

(No Model.)

2 Sheets—Sheet 1.

C. W. COOK.

SASH HOLDER.

No. 373,726.

Patented Nov. 22, 1887.

Fig. 4 -

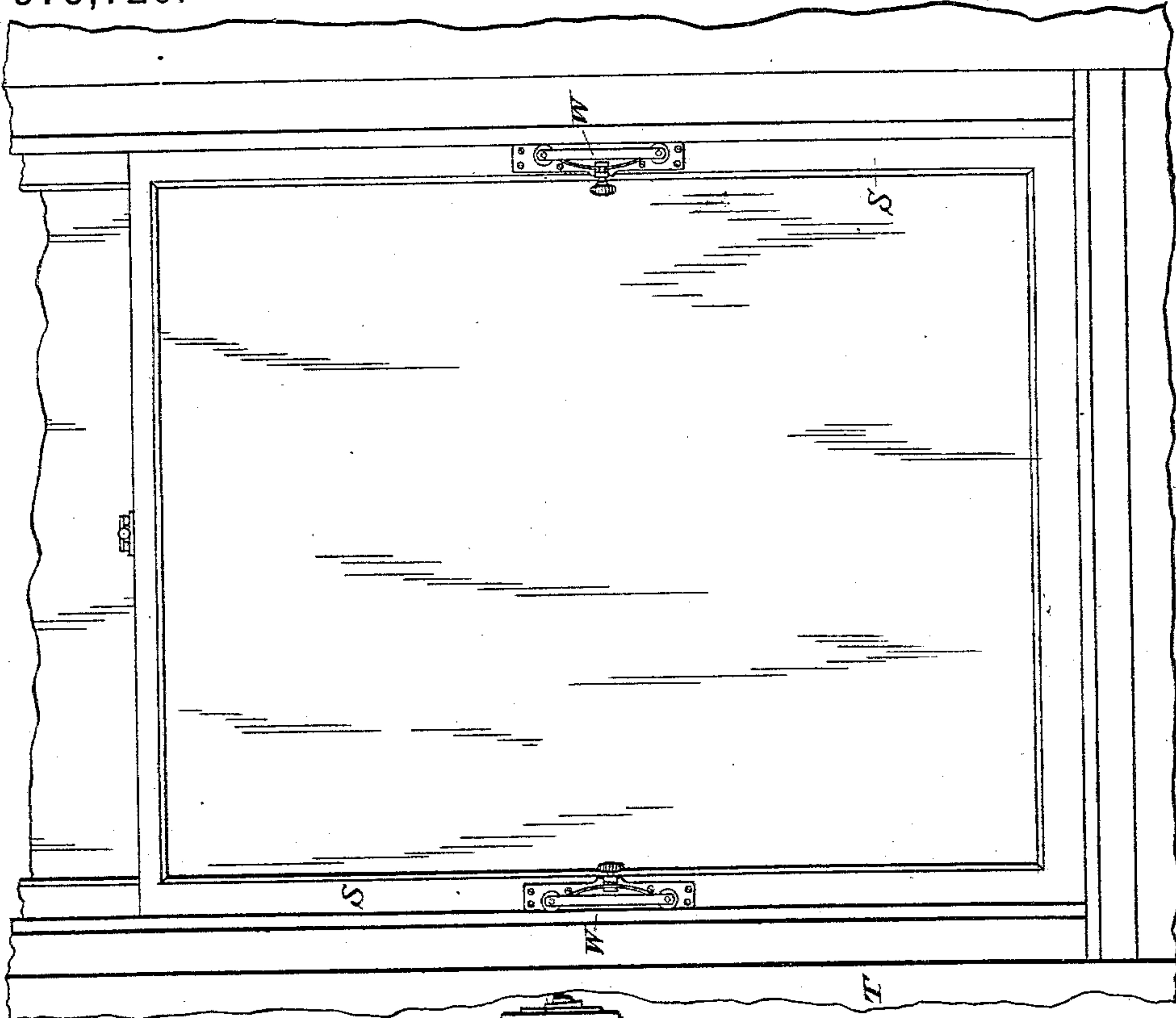


Fig. 3.

