

