

No. 638,314.

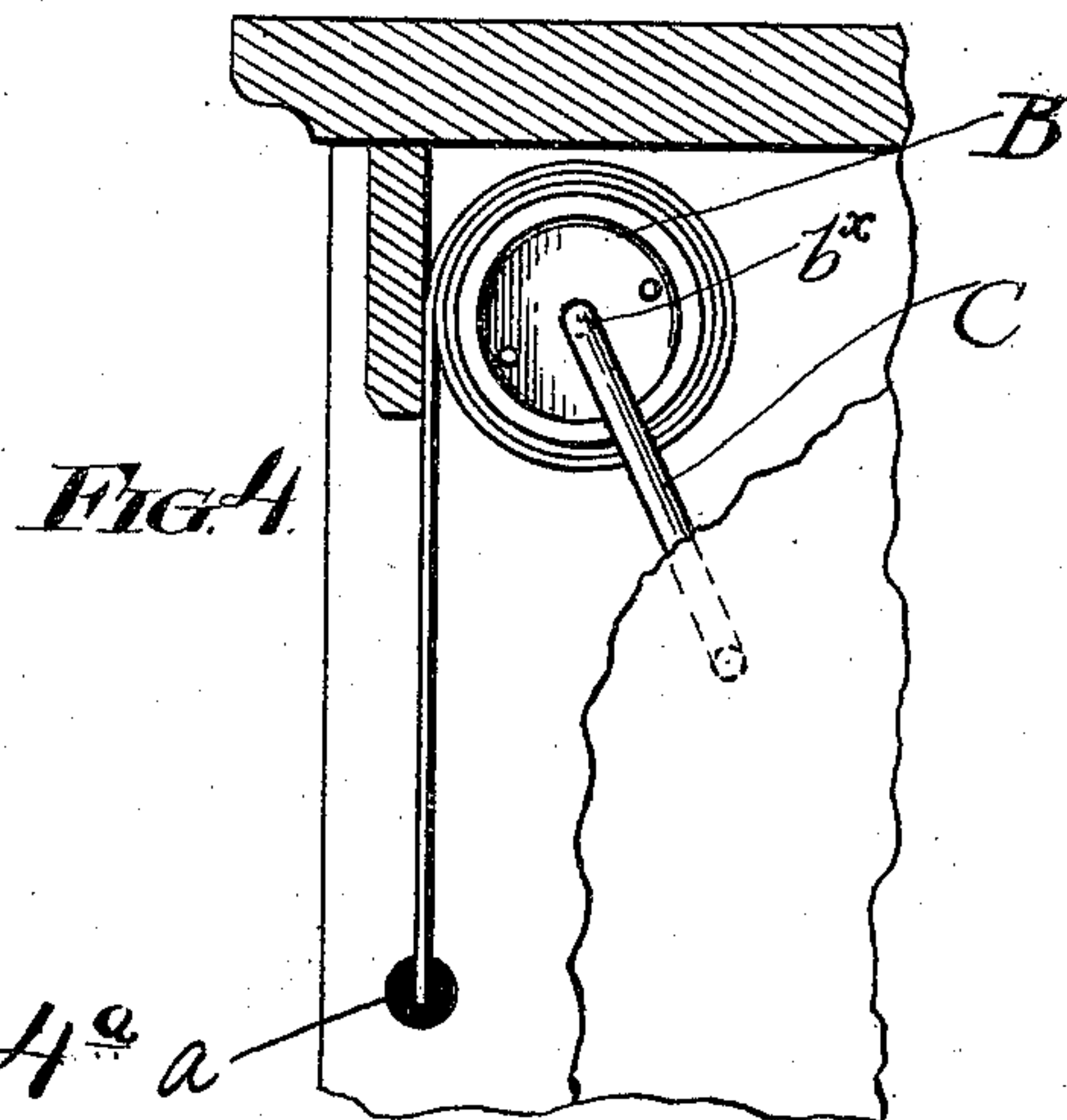
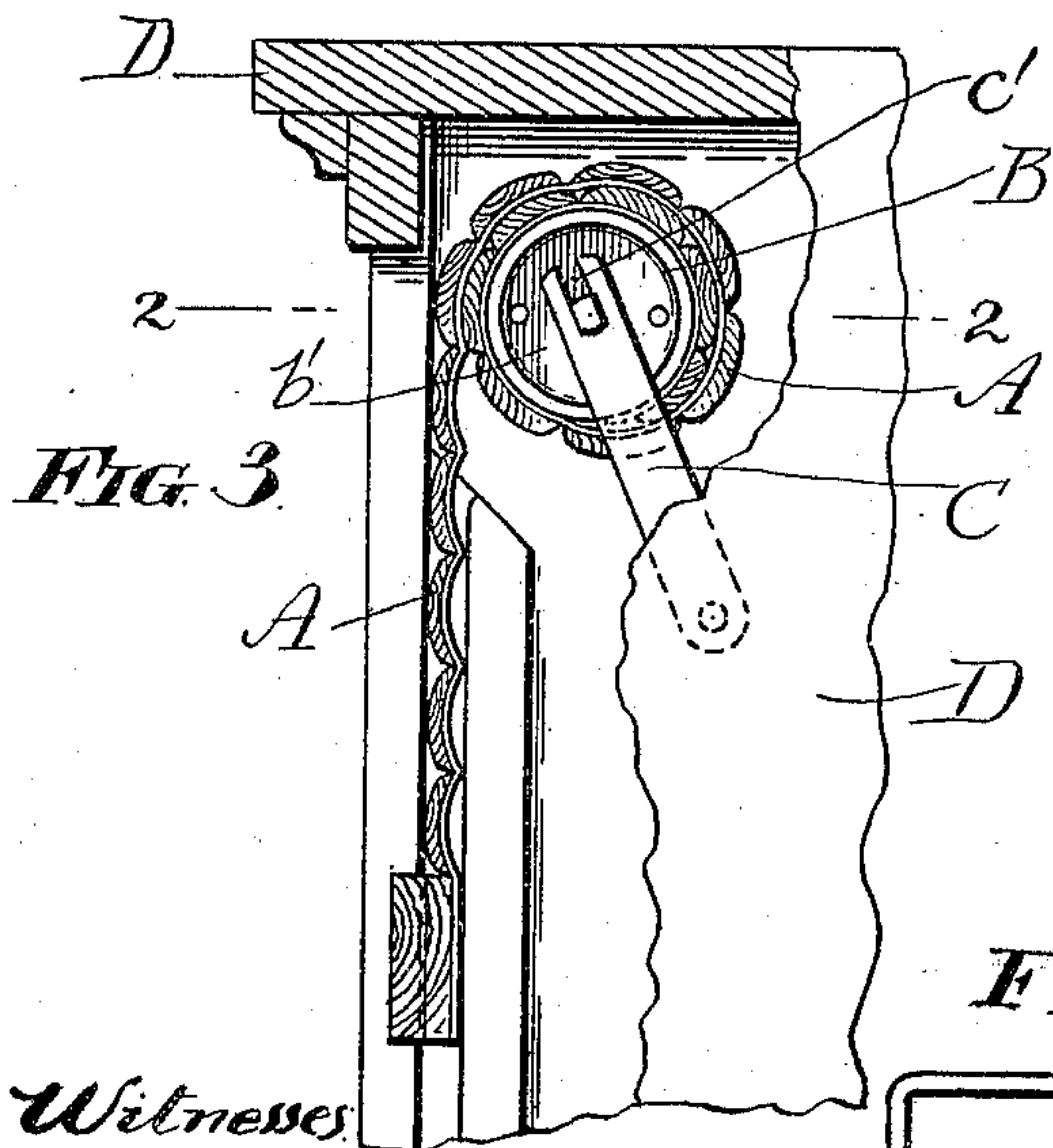
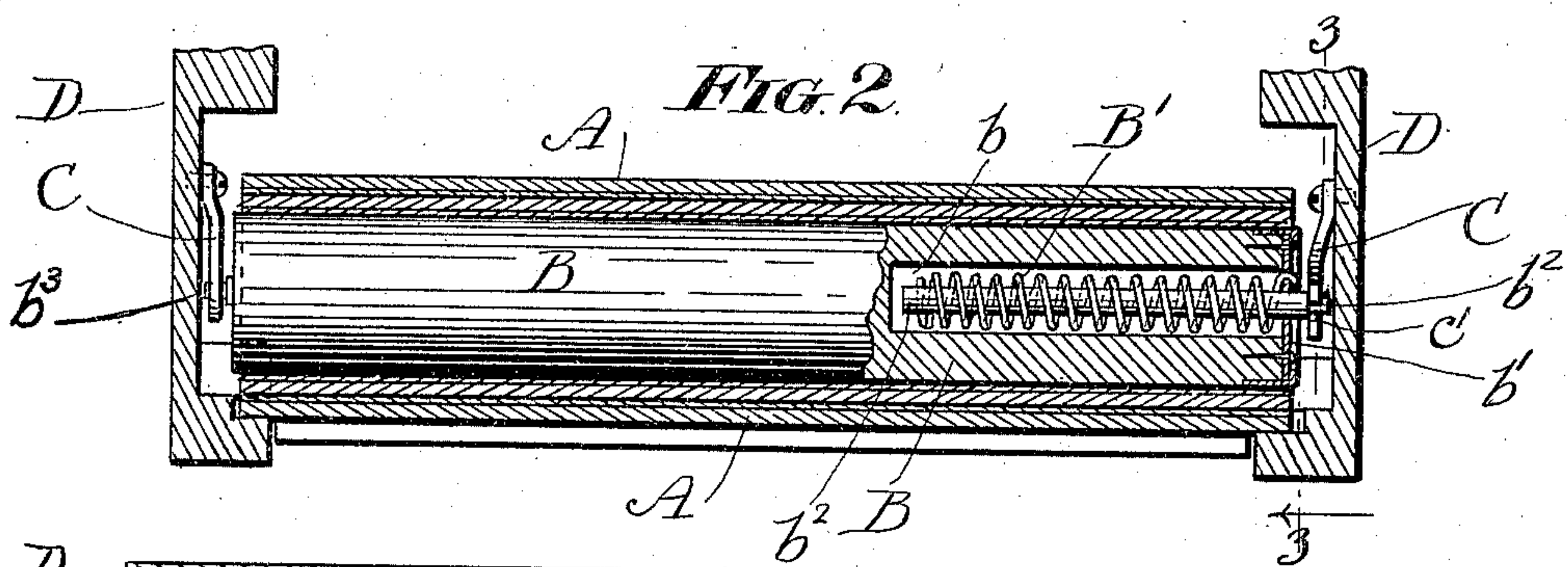
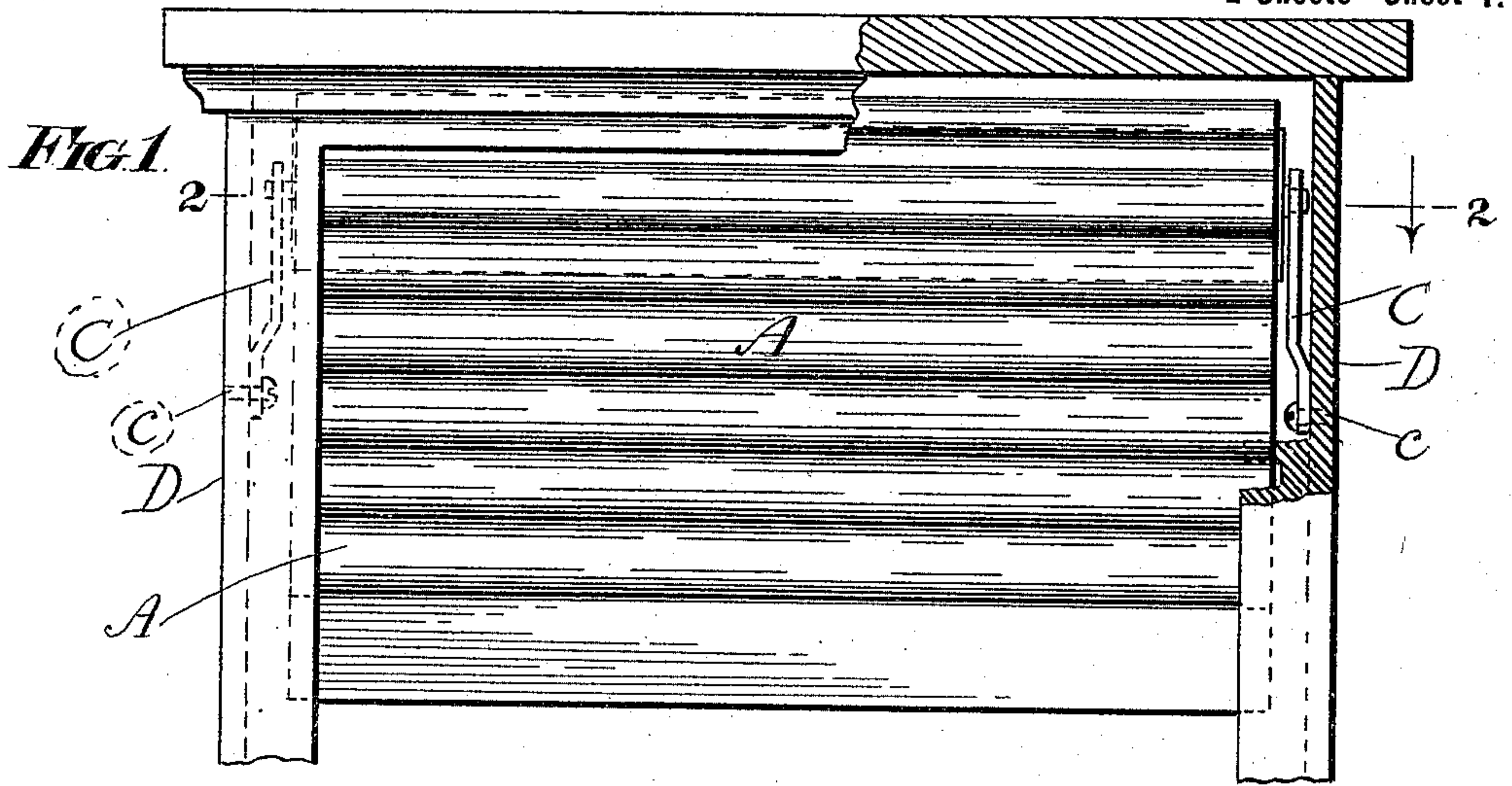
Patented Dec. 5, 1899.

L. J. BLADES.
ROLL CURTAIN.

(Application filed Mar. 16, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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ROLL CURTAIN.

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2 Sheets—Sheet 2.

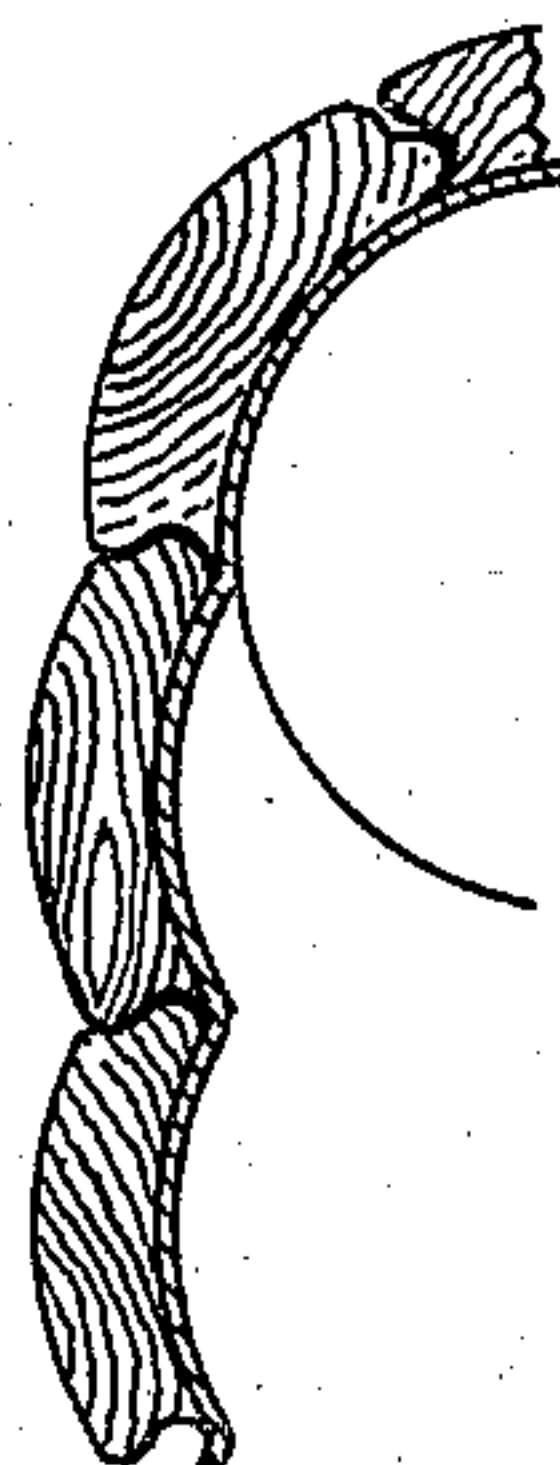
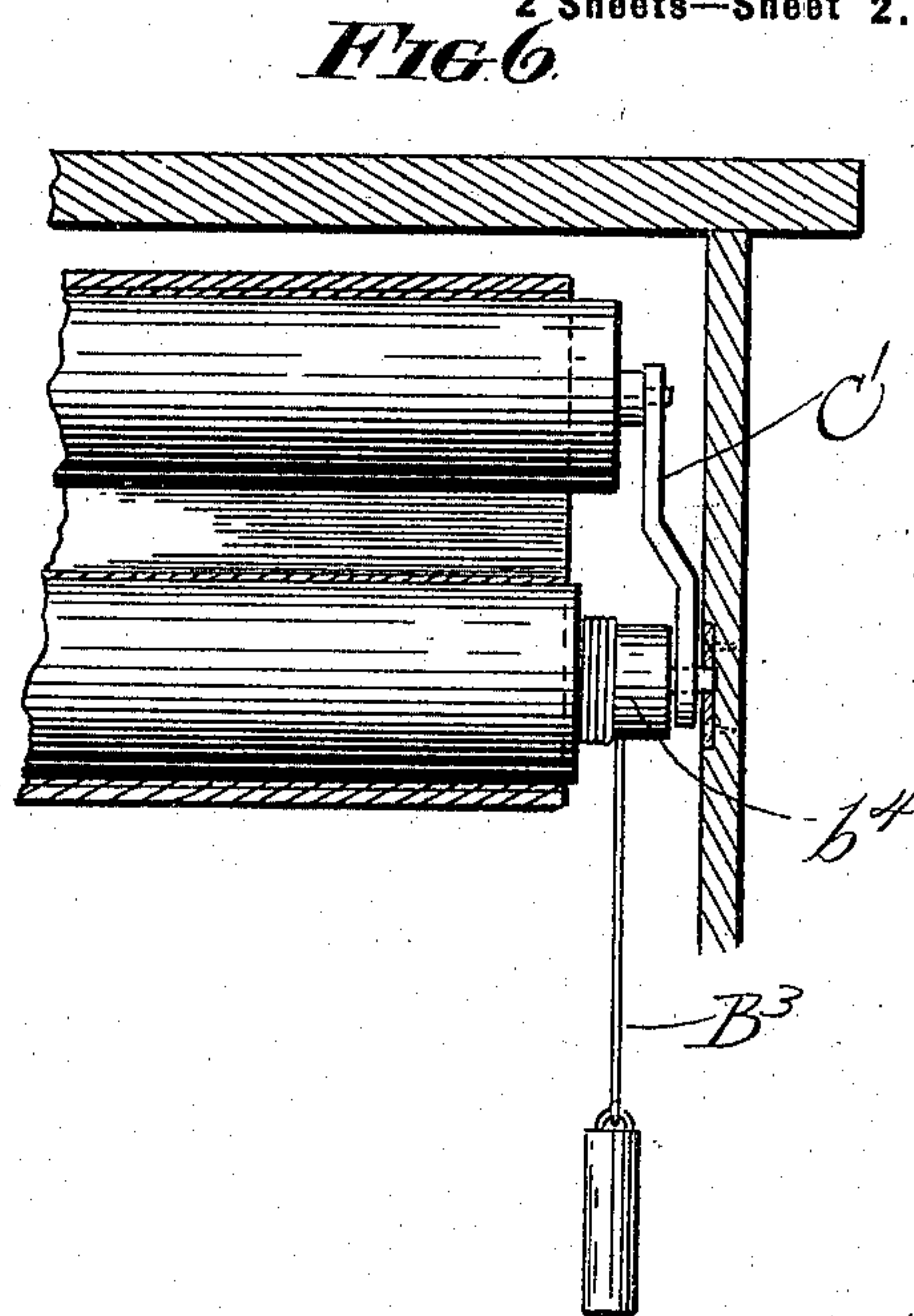
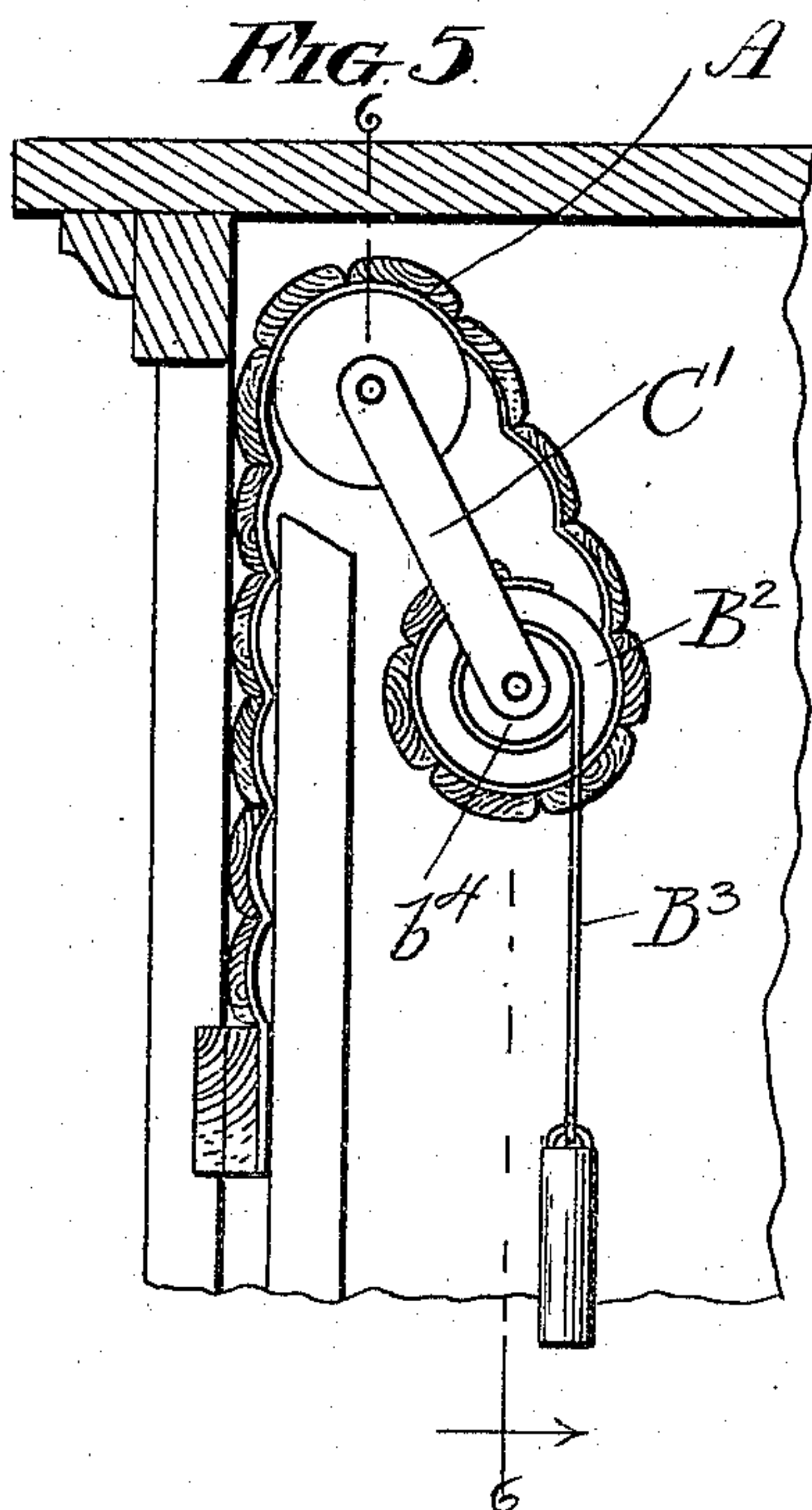


FIG. 7.

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UNITED STATES PATENT OFFICE.

LEONARD J. BLADES, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE NATIONAL
TICKET CASE COMPANY, OF SAME PLACE.

ROLL-CURTAIN.

SPECIFICATION forming part of Letters Patent No. 638,314, dated December 5, 1899.

Application filed March 16, 1898. Serial No. 674,090. (No model.)

To all whom it may concern:

Be it known that I, LEONARD J. BLADES, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Roll-Curtains, of which the following is a specification.

This invention relates to improvements in the construction and method of mounting drop-curtains, and especially that class of such curtains which are composed of a plurality of wooden slats secured to a flexible backing of canvas or the like and commonly used for desks, book, ticket, or file cases, or other furniture. Curtains of this class when made of any considerable length, and especially if arranged to rise and fall in a substantially vertical plane, are found almost always inconvenient and difficult to handle owing to the difficulty of compensating for the shifting weight of the curtain. If, for example, the curtain is simply mounted in guides which pass from the front of the case across the top and down the rear thereof the weight of the curtain will be alternately shifted from front to rear and back again as the curtain is raised or lowered. It is consequently difficult to move such a curtain up when nearly closed or to start it down when nearly open, and except at mid-position it always tends to drop shut or fly open when released. Much the same difficulty obtains when the curtain is coiled upon a spring-roller or the like by which its weight is designed to be counterbalanced. If the spring is strong enough to balance the weight of the curtain when the latter is unrolled, it is almost certain to be too stiff for the weight of the curtain when but partially unrolled, so that if the curtain is released under the latter circumstances it will fly up to the extremity of its run with violence. If the spring is not heavy enough or adjusted to a sufficient tension to balance the weight of the curtain when unrolled, the curtain is hard to open when closed and is liable to drop from any partially-open condition with equal violence.

With these difficulties in view a principal object of the present invention is to provide for the hanging and counterbalancing of drop-curtains in a manner such that the curtain may be easily moved either upward or down from

any position and safely left stationary in any position without fear of its suddenly dropping down or flying up under the force of gravity or an undue counterbalancing tension and without requiring any clutches, gravity-pawls, or other locking devices. Further objects are to generally improve the construction and detail of furnishings of this class.

My invention consists in the matters herein set forth, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a front elevation, partially in section, showing a roll-curtain mounted in accordance with my invention. Fig. 2 is a top plan section thereof taken on line 2 2 of Figs. 1 and 3. Fig. 3 is a side sectional elevation taken on line 3 3 of Fig. 2. Fig. 4 is a similar view showing a slightly-modified construction. Fig. 4^a is a detail showing the construction of the roll-supporting bail in this modification. Fig. 5 is a sectional side elevation showing another method of mounting the curtain in accordance with my improvements. Fig. 6 is a sectional front elevation thereof. Fig. 7 is a sectional detail showing an improved form of slat.

In Figs. 1, 2, and 3 of the drawings, A designates an ordinary wooden-slat curtain secured to and rolling up on a spring shade-roller B in a familiar manner. Any suitable construction of spring-roller may be used, that herein shown being provided with a coiled spring B', located in an axial bore *b* of the roller. One end of said spring is made fast to a plate *b'*, secured to the end of the roller and closing the bore *b*. The other end of said spring is made fast to a wire rod or pin *b*², which projects out through a central aperture in the plate *b'* and serves as a journal for the roller at this end. At its other end the roller rotates upon any suitable pintle *b*³.

CC designate two swinging arms secured to the opposite sides of a supporting-casing D by pivot-pins *c* and projecting thence upwardly and forwardly to receive the journals of the roller B and to thereby movably support the roller and curtain in such a manner as to constantly tend to press the curtain forward against the casing D. This forward pressure is due not only to the weight of the roller and curtain, but to the tension of the spring-roller,

which tension results from its pin b^2 being held in its supporting-arm C in such manner as to prevent the pin from rotating. As herein shown, this engagement between said pin and supporting-arm is effected by flattening the end of the pin and inserting it within a slot c' in the end of said arm after the manner common to the ordinary shade-roller hanging. The tension of the spring, which may be adjusted as desired by winding it more or less tightly before inserting the pin b^2 in the slot C, is such as to constantly tend to wind up the curtain and by its reaction tends to rotate the pin b^2 in an opposite direction. This tendency of the pin b^2 to rotate is transmitted to the supporting-arm C and tends to swing the latter forwardly about its pivot c and thereby unites with the action of gravity in pressing the curtain against the casing. The resulting friction due to this pressure will, in a properly designed and adjusted construction, suffice to hold the curtain stationary in any position in which it may be placed and whether at the upper or lower extremity of its movements. The tension of the spring will normally be so adjusted that its counterbalancing action, in connection with the friction of the curtain on the casing, will prevent the curtain from falling or slipping down even when almost completely unrolled. The lifting of the curtain relieves the friction due to its weight and permits the spring-roller to wind up, but the release of the curtain at any point will bring the friction effect into play again and prevent a further movement. The intensity of the friction between the curtain and casing may obviously be adjusted within considerably wide limits by altering the angle of the swinging supporting-arm C, it being evident that if this angle is made very great a wedging effect will result which will materially increase the friction. The variation in the effective diameter of the roller as a greater or less number of turns of the curtain are wound thereon will in the same manner somewhat vary the friction effect in different parts of the curtain movement, but is found in practice not to seriously interfere with successful results.

In the modification of the foregoing construction shown in Fig. 4 the swinging arms C instead of being made separate are made in the form of a bail in one piece with each other and with a connecting-rod b^x , which forms a spindle upon which the roller revolves and to which the spring is attached, this rod b^x corresponding with the pin b^2 of the construction previously described. The curtain in this figure is merely a flexible sheet without slats, but herein shown as provided with a heavy strip or weight a along its lower edge, and it will be understood that my invention is applicable to and intended to cover curtains of this form also.

In order to obtain a useful friction effect between the curtain and casing, it is not strictly necessary that the roller which supports the

curtain at this point should be that upon which the curtain is wound, (although considerations of compactness make that construction most convenient and desirable,) since a mere idle or guide roller movably supported in the manner described at the top of the vertical run of the curtain will force the latter against the casing. A construction of this kind is shown, for example, in Figs. 5 and 6, the torsional or recoiling roller B^2 in these views being journaled on the pivotal axis of the swinging arms C', although it might be otherwise located. The torsional or rewinding action of the roller B^2 in this construction is furthermore effected by a weighted cord B^3 , wound about a drum b^4 at the end of the roller; but a spring-roller might obviously be used in this construction as well as in that first described, while on the other hand a gravity-actuated roller might in some cases be used in the said first construction, although the spring-roller is considered most desirable under any ordinary circumstances and is particularly important in view of its peculiar action in inducing friction between the curtain and casing.

While my broad invention as heretofore described is not confined to any particular construction of curtain or roller, I have shown in Fig. 7 an improved form of slat, which is curved on its inner surface to correspond with the curve of its supporting-roller, with the result that the pull on the canvas is always tangential to the surface of the slat to which it is glued, so that the tendency to tear the canvas from the slat is largely done away with.

I claim as my invention—

1. A drop-curtain mounting comprising a revoluble curtain-carrying roller, a curtain depending from said roller, supporting means permitting an inclined bodily movement of the roller, and a friction-surface adjacent to the roller and toward which the latter is normally drawn by the gravity of the parts to produce a resulting friction-resisting movement of the curtain.
2. A drop-curtain mounting, comprising pivoted arms movably supporting the curtain-roller, and a spring applied between the roller and an arm, tending to rewind the curtain and to press it into frictional contact with the adjacent casing.
3. A drop-curtain mounting, comprising a casing, a curtain-supporting roller, and a curtain depending from said roller, arms pivoted to the casing and inclined upwardly and forwardly toward an opposing surface of the casing and movably supporting said roller, whereby the weight of the curtain serves to normally force the roller toward said opposing surface and produce a frictional resistance to the movement of the curtain.
4. A drop-curtain mounting, comprising a casing, a curtain-carrying roller, and a curtain depending from said roller, arms pivoted to the casing and inclined upwardly and forwardly toward an opposing surface of the cas-

ing and movably supporting said roller, and a spring applied between said arms and roller tending to wind up the curtain.

5 5. The combination with a casing of a movably-mounted curtain-roller, a curtain wound thereon, and a spring applied to rotate the roller and to press the same toward the casing to hold the curtain in frictional contact therewith.

10 6. The combination with a casing, of arms pivoted to said casing, a roller movably supported by said arms, a drop-curtain wound upon said roller, and a torsion-spring secured at one end to the roller and at its other end to
15 one of the arms and tending to wind up the curtain and press the same into frictional contact with the casing.

7. The combination with a drop-curtain consisting of a flexible sheet having transverse
20 slats secured thereto, of a casing having guides for said curtain, a supporting-roller located in the casing at the upper end of said guides, means for movably supporting said roller, and means for pressing the roller to-
25 ward the guide to produce frictional resistance between the curtain and casing.

8. The combination with a drop-curtain consisting of a flexible sheet having transverse

slats secured thereto, of a casing having guides for said curtain, a supporting-roller 30 located at the upper ends of said guides, and to which the curtain is secured, swinging arms pivoted to the casing and movably supporting said roller at their free ends, and a torsional spring applied between one of the 35 arms and the roller tending to wind up the curtain on the latter and to press the curtain toward the casing.

9. A slat curtain consisting of a flexible sheet and transverse slats secured to said 40 sheet, said slats being concave on their sheet-engaging sides.

10. The combination with a curtain-roller of a slat curtain consisting of a flexible sheet and transverse slats secured to said sheet and 45 made concave on their inner sides to curve around the roller when the curtain is wound thereon.

In testimony that I claim the foregoing as my invention I affix my signature hereto, in 50 the presence of two subscribing witnesses, this 3d day of March, 1898.

LEONARD J. BLADES.

Witnesses:

HENRY W. CARTER,
ALBERT H. GRAVES.