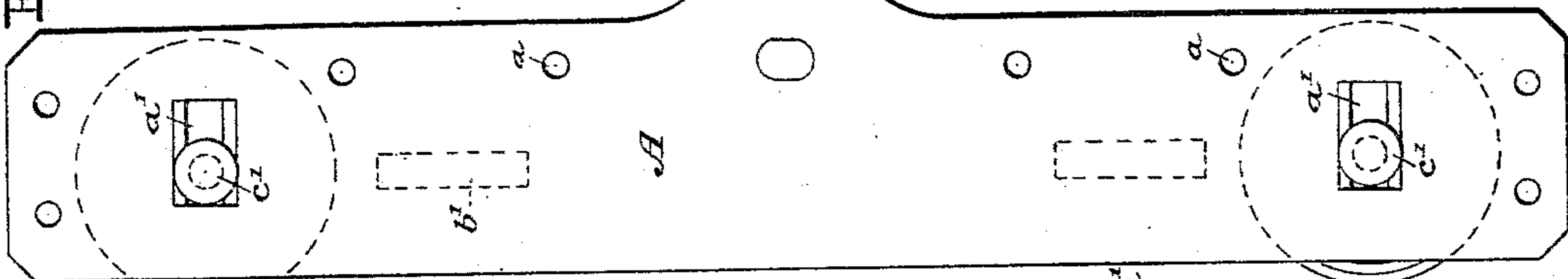


Fig. 2.

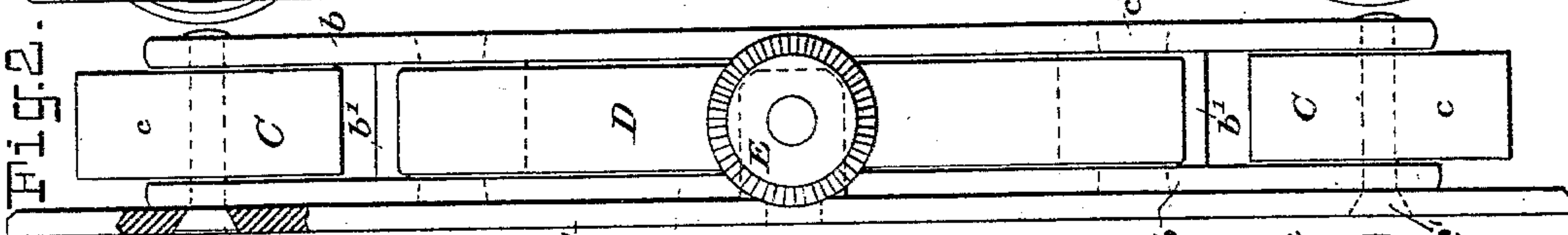
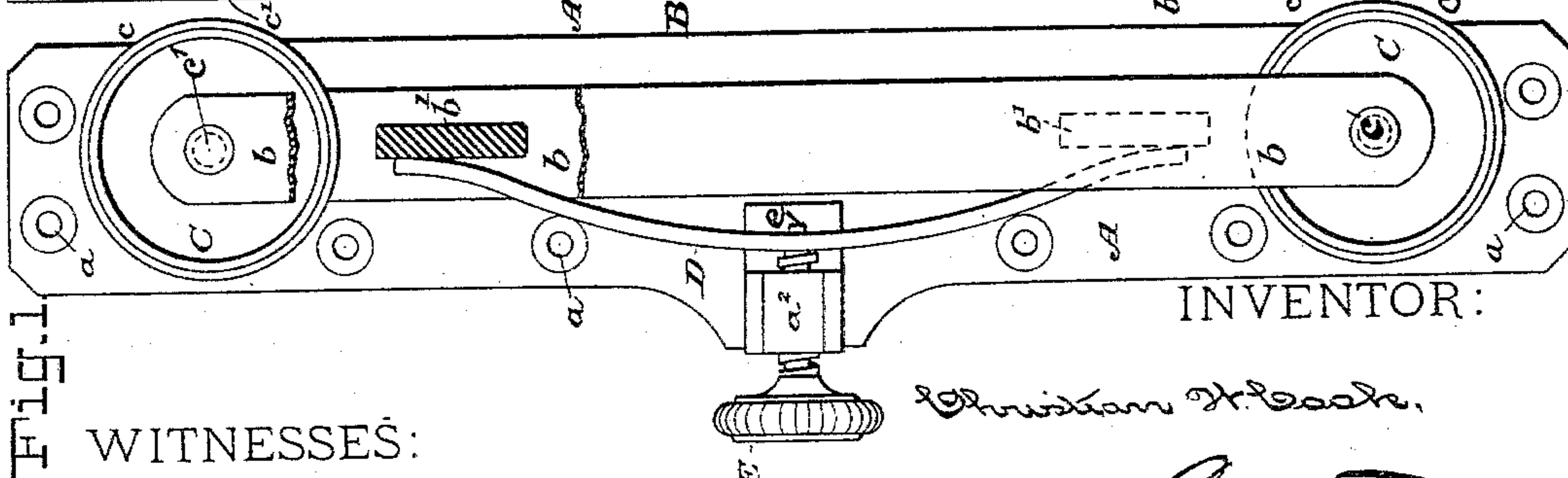


Fig. 1.



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(No Model.)

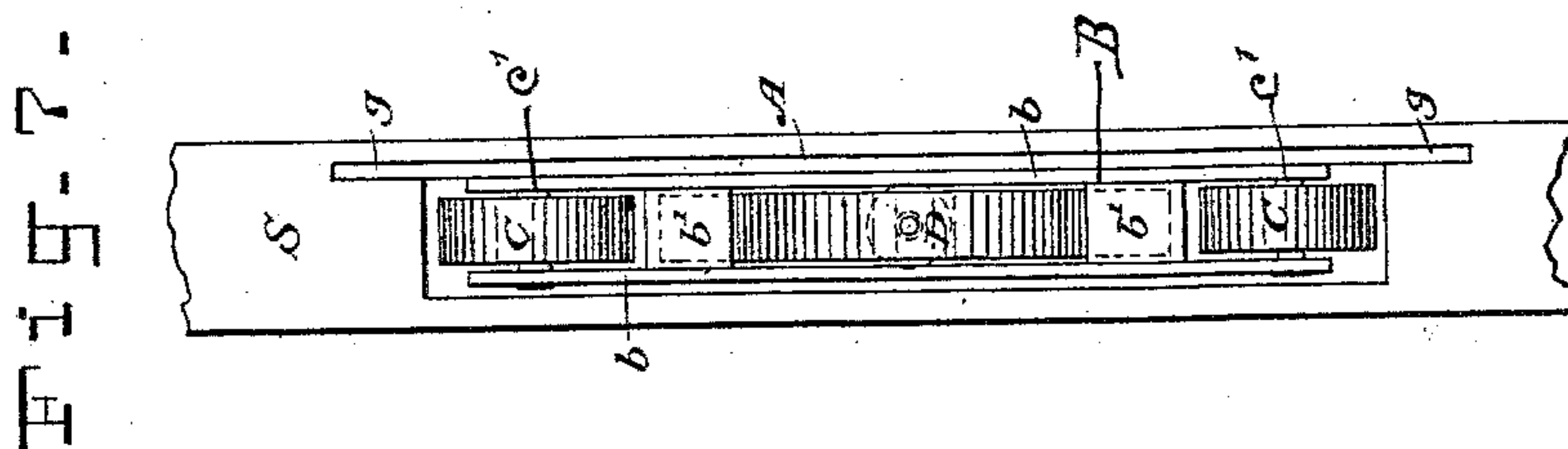
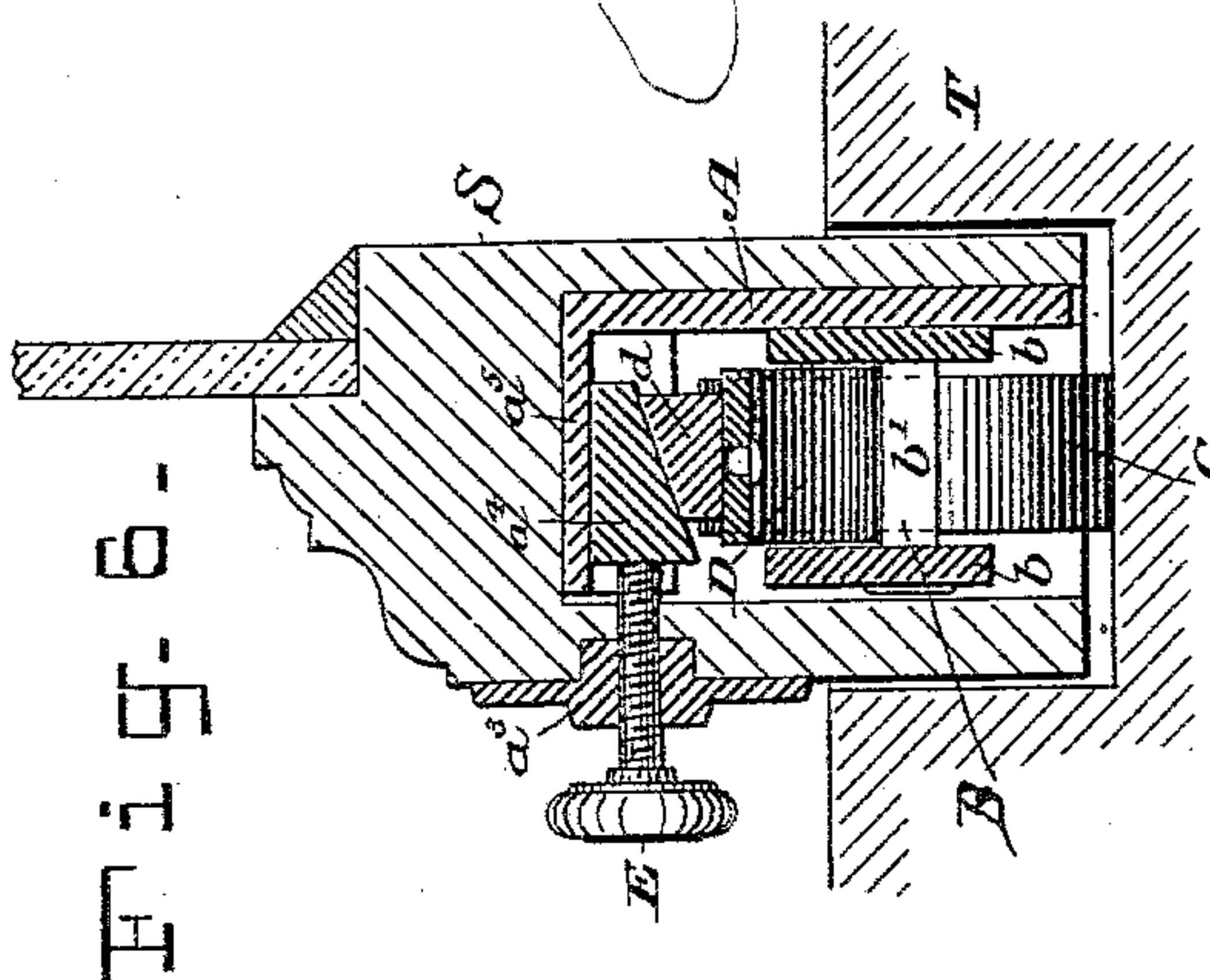
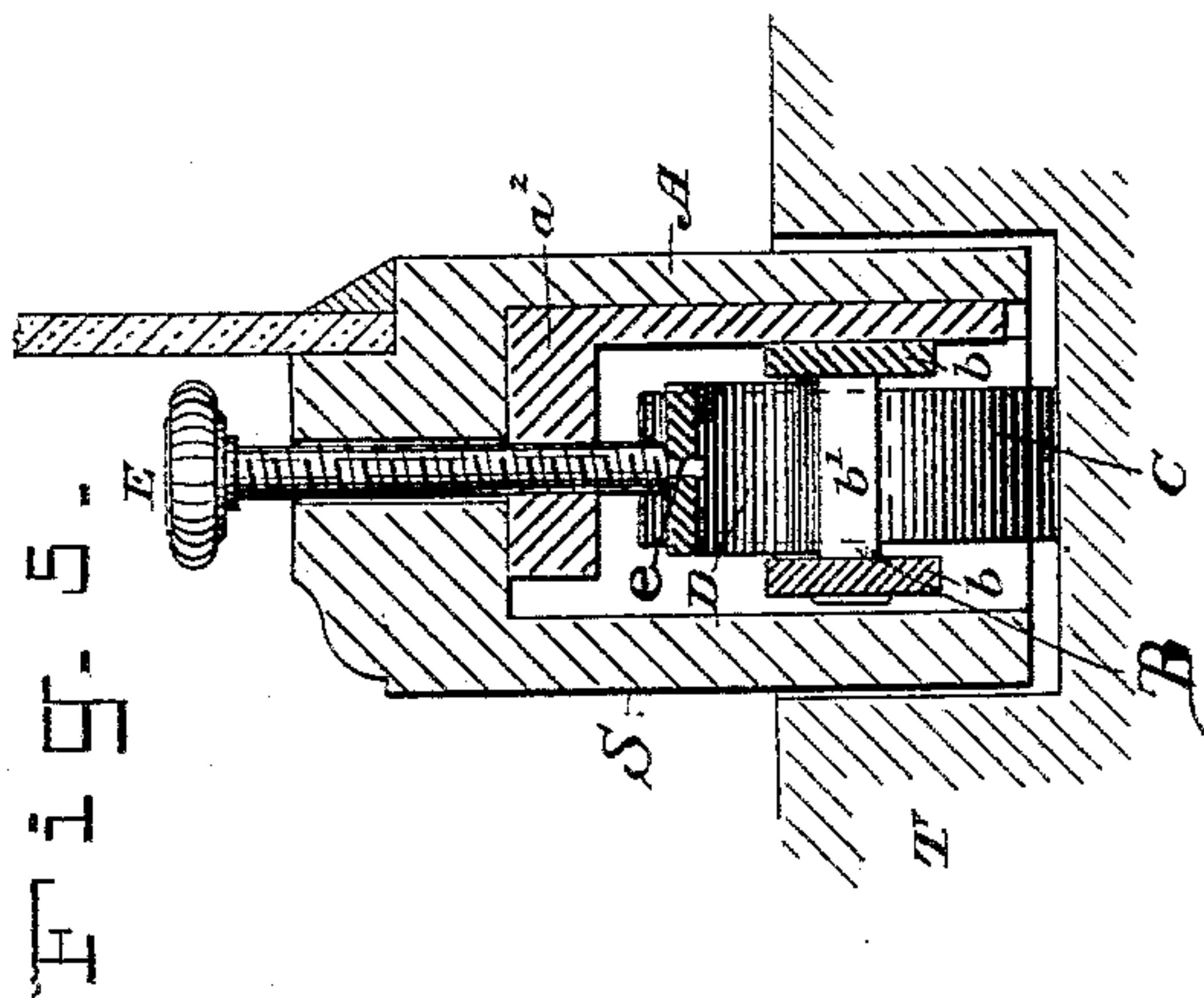
2 Sheets—Sheet 2.

C. W. COOK.

SASH HOLDER.

No. 373,726.

Patented Nov. 22, 1887.



INVENTOR:

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UNITED STATES PATENT OFFICE.

CHRISTIAN WILLIAM COOK, OF WEST JORDAN, UTAH TERRITORY.

SASH-HOLDER.

SPECIFICATION forming part of Letters Patent No. 373,726, dated November 22, 1887.

Application filed July 20, 1887. Serial No. 244,807. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN WILLIAM COOK, of West Jordan, in the county of Salt Lake, Utah Territory, have invented certain
5 Improvements in Sash-Supporters, of which the following is a specification.

My invention relates to that class of sash supporters or upholders wherein rollers are employed to bear upon or against the inner
10 face of the window-frame, the rollers being mounted on or carried by the window-sash. Such appliances are designed for use on windows which have no sash-weights or similar counterbalancing devices for the sash.

15 My invention will be fully described hereinafter, and its novel features carefully defined in the claims.

In the drawings, which serve to illustrate my invention, Figure 1 shows one of the sup-
20 porters detached and in front elevation, a part of the roller-frame being broken away. Fig. 2 is an edge elevation of the same, with a part of the attaching-plate broken away. Fig. 3 is a back view showing inner face of the
25 supporter that rests on the wood when the supporter is applied to the sash. All of these views are on a large scale. Fig. 4 is a front view, on a much smaller scale, of a window provided with my supporters on the sash.
30 Figs. 5, 6, and 7 illustrate my supporter when inserted in a mortise in the sash, Figs. 5 and 6 being on the same scale as Figs. 1 to 3, and Fig. 7 on a scale one-half that of Figs. 5 and 6.

Referring to the first three figures of the
35 drawings, A represents the metal base or back plate of the supporter provided with suitable screw-holes, *a a*, to receive screws for its attachment to the sash.

40 B is a metal frame composed of two side plates, *b b*, and two cross-bearers, *b' b'*, which tie the two plates of the frame rigidly together.

45 C C are metal rollers rotatively mounted on fixed bearing-axes *c' c'* in the ends of frame B. In order to give these rollers the necessary frictional contact with the face of the window-frame to compel them to roll when the sash is raised, and at the same time to avoid, as far as possible the employment of a yielding elastic material for the tires or treads of
50 the rollers, I provide the latter with tires *c*, of thin fabric or material that will not yield materially to pressure, as a combination of can-

vas and rubber, for example, although other material of this character will serve.

My object is to prevent the contact of the
55 metal roller with the wooden frame, as such contact of the hard roller with the measurably-soft material of the frame will inevitably wear a groove in the window-frame if the roller is rough, and if the roller is smooth it will slip
60 on the frame and not roll. At the same time, if the roller be tired or faced with a thick yielding material, it will acquire flattened faces or facets from the pressure and will soon lose its proper circular form. My roller has
65 none of these objectionable features.

The frame B is connected to the plate A in the following manner: In the plate A are formed two slots, *a' a'*, extending crosswise of the plate and having their lateral faces bev-
70 eled, as shown in Fig. 3, and where the plate A is broken away in Fig. 2 the "flare" being on the side of the plate that rests against the sash when the supporter is in place. These
75 slots are so placed as to receive the ends of the bearing-axes *c'*, and the ends of these axes where they rest in the slots are given the form of cones, the sloping sides of which fit the bevels of the sides of the slots. Thus the frame
80 B is held up to and firmly connected with the plate A, and is permitted to play across or transversely of the plate A to a limited extent.

D is a curved or arched leaf-spring, which will be of steel by preference. The ends of this spring rest on the cross-bearers *b'* be-
85 tween the side plates, *b*, of frame B, between which the spring fits snugly to prevent rattling or looseness. In Fig. 1 one of the plates *b* is broken away to show the bearing of the spring on the cross-bearer *b'*. The arch of the spring
90 at its middle stands under a stout overhanging lug, *a²*, on the plate A, through which is driven a thumb-screw, E, with a milled head or other form of head adapted to be conveniently grasped between the thumb and finger.
95 The tip *e* of the screw is reduced in size and engages a hole in the spring at the middle of the latter. Thus the spring is held against escaping from under the screw or slipping and flying out when the screw is driven down upon
100 it. The lug *a²* should be strong enough to bear considerable strain.

Referring now to Fig. 4, it will be seen that one of my supporters (indicated in Fig. 4 as a

whole by W) is placed at each side of the window and preferably at a point about midway of the height of the sash S; but this not absolutely essential, and the position of the supporter will properly vary somewhat with the size of the sash. The plate A of the supporter rests upon the front face of the sash S, to which it may be secured by screws. The edge of the plate A that is next the window-frame T will stand quite close thereto, and the rollers C C will press against and roll upon the frame, being pressed up thereto by the spring D. The word "frame" as here employed is meant to include not only the frame proper, but the strips and beads that form the grooves in which the sash plays.

In mounting the supporter on the sash it is best to slack up the tension of the spring D by withdrawing the screw E. When the supporters are in place and screwed fast, the thumb-screw may be driven down upon the spring until the rollers C press with sufficient elastic force against the window-frame. The elastic pressure in my supporter is due to the spring D, and not to any elasticity in the rollers themselves. The movement of the axles c' in the slots a' allows all the play of frame B on the plate A that will be necessary.

By using a comparatively long frame B and mounting a roller C in same at each end I obtain two bearings on the window-frame at each side, and the bearings at each side are a considerable distance apart. This serves to give the sash a steady movement. The frame B may rock a little on the tip of screw E as a fulcrum, as the screw is arranged midway between the rollers C. This construction permits all four of the rollers to bear firmly on the window-frame, even when the sash is very loosely set in said frame. When the sash has been raised to the proper height, a single turn of the screws E will clamp the rollers C firmly against the window-frame and hold the sash in place.

My supporters are not "rights" and "lefts"—that is to say, it is not necessary to construct them in pairs. This is an important feature in considering economy of construction and convenience of sale.

In reference to the tires of the rollers, I will say that they may be constructed by covering a strip of canvas of the proper width with a film of unvulcanized rubber, then wrapping this strip twice around the roller tightly, and then vulcanizing the rubber while the tire is in place. Such a tire will not acquire flattened faces or facets from use.

If desired, the metallic parts of my supporter may be plated with nickel or silver. When in place on the sash, the coned ends of the axles c' do not project far enough through the plate A to bear on the wood, as this would impede the movement of the frame B. Should they project a little, however, the wood may be cut away at these points.

Figs. 5, 6, and 7 illustrate my improved

sash-supporter as mounted in a mortise in the edge of the sash S.

Fig. 5 shows the screw E as arranged in Figs. 1 to 3 bearing directly on the spring D. After the supporter has been inserted in the mortise prepared for it, the screw E is passed through a hole in the sash and screwed through the lug a^2 . This construction is best suited for supporting the upper sash.

Fig. 6 shows the screw E with its axis arranged at right angles to that of the same screw in the other figures. In this case the screw E screws through a nut-plate, a^3 , secured to the face of the sash, and bears on a wedge-block, a^4 , arranged in a suitable guide or way, a^5 , secured to or forming a part of plate A. The inclined face of this wedge block bears on and plays over the inclined face of a block, d , fixed to or forming a part of spring D. The purpose of this device is of course to communicate the movement of the screw E at right angles to spring D.

Fig. 7 merely shows how the supporter may be held in place in the mortise by providing narrow end mortises at $g g$ to receive the projecting ends of plate A. These ends should fit snugly in the mortises, so as to hold the plate tightly.

Having thus described my invention, I claim—

1. In a sash-supporter, the combination, with the attaching-plate, as A, of the roller-frame, as B, mounted in guides on said plate, whereby it is connected to and may slide on the latter, the rollers mounted in the ends of said roller-frame, the arched spring resting at two points on said frame, and a thumb-screw, as E, for varying the tension of said spring, said screw having its head exposed and convenient for manipulation, as set forth.

2. In a sash-supporter, the combination, with the attaching-plate, as A, provided with transversely-arranged slots, as a' , having beveled margins, of the roller-frame, as B, its rollers C, and the axles c' of said rollers, the conical ends of said axles projecting into and engaging the slots a' , thus forming attaching devices and guides for said roller-frame, and the spring, as D, for pressing the rollers up to the window-frame, as set forth.

3. In a sash-supporter, the combination, with the roller-frame and rollers, of the screw E, its nut-plate, the spring D, resting at two points on said roller-frame and provided with a block, d , having an inclined face, the guide a^5 , and the wedge-block a^4 in said guide and bearing on said block d , said screw bearing on said block a^4 , substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CHRISTAIN WILLIAM COOK.

Witnesses:

EPHRAIM CAFFALL,
PHILIP BRIGGS.