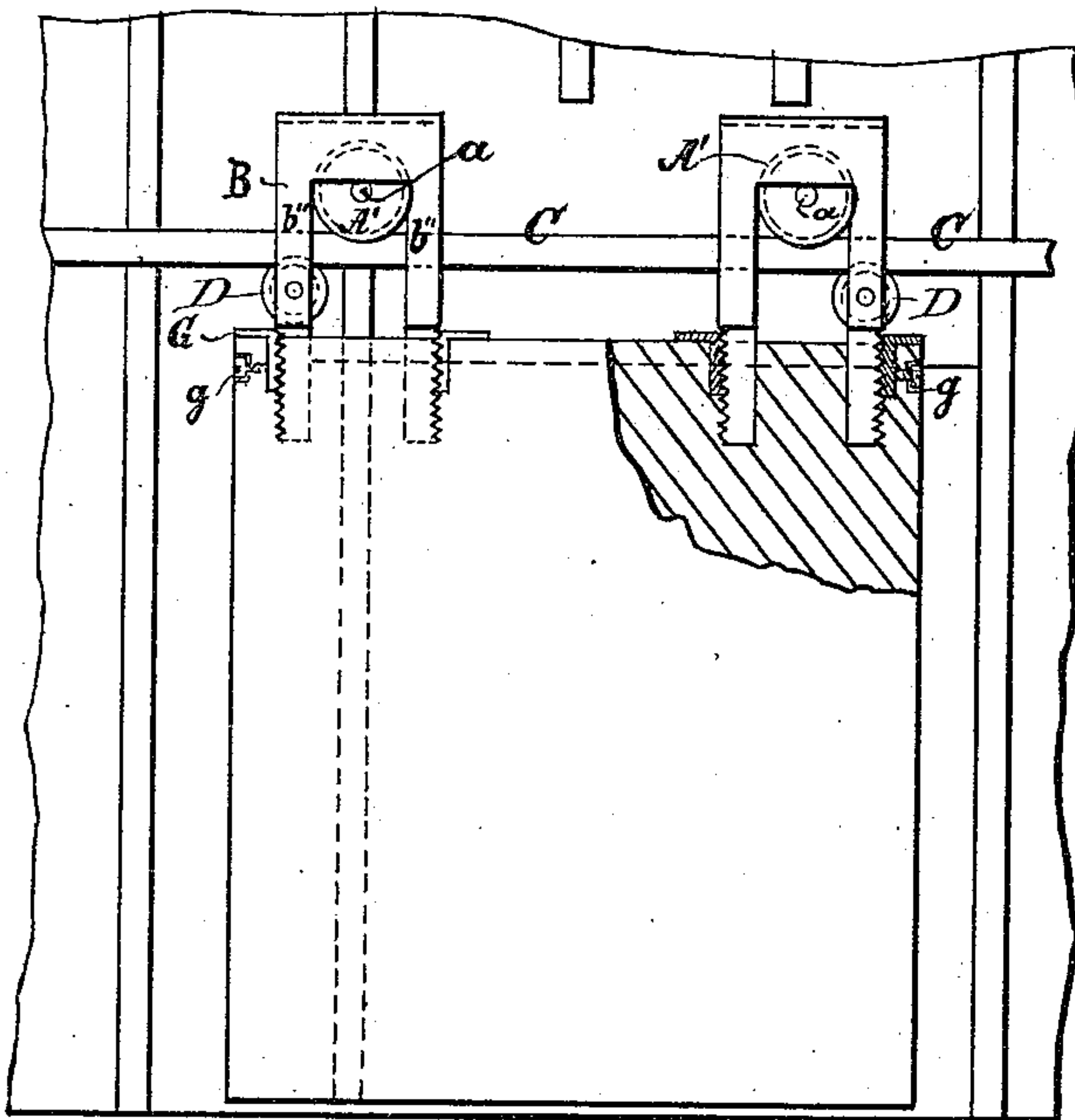
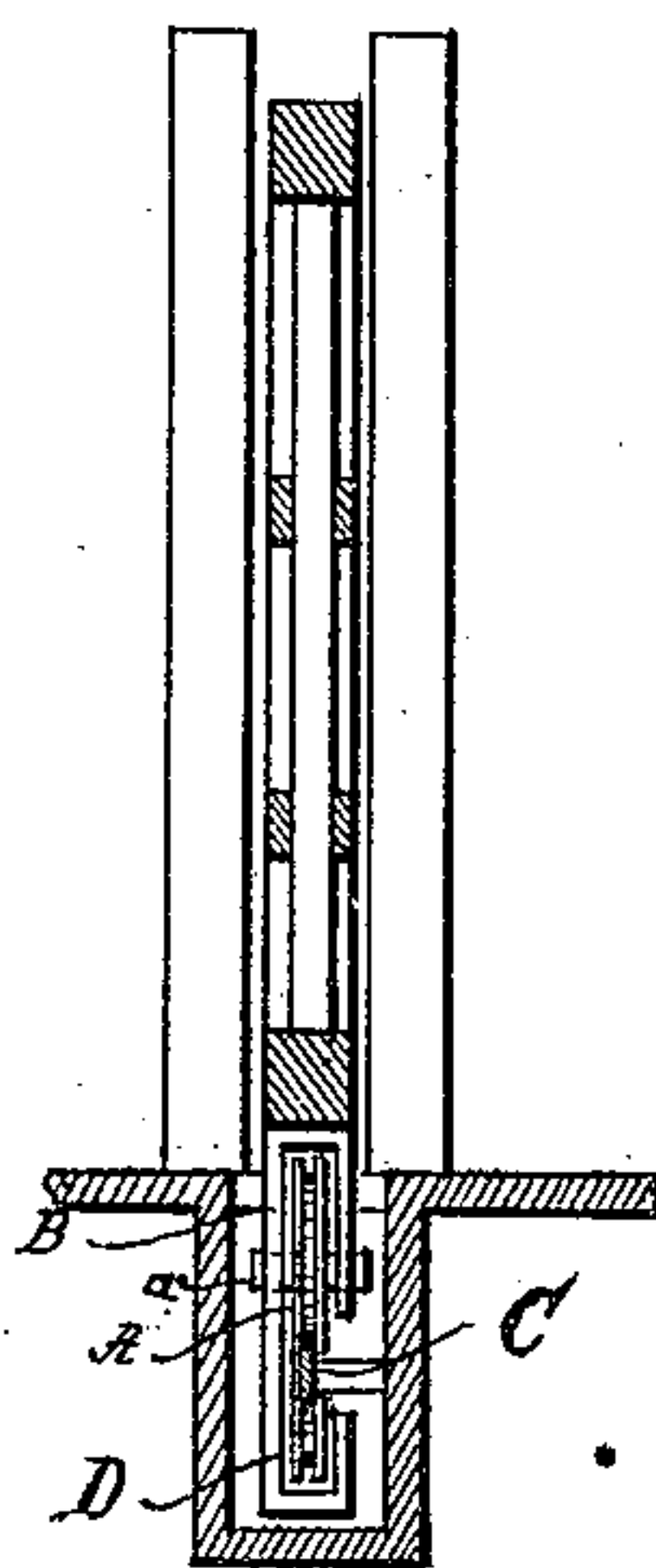
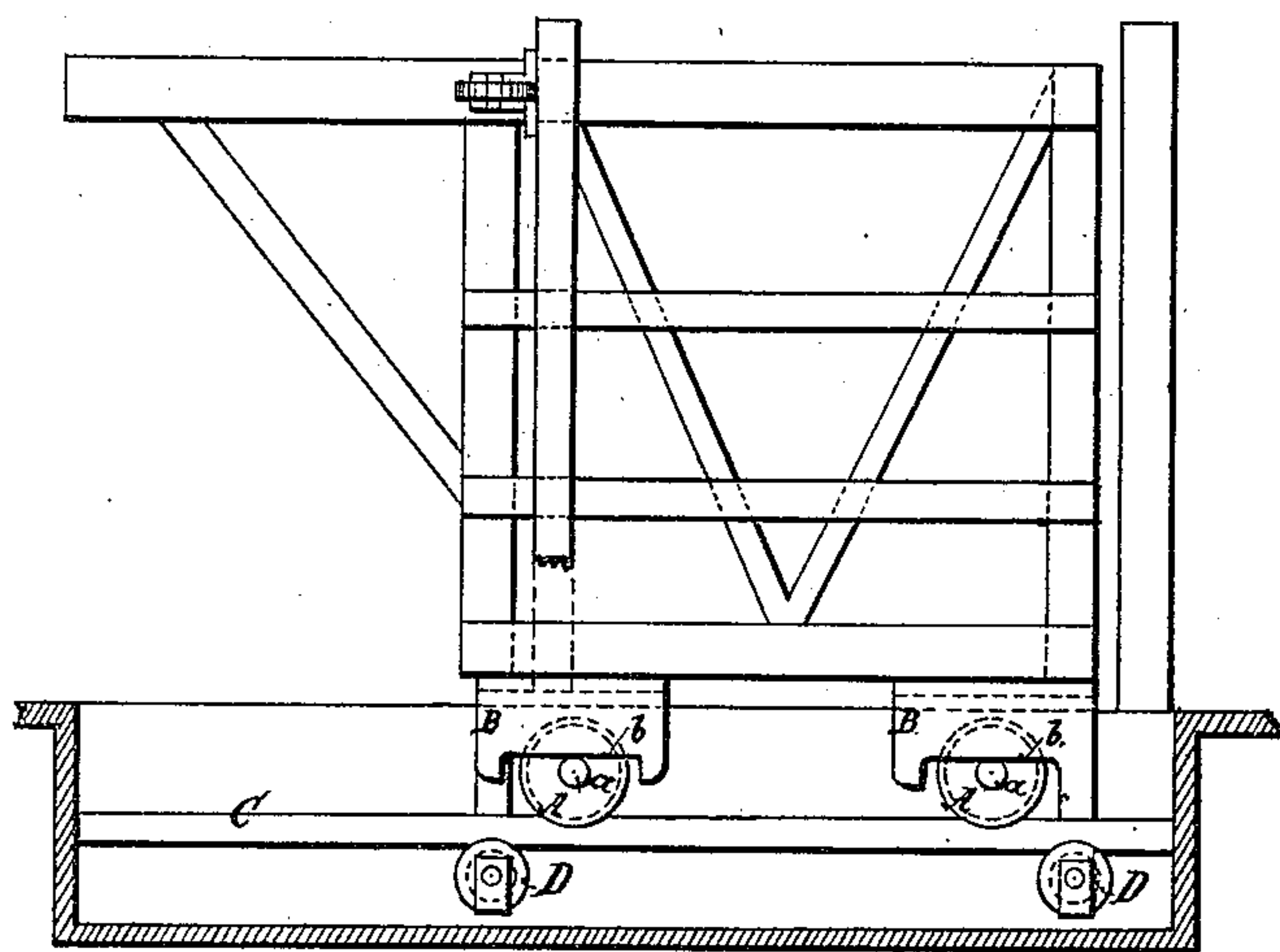


Fig. 12.

Fig. 13.



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# UNITED STATES PATENT OFFICE.

WARREN SPEAR, OF AURORA, ILLINOIS.

## ATTACHMENT FOR SLIDING DOORS.

SPECIFICATION forming part of Letters Patent No. 334,203, dated January 12, 1886.

Application filed July 23, 1883. Serial No. 101,716. (No model.)

*To all whom it may concern:*

Be it known that I, WARREN SPEAR, of Aurora, Illinois, have invented certain new and useful Improvements in Roller Attachments for Sliding Doors, of which the following is a specification.

The invention, which with slight modifications may be applied with advantage to all kinds of sliding doors, as barn-doors, car-doors, parlor-doors, or gates, has for its object to ease the sliding movement of the door; and it consists in the arrangement of a system of loose rollers in a housing, supporting the same on their pivots, and rolling in turn on a stationary rail.

The invention further consists in the arrangement of guide-rollers under the rail; also in the manner of affixing the rail to the wall of a barn or other structure, and other details hereinafter set forth.

In the drawings forming part of this specification, Figure 1, Sheet 1, shows the inside view of a door with the improved roller attachment and rail as arranged for barn-doors. Fig. 2 shows a vertical section through the middle of the door, exhibiting an end view of the roller attachment suspended on a rail at the top of the door, as shown in Fig. 1. Fig. 3 shows a similar vertical section and end view of the roller attachment, exhibiting the door resting on a rail below the door-opening, as it may be arranged for car-doors. Fig. 4 shows details of the housing. Fig. 5 shows details of the main roller-disks. Figs. 6 and 7 show details of guide-roller strap and guide-roller. Fig. 8 shows the rail and manner of affixing the same to the house-wall. Fig. 9, Sheet 2, shows a somewhat modified form of the roller attachment and housing as they may be used for parlor-doors. Fig. 10 exhibits a vertical section of the door, with end view of roller attachment, as shown in Fig. 9. Fig. 11 shows a detail sketch, exhibiting the manner of hanging the door to the housing. Fig. 12 shows the roller attachment as applied to a sliding gate. Fig. 13 shows a vertical section of the gate, with end view of roller attachment and posts, as shown in Fig. 12.

Like letters of reference indicate like parts.

The roller A, which moves freely in the housing B, is practically a combination of

three circular concentric disks. The middle larger one, A', rolls and rests upon the stationary rail C, while the smaller ones, *a a*, support and roll under the horizontal edges or rails *b b* of the housing B, which latter is fastened to the door or gate. The disks *a a* and A', being thus interposed between the rails of the housing, *b b*, and the main rail C, roll on both sides along a straight horizontal surface. Thus no pivotal friction can exist. The roller A, as herein described, is cast in one solid piece of metal in chill-molds. By this method a central location of the small disks *a a*, a general smooth and even surface, and a chilled or tempered surface metal are always secured, so that no further manipulation of the roller is necessary, and the same is ready for use when it leaves the mold. The length of the rails *b b* in regard to the full swing of the door is proportionate to the difference in circumference between the small disks *a a* and the large disk A', and vice versa. The large disk A' may be provided with flanges on each side of the rail C to keep it in place.

In order to prevent the roller A jumping the track C in case of obstructions, I provide a flanged sheave, D, at the under side of the track C. This sheave may rest in an independent support, *d*, as shown in Figs. 1 and 6, or the support may form part of the housing, as shown in Figs. 10 and 12.

Affixing the roller attachment to gates, Figs. 12 and 13, I provide a trough or box under the ground, leaving a slot or way wide enough to pass the housing. The rail C is fastened to the side of the box. The rail is generally fastened to the wall or frame by means of a strip of wood filling the space between the rail and the wall. The crevice thus formed will fill with ice and snow in winter-time, and will form a regular gutter in rainy weather and a constant impediment to the traveling of the roller along the rail. To meet this imperfection, I fasten the rail by means of cast-iron buttons or blocks E E, (shown in Fig. 8,) which buttons may be set apart as far as may be needed to secure a good support of the rail. Thus a space will be left between the rail and wall, and neither ice, snow, nor dirt can accumulate. The thin edge of the rail is easily cleaned.

In hanging parlor-doors the housing B is provided with two extensions or legs,  $b'' b''$ , which are secured in mortises provided at the top of the door. The disks  $A'$  and  $a a$  roll between the housing-rails  $b$  and main rail C, in the manner as shown and heretofore described. The guide-sheave D is affixed to one of the legs  $b''$  of the housing B.

It is often desirable that the door may be made vertically adjustable. To this end a small bracket, G, is fastened to the top of the door, which is pressed against the upright  $b''$  of the housing or strap B'. This bracket, as well as the upright, is provided with small notches or corrugations, and a set-screw serves to hold the housing in place.

I am well aware that the arrangement of so-called "compound rollers" between the sliding doors and the stationary rail is not new, as in the patent of A. K. Rider, No. 192,455,

June 26, 1877, rollers are described which support the door upon a central hub of a loose compound roller having duplicate heads at a distance apart outside of said central hub, which heads travel on a stationary rail. I do not claim such arrangement, broadly; but

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

1. The combination of the housing B, provided with two short rails,  $b b$ , the small disks  $a a$ , and large disk  $A'$ , as described, with rail C and guide-sheave D, arranged as shown, and for the purpose set forth.

2. In sliding doors, the bracket G, with set-screw  $g$ , in combination with the housing B, for the purpose set forth.

WARREN SPEAR.

Witnesses:

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