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W. A. MORRISON & C. L. AMES.

LEG FOR WARDROBE BEDS.

No. 505,411. Patented Sept. 19, 1893.

Fig 1.

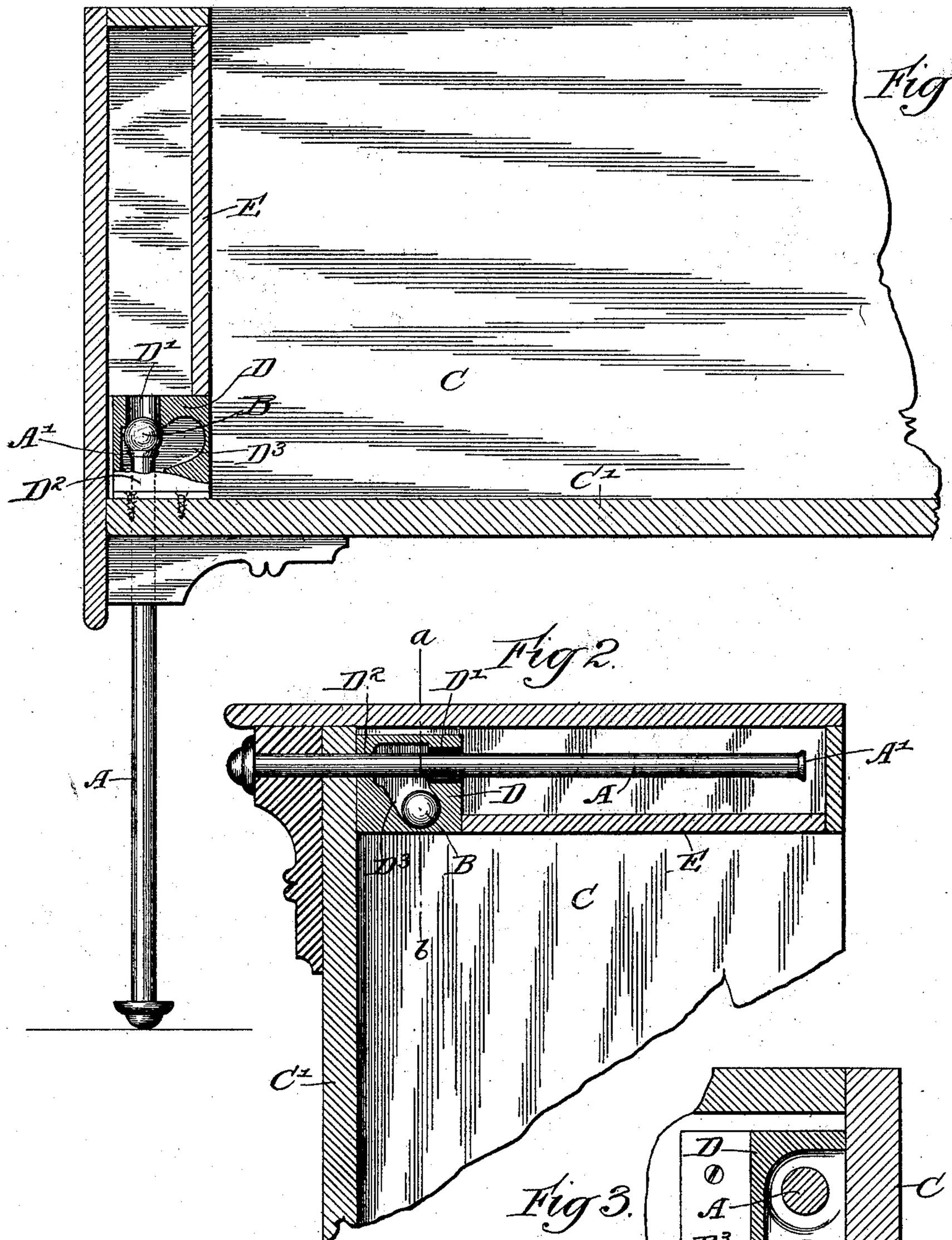

Fig 2.

Fig 3.

Fig 4.

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LEG FOR WARDROBE BEDS.

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Fig. 5.

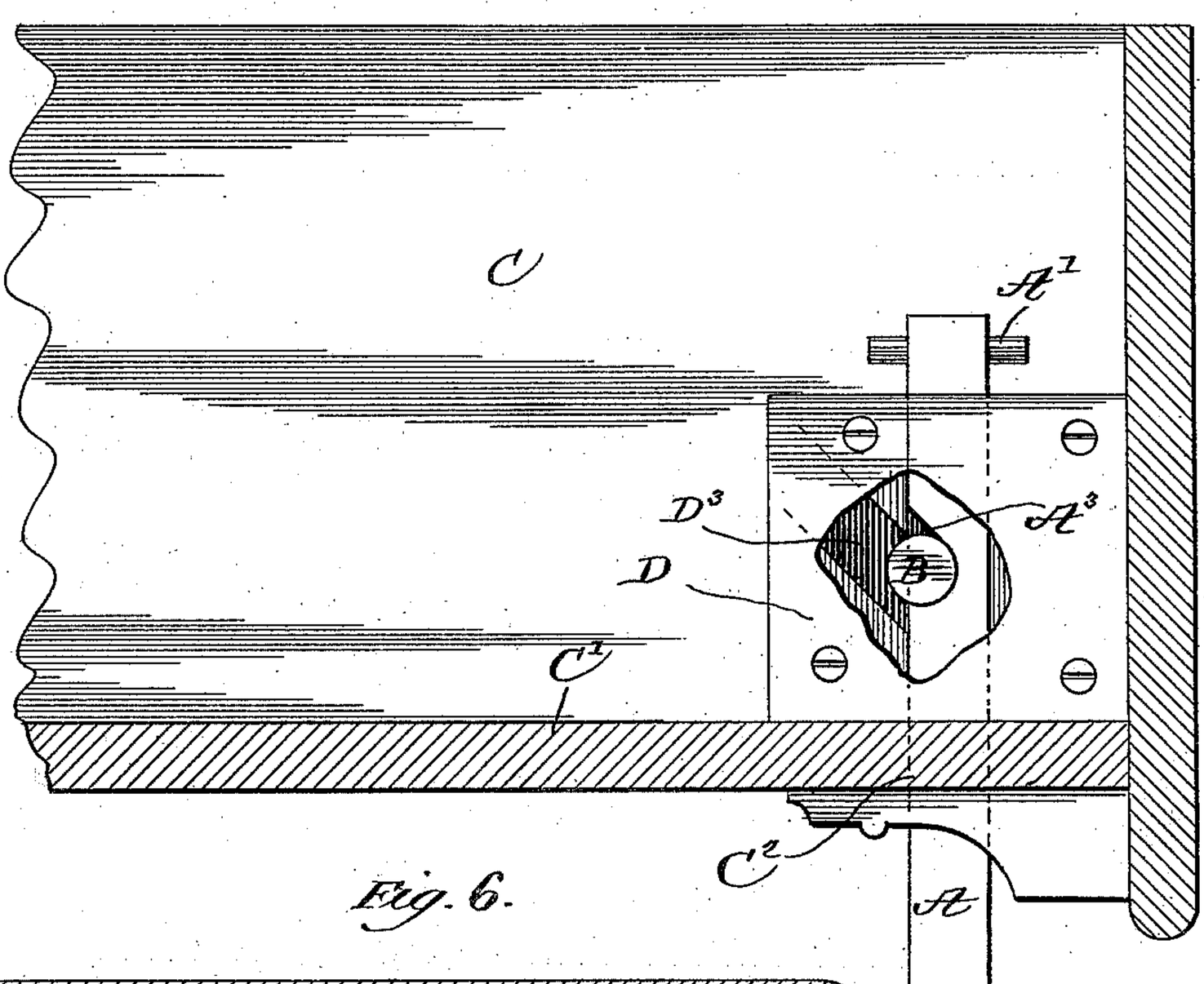


Fig. 6.

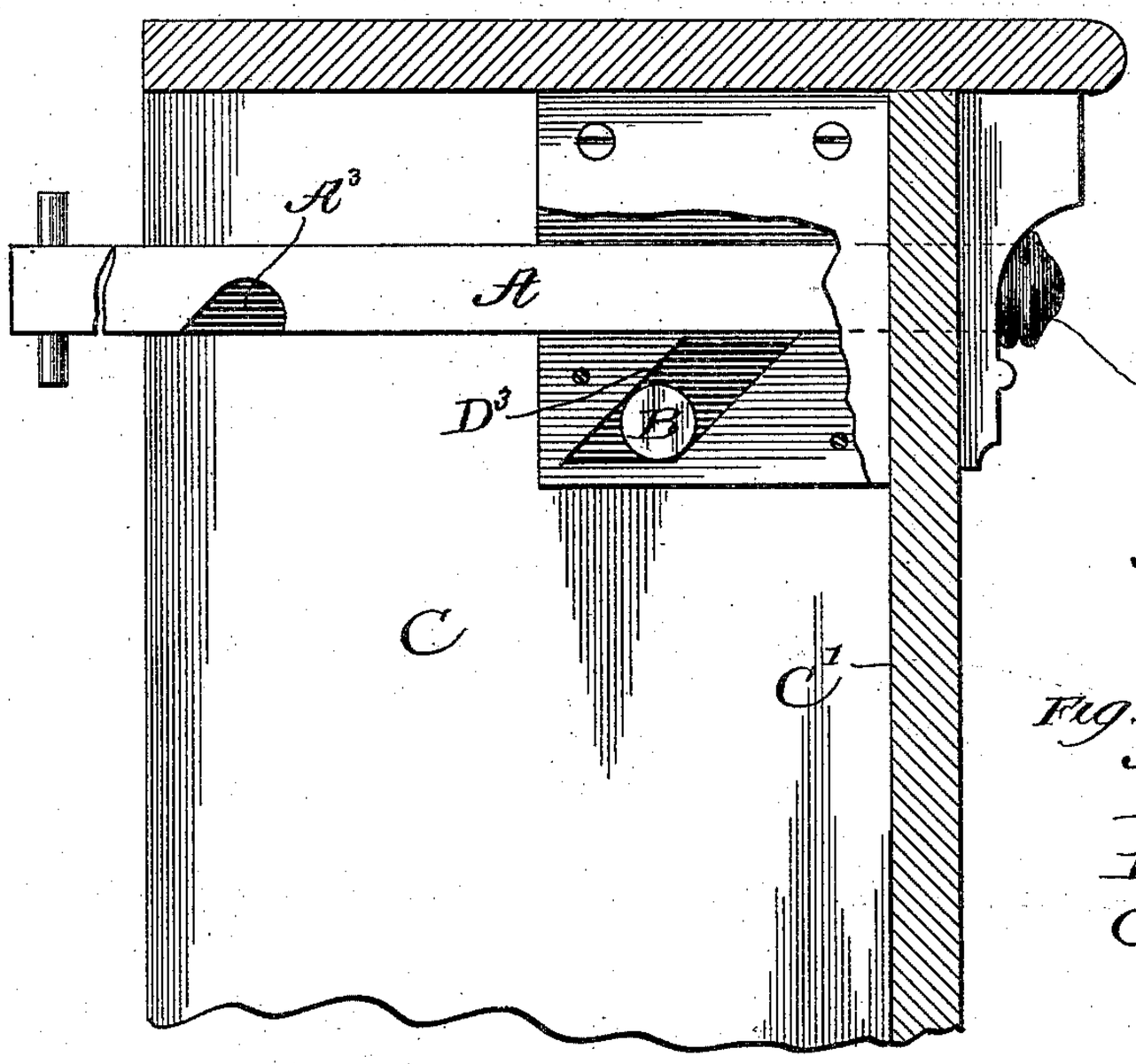
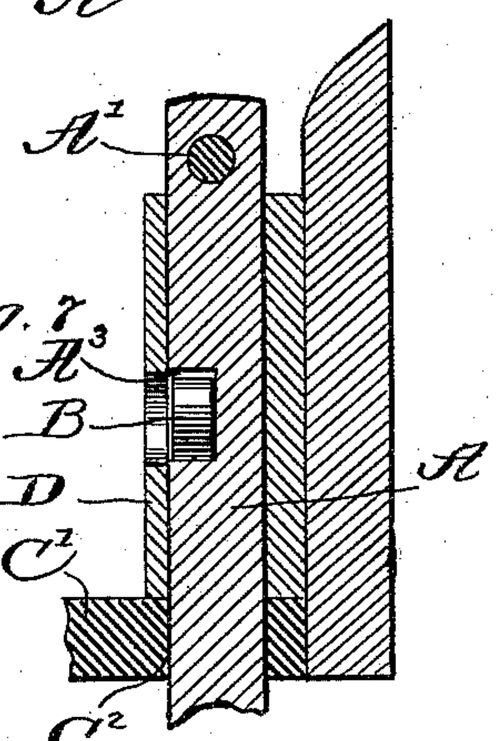


Fig. 7.



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LEG FOR WARDROBE BEDS.

No. 505,411. Patented Sept. 19, 1893.

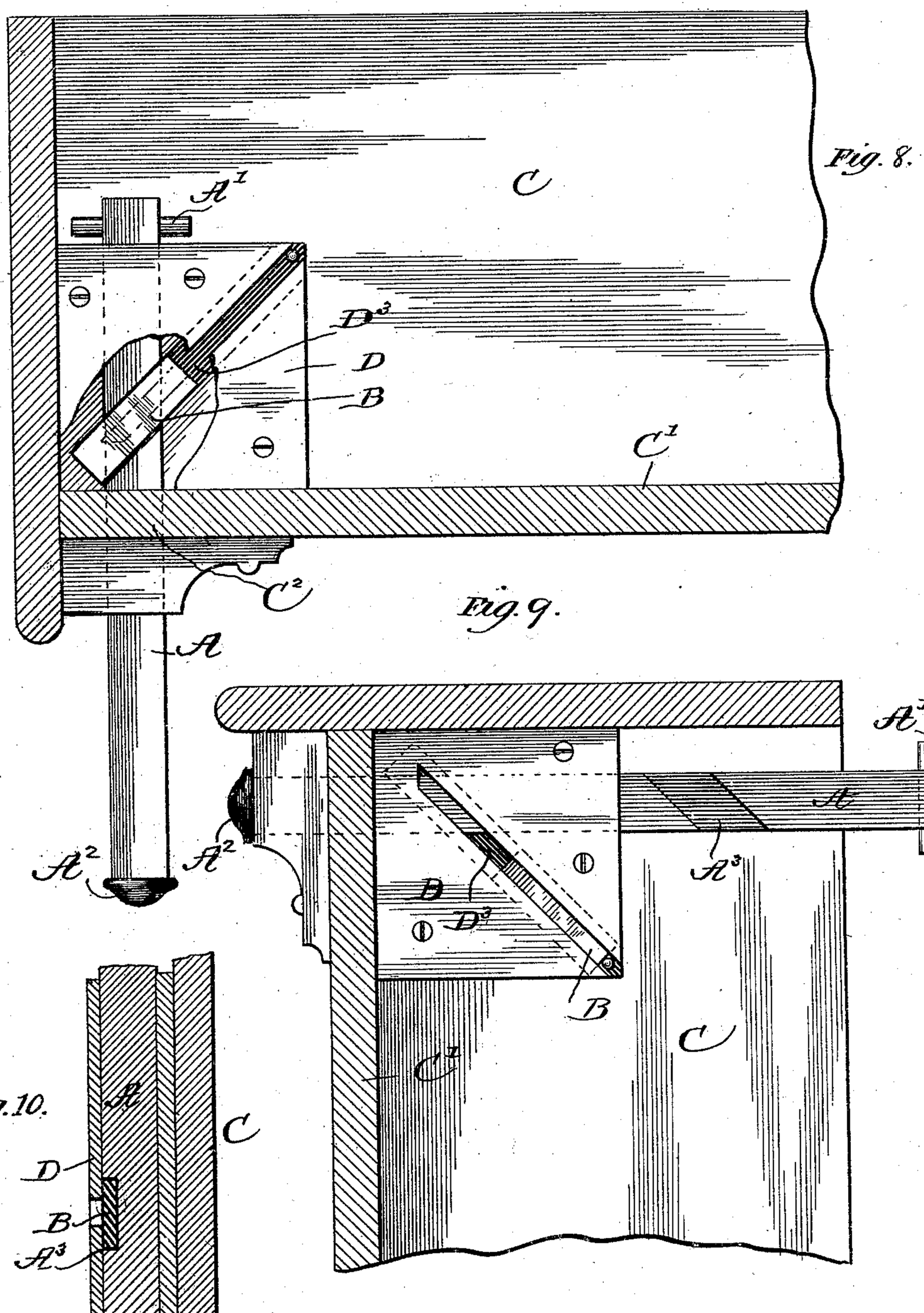

Fig. 8.

Fig. 9.

Fig. 10.

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W. A. MORRISON & C. L. AMES.

LEG FOR WARDROBE BEDS.

No. 505,411. Patented Sept. 19, 1893.

Fig. 11.

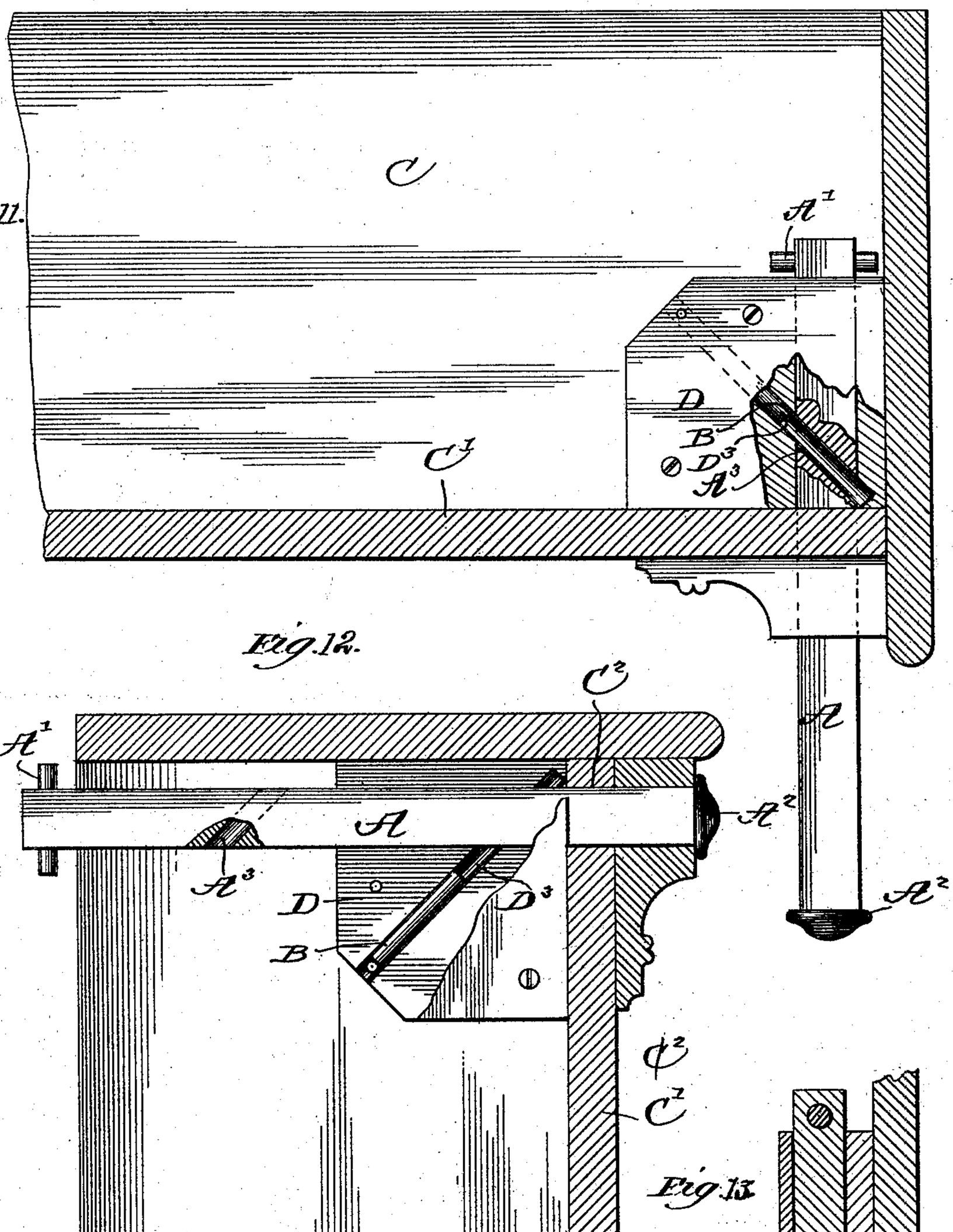
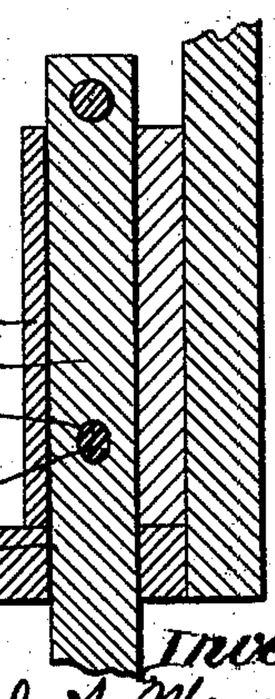


Fig. 12.

Fig. 13.



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UNITED STATES PATENT OFFICE.

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LEG FOR WARDROBE-BEDS.

SPECIFICATION forming part of Letters Patent No. 505,411, dated September 19, 1893.

Application filed July 3, 1890. Serial No. 357,624. (No model.)

To all whom it may concern:

Be it known that we, WILLARD A. MORRISON and CHARLES L. AMES, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Furniture-Legs; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The improvement relates particularly to a furniture leg which is to be applied to a folding section of furniture and arranged to lie in a way in said section when folded into the vertical position and to fall by gravity from said way when said section is opened into the horizontal position for use.

The improvement involves the application of means for automatically locking the leg when the latter is extended from the said section and automatically unlocking said leg when said section is folded. For this purpose, a gravity key, controlled by an inclined way, is used as hereinafter set forth.

The details of the application of this gravity key may be considerably varied. We deem it sufficient to show four modifications of such application. It is thought that after showing these, persons familiar with this art will fully understand the application of our improvement in all cases.

In the accompanying drawings—Figure 1 is a sectional view of the free end of the movable section of a wardrobe bed in the horizontal position. Fig. 2 is a view of the same in the vertical position, with the leg folded. Fig. 3 is a section in line *a*—*b* of Fig. 2 looking to the bottom of the bed. Fig. 4 is a section of the upper end of the leg shown in Figs. 1 and 2. Fig. 5 is a sectional view of the free end of the movable section of a wardrobe bed in the horizontal position, having our improvement applied in another form. Fig. 6 is a view of the same in the vertical position, with the leg folded. Fig. 7 is a detail section of the form shown in Figs. 5 and 6. Figs. 8, 9, and 10 are similar views to Figs. 5, 6, and 7, respectively, of another form of our improvement. Figs 11, 12, and 13 are similar views to Figs. 5, 6, and 7, respectively, of still another form of our improvement.

Referring first to Figs. 1, 2, 3, and 4, A is the leg, B is the gravity key, and C is a portion of the movable section of a wardrobe bed hinged at one end in a horizontal line, as is usual. The leg A extends loosely through a way C^2 in the floor C′ of the bed C perpendicularly to such floor. D is a hollow block, preferably of cast-iron, surrounding the leg A and secured to the bed C. The upper end of the leg A is provided with a head A′ and at its lower end is provided with a foot A^2. The foot prevents the leg from extending too far into the bed and the head prevents it from falling out of the floor of the bed. The opening D′ in the upper wall of the block D is a little larger than the head A′ in order that the latter may pass downward into said block. The opening D^2 in the lower wall of said block is smaller than said head in order that the latter may not pass downward through said opening. The way C^2 and the openings D^2 and D′ constitute the complete way in which the leg A loosely rests, so controlled as to be allowed to be shifted only in a direction perpendicular to the floor C′ of the bed. D^3 is an inclined way or passage within the block D extending from the side of the leg A which is toward the head of the bed into the path of said leg. The end of said inclined way toward the hinge of the bed is called the forward end and the opposite end is called the rear end of said inclined way. It is in a plane parallel to and inclined over the hinge of said section, so that when the latter is in the vertical position, the end of said way the farther from said leg will be the lower and will be the higher when said section is in the horizontal position. This way contains the key B, which is, in this case, a sphere of metal or other suitable material. This sphere or key is a little larger than the opening D′ in the upper portion of the block D (which opening is the path of said leg) so that said sphere cannot pass through said opening. The upper end of the leg is concave, as shown in Fig. 4. When the bed is in the horizontal position, as shown in Fig. 1, the leg falls by gravity until the head A′ is caught by the lower wall of the block D at the opening D^2. As the inclination of the way D^3 is toward said leg, said key rolls against the leg when

the bed is turned into the horizontal position, and as soon as said leg has fallen completely below the key, the latter will roll into the concavity in the head of the leg. Thus, when the foot of the leg A strikes the floor, the downward movement of the leg is arrested and said leg then presses the key B against the upper wall of the block D at the opening D′, and, since said key is larger than said opening D′, said wall prevents said key from rising farther and said key prevents said leg from rising farther. Thus the latter is locked. When the bed is raised from the horizontal position so that a line extending through said key and the length of said leg becomes horizontal, said key falls by gravity from between said head and said upper wall of the block D outward into what is now the lower end of the way D^3, so that said leg may then be pushed by the hand inward into the position shown by Fig. 2. On lifting the bed, the latter will usually slip upward a little on said leg A before the latter is lifted, so that the key may also descend a little and be quite clear of the upper wall of the block D. It is to be noted that the locking and unlocking of the leg by the key are entirely automatic.

Referring now to Figs. 5, 6, and 7, the head of the leg A does not at any time descend into the block D. The opening D′ is no larger than the body of the leg A, so that the head A′ is stopped upon reaching the upper face of said block. It is obvious that under this arrangement the key B cannot fall between the upper wall of the block D and the head of the leg A. A recess A^3 is cut into the leg A in such position as to be in line with a way D^3 when the leg is in its extended position, such way being similar to the way D^3 in Figs. 1 and 2. The depth of said recess A^3 is, however, only sufficient to partially admit the key B so that when the latter has rolled to the lower limit of the way D^3, it will be arrested in such position as to have beneath it the lower wall of said recess A^3 and above it the upper wall of the block D. When the key is in this position, the leg A cannot move upward; but when the bed is turned into the upright position, the key will, by its gravity, fall through the way D^3 out of the path of said leg, after which the latter may be pushed inward by hand into the position shown in Fig. 6. In this form, the key is a cylinder instead of a sphere.

In Figs. 8, 9, and 10, the construction is almost like that last described. The difference consists in the use of a sliding key in the shape of a shaft or elongated plate or block arranged to fall into one of the recesses A^3 in the side of the leg A which is parallel with the way D^3, said way extending across the path of the leg so that each end of the key will be directly below a portion of the wall of the block D, and the middle of said key will oppose the elevation of the leg.

The form shown in Figs. 11, 12, and 13 differs but little from that last described. A sliding key is used, but the recess A^3 extends midway through the leg A in such position as to be in line with the way D^3 when the leg is in its extended position, and said key is shown longer than the portion of the path of the key extending across the path of the leg so that only the middle portion of said key lies in the path of the leg, the ends being engaged by the walls of said inclined way. A comparison of these four forms shows that each has a leg arranged loosely in a way which is perpendicular to the bottom of the folding section of furniture and a gravity key controlled by an inclined way at the side of said leg toward the hinge of the section and extending into the path of said leg, and which is in a plane parallel to and extending over the hinge of said section, so that when said section is turned into the horizontal position, the leg will fall by gravity into the extended position, and the key will move by gravity into the path of said leg and lock it. It will be seen, also, that each of said keys is free—that is to say, it is not secured in such manner as to prevent it from shifting bodily and receiving direction from said way. It is to be noted that the keys shown in Figs. 1 and 5 are similar in that they are both round and move by rolling.

When the leg is applied to a folding bed, a housing, E, Figs. 1 and 2, may be used to inclose the space occupied by the leg when folded. Thus the bedding may be kept out of the way of said leg.

We claim as our invention—

1. In leg attachments for folding beds, the combination of a vertical way in which said leg slides a leg sliding therein, an inclined way extending into the path of said leg, with a free gravity key playing in said inclined way, said key being of such a size that it will extend into the path of said leg, a portion of said key being engaged by the walls of said vertical way to prevent the leg from entering, substantially as described.

2. In leg attachments for folding beds, the combination of a casing secured at the foot of the bed, said casing having a slot for the insertion of the leg and a slot of larger area in cross section extending from the slot carrying the leg at an angle, said slot having a ball therein which falls by gravity into the lower end of the larger slot out of the path of travel of the leg when the bed is folded, and over the end of the leg when the bed is unfolded, substantially as described.

In testimony whereof we affix our signatures, in presence of two witnesses, this 23d day of June, in the year 1890.

WILLARD A. MORRISON.
CHARLES L. AMES.

Witnesses:
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AMBROSE RISDON.