

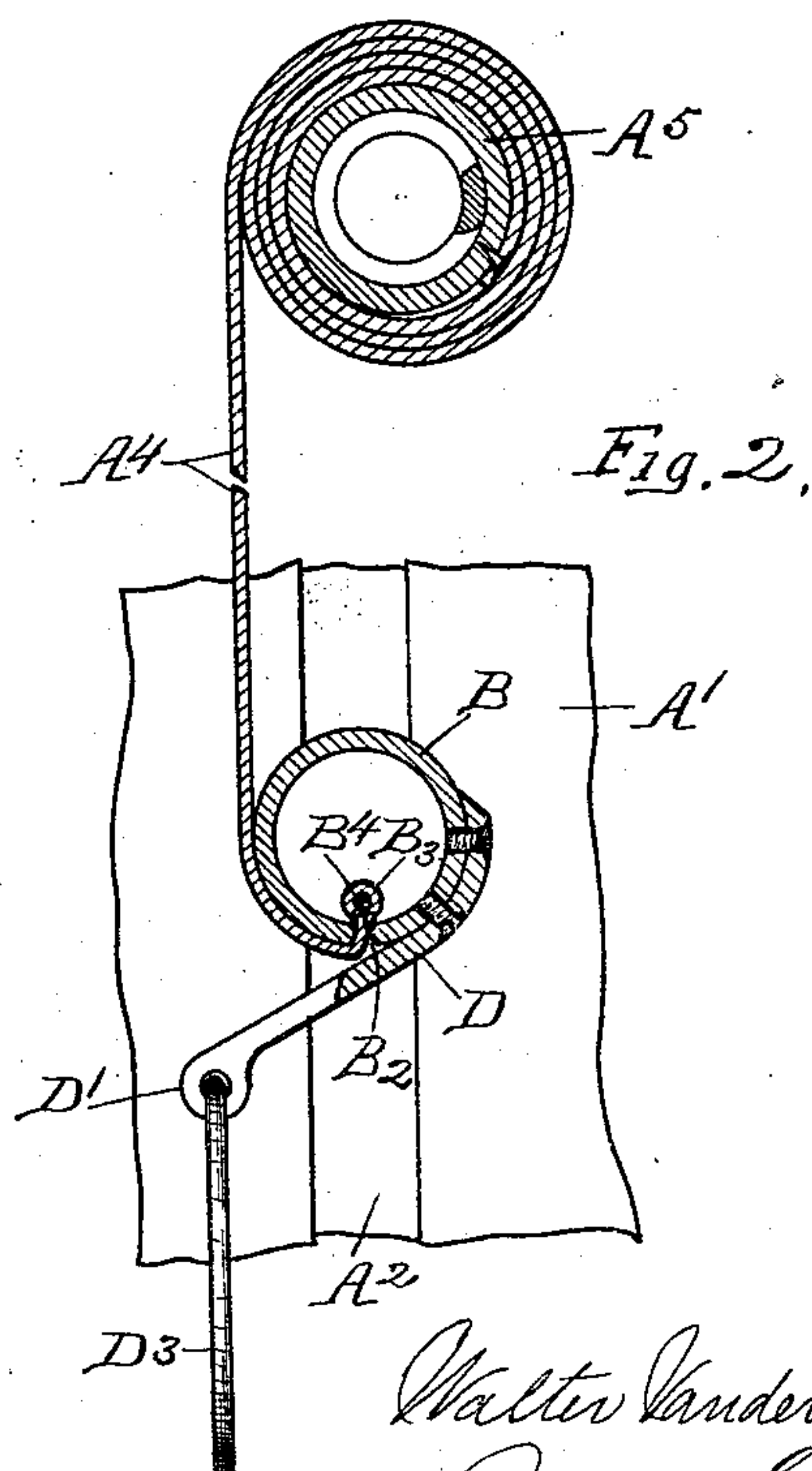
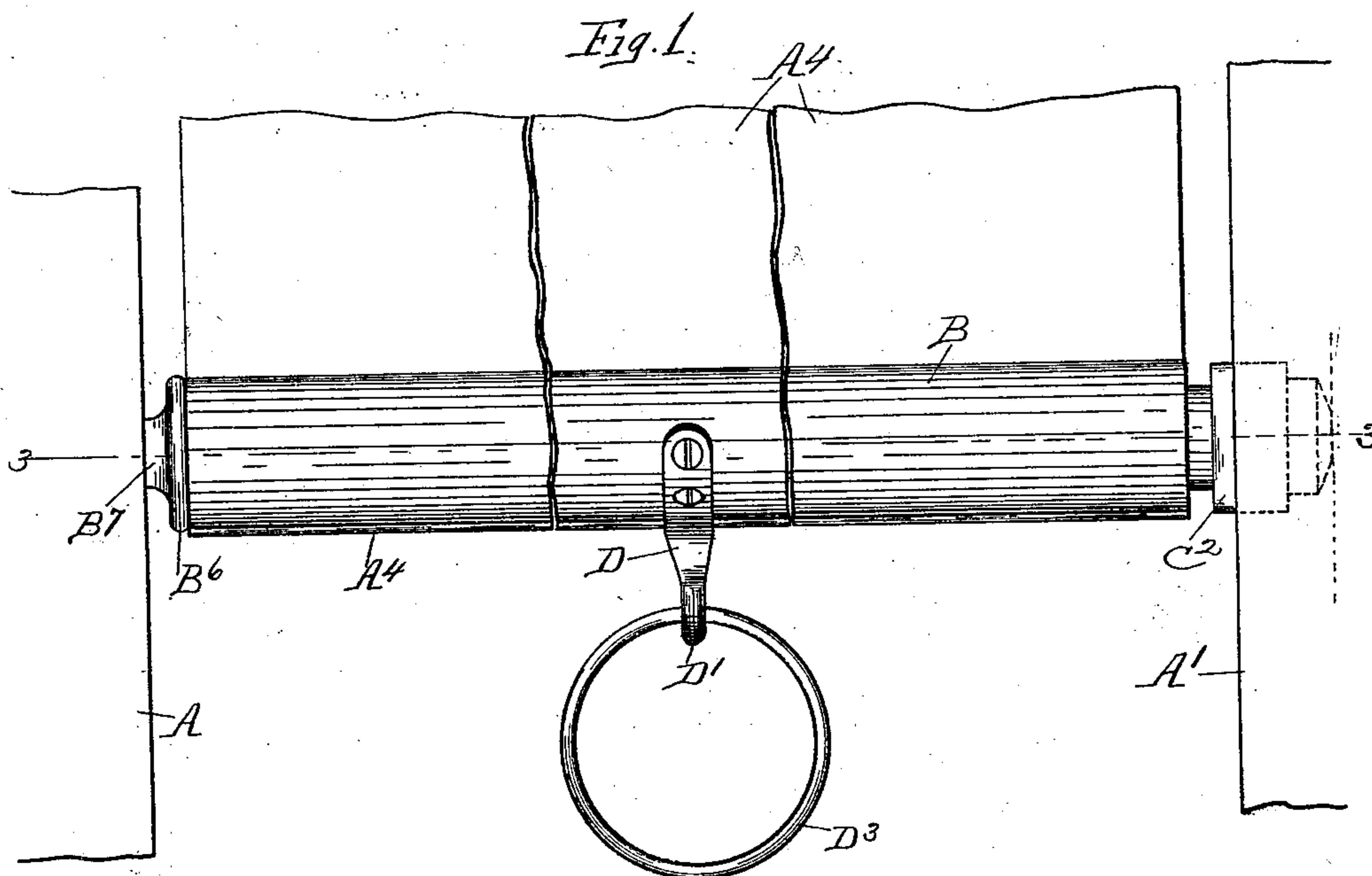
(No Model.)

2 Sheets—Sheet 1.

W. V. H. WILLSON.
CURTAIN STOP.

No. 543,664.

Patented July 30, 1895.



Witnesses:

J. G. Curtis.
L. H. Curtis.

Inventor:

Walter Vander Heyden Willson
By Mosher & Curtis attys.

(No Model.)

2 Sheets—Sheet 2.

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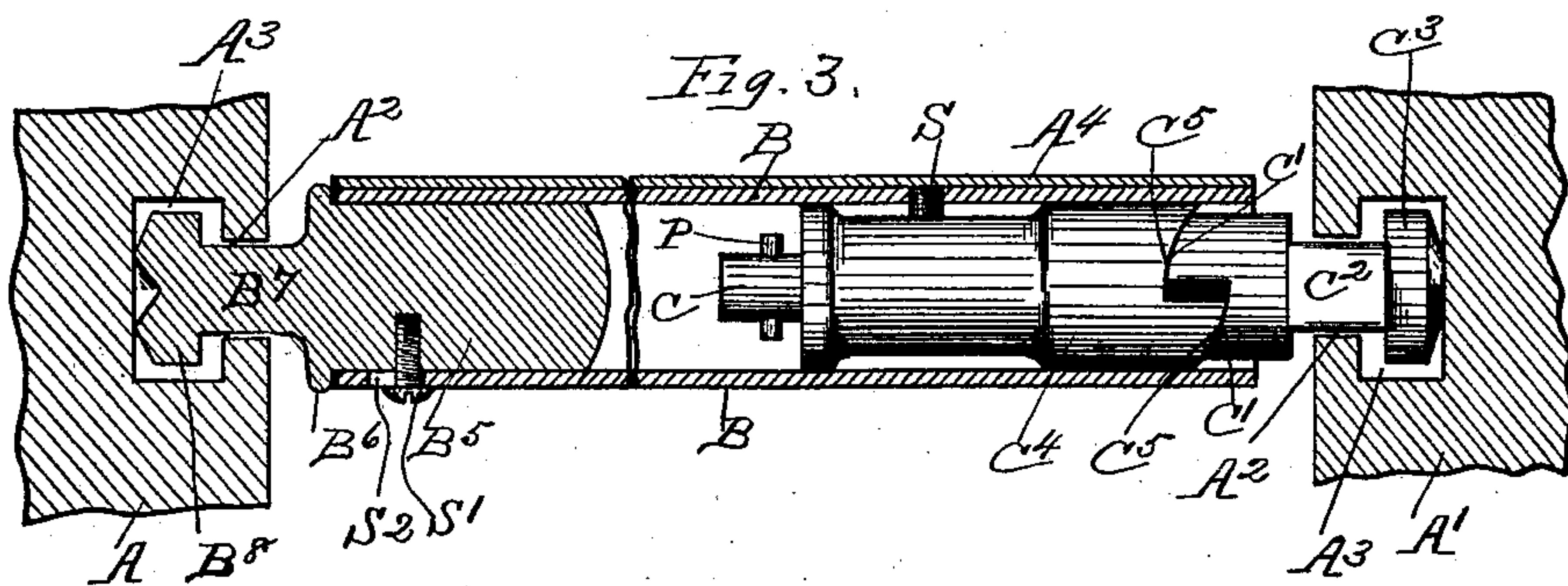


Fig. 4.

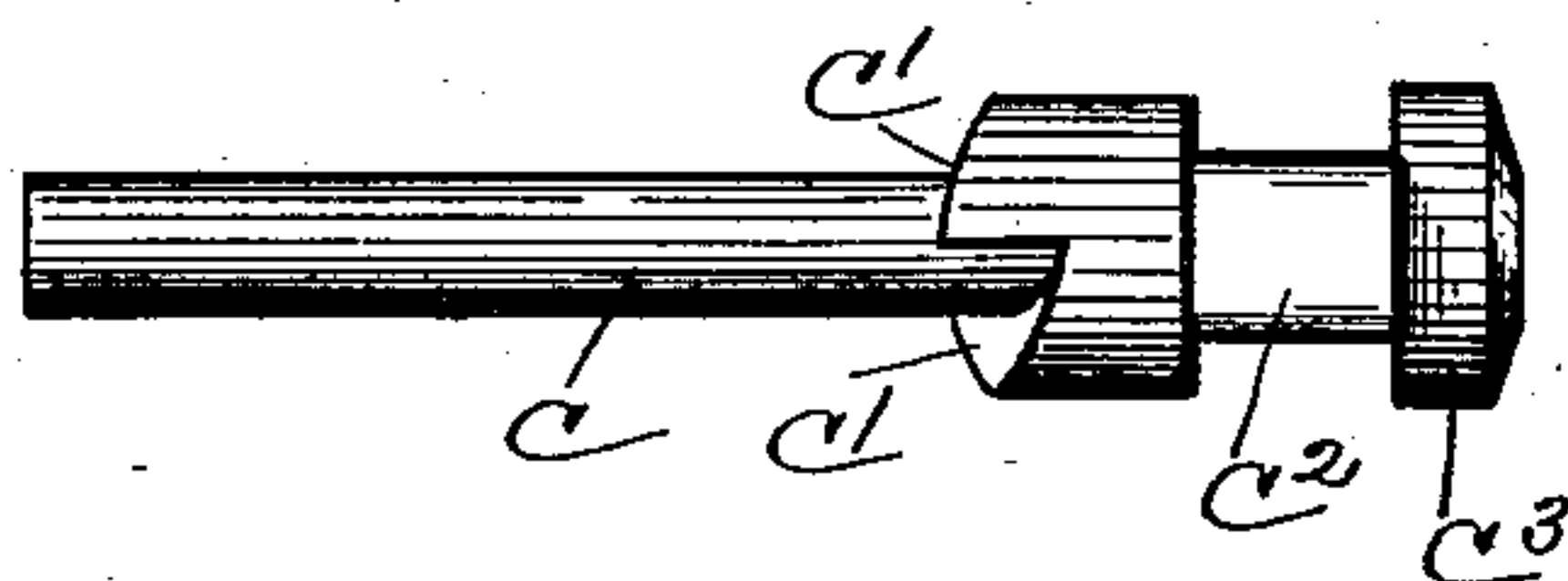


Fig. 5.

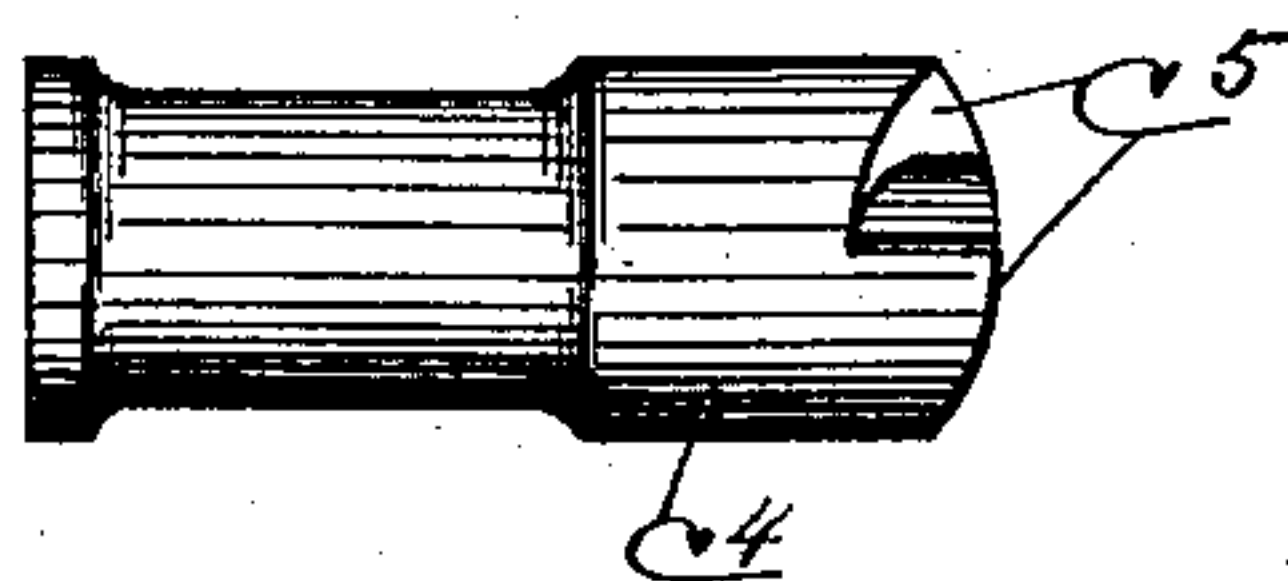


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

WALTER VANDER HEYDEN WILLSON, OF BRUNSWICK, NEW YORK, ASSIGNOR
OF ONE-HALF TO JAMES IRVING, OF SAME PLACE.

CURTAIN-STOP.

SPECIFICATION forming part of Letters Patent No. 543,664, dated July 30, 1895.

Application filed February 5, 1895. Serial No. 537,371. (No model.)

To all whom it may concern:

Be it known that I, WALTER VANDER HEYDEN WILLSON, a citizen of the United States, residing at Brunswick, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Curtain-Stops, of which the following is a specification.

The invention relates to such improvements; and it consists of the novel construction and combination of parts, hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Similar letters refer to similar parts in the several figures therein.

Figure 1 of the drawings is a view in front elevation of the lower part of a curtain provided with my improved stop and a part of the uprights of a window-frame. Fig. 2 is a central vertical cross-section of the same and of a spring-roller for supporting the curtain. Fig. 3 is a horizontal longitudinal section of my improved curtain-stop, taken on the broken line 3 3 in Fig. 1, with the middle portion of the tube broken away and showing the grooved portion of the window-frame. Fig. 4 is a top plan view of the non-rotatable stop-piece detached. Fig. 5 is a similar view of the actuating cam-sleeve detached. Fig. 6 is an end face view of one of the stop-pieces detached.

A and A' represent the sides or uprights of a window-frame or guide-posts, which are each provided with a groove A² having its inner part enlarged to form the wider groove A³.

A⁴ is the curtain, supported at its upper end by a spring-roller A⁵, which may be of any known construction. The lower edge of the curtain is secured to a tube B, open at both ends. I prefer a metallic tube, and as a means for securing the lower end of the curtain to the tube I provide the tube with a narrow longitudinal slot B², adapted to receive the hem B³, formed on the lower end of the curtain, and introduce into the hem a rod or wire B⁴, the diameter of which is made greater than the width of the slot. I then insert in one end of the tube a stop-piece, com-

prising the cylindrical shank B⁵, adapted to fit the interior of the tube, and an annular flange B⁶, larger in diameter than the shank and adapted to bear against the end of the tube; also the contracted cylindrical neck B⁷, adapted to move freely lengthwise of the stop-groove A², and the cylindrical head B⁸, larger in diameter than the neck and adapted to move freely lengthwise of the wider inner portion A³ of the stop-groove. In the other end of the tube I insert a stop-piece, comprising the shank C, having the cam-inclines C' fixed thereon, the vertically-distended neck C², and the head C³. The neck and head are adapted to travel lengthwise of the stop-groove in the window-frame in the same manner as neck B⁷ and head B⁸ of the other stop, except that the neck B⁷ is cylindrical and rotary in its groove, while the neck C² is enlarged vertically, as shown in Fig. 1, partly by dotted lines, whereby it is free to move lengthwise of the stop-groove, but is prevented from acquiring a rotary movement therein. The sleeve C⁴ is adapted to receive and fit the shank C, and is provided with end inclines or cams C⁵, adapted to engage the cams C'. After the sleeve and stop-shank are inserted in the tube the sleeve is secured in the tube by means of the set-screw S, inserted in a screw-threaded aperture in the sleeve, as shown in Fig. 3. The set-screw secures the sleeve and tube together, so that one part partakes of all the movements of the other. The lifting strain of the spring-roller is applied to the tube at one side of its longitudinal center line of gravity and at a distance from such center line equal to the radius of the tube, as shown in Figs. 2 and 3.

The lower end of the curtain being secured to the lower side of the tube is wound by a quarter turn upon the tube. If it is attempted to support the tube by the curtain in such suspended position, a rotary movement is at once imparted to the tube, which tends to bring its axial line in the same vertical plane with the curtain, and the same rotary movement is imparted to the sleeve. The vertically-distended neck C² prevents the shank with the cam-inclines from acquiring a rotary movement, and a movement of the sleeve-cams upon the relatively-fixed cams is estab-

lished which imparts to the sleeve a longitudinal movement relatively to the shank C and head C³, whereby the two stop-pieces are forced apart along the axial line of the tube and into engagement with the bottoms of the stop-grooves, as shown in Fig. 3.

The greater the lifting strain exerted through the curtain upon the tube the greater the power of the cams to force the stops against the window-frames in the bottom of the stop-grooves.

To release the curtain-stops from engagement with the window-frame, so that the curtain can be raised and lowered, it is only necessary to impart to the tube a rotary movement in a direction to wind the curtain upon the tube, thereby releasing the cams from working engagement and permitting the curtain-stops to back away from the window-frame, so that they will easily slide vertically in their grooves.

As a means for imparting to the tube a curtain-winding movement that will release the stops, I secure to the tube midway of its ends a lever or handle D, which has its handle end D' projected across the vertical plane of the curtain, so that a downward pull upon such projection will cause a slight winding movement of the tube upon the curtain sufficient to release the cams and stops. If the projecting handle is suddenly released when the curtain has been drawn to the desired position, the inertia of the tube and inclosed parts is sufficient to operate the cams and stop the curtain almost instantly after the handle projection is released.

When desired, a common curtain-pull—such as a cord and tassel—or ring D³, inserted in an aperture in the projection, may be added as a convenient means for operating the device.

The normal distance apart of the stop-pieces can be easily varied to accommodate the device to window or other openings of different widths, it only being necessary to loosen the set-screw, adjust the device to the required length by slipping the sleeve out of or into the tube, and again locking or securing the parts in place by the set-screw. The pin P in the shank C serves to prevent the disengagement of the sleeve from the shank. I prefer to concave the middle part of the end face of each stop-piece and cut away or bevel the remaining parts of the face from the concave portion to the peripheral edge of the face, as shown.

By beveling or convexing the peripheral portion of the face the stop-pieces will slide more freely in the window-grooves and will not bind, as they would do if the edges were not beveled off and one stop happened to get in advance of the other. By concaving the middle part of the face for a short distance from the center a comparatively sharp frictional edge is produced which will always engage the bottom of the groove with sufficient force to resist the tension of the spring-roller.

The device may be operated independently of the handle D by grasping the tube itself and imparting to it a rotary movement to wind the curtain when it is desired to release the stops or to unwind the curtain when a stronger engagement of the stops is desired.

When the shell of the tube is thin, there is not room for many threads in the screw-aperture, and I prefer to tap the shank B⁵ and connect the shank and tube by a screw S', inserted through the slot S² in the tube, as shown in Fig. 3. The head of the screw engages the exterior of the tube and holds the parts securely in position.

The position of the stop-pieces relatively to each other can be adjusted by loosening the screw and sliding the shank B⁵ lengthwise of the tube and then tightening the screw again.

By the word "tube" I intend to include any rotatable support for the stop-pieces or tips and the cam connections adapted to be secured to one end of the curtain.

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

1. In a curtain-stop, the combination with a spring-roller and tube, of a curtain secured at one end to the roller and at the other end to one side of the tube, a stop-piece on one end of the tube, a non-rotary stop-piece movably connected with the other end of the tube, and a cam-connection between the tube and non-rotary stop-piece, whereby a rotary movement of the tube operates the cam-connection to produce a relative movement of the tube and non-rotary stop-piece longitudinally of the tube, substantially as described.

2. In a curtain-stop, the combination with a spring-roller and tube, of a curtain secured at one end to the roller and at the other end to one side of the tube, a stop-piece on one end of the tube, a non-rotary stop-piece movably secured to the other end of the tube, and a cam-connection having one element of the connection fixed upon the non-rotary stop-piece and the other element fixed upon a separate part movable longitudinally of the tube, and means for securing such movable part in varying positions lengthwise of the tube, substantially as described.

3. In a curtain-stop, the combination with a spring-roller and tube, of a curtain secured at one end to the roller and at the other end to one side of the tube, a stop-piece on one end of the tube, a non-rotary stop-piece movably connected with the other end of the tube, a cam-connection between the tube and non-rotary stop-piece, an operating lever secured to the tube and projecting across the vertical plane of the pendent curtain, and a depending pull secured to the projecting end of the lever, substantially as described.

4. In a curtain-stop, the combination with a spring-roller and a tube having a longitudinal screw slot at one end, of a curtain secured at one end to the roller and at the other end to one side of the tube, a stop-piece in the slotted end of the tube, having in its side a

threaded screw-aperture; an adjusting-screw
inserted in such aperture and slot with its
head in engagement with the slot-walls, a stop-
piece movably connected with the other end
5 of the tube, and operating connections be-
tween the movable stop-piece and tube, sub-
stantially as described.

In testimony whereof I have hereunto set
my hand this 26th day of January, 1895.

WALTER VANDER HEYDEN WILLSON.

Witnesses:

GEO. A. MOSHER,
FRANK C. CURTIS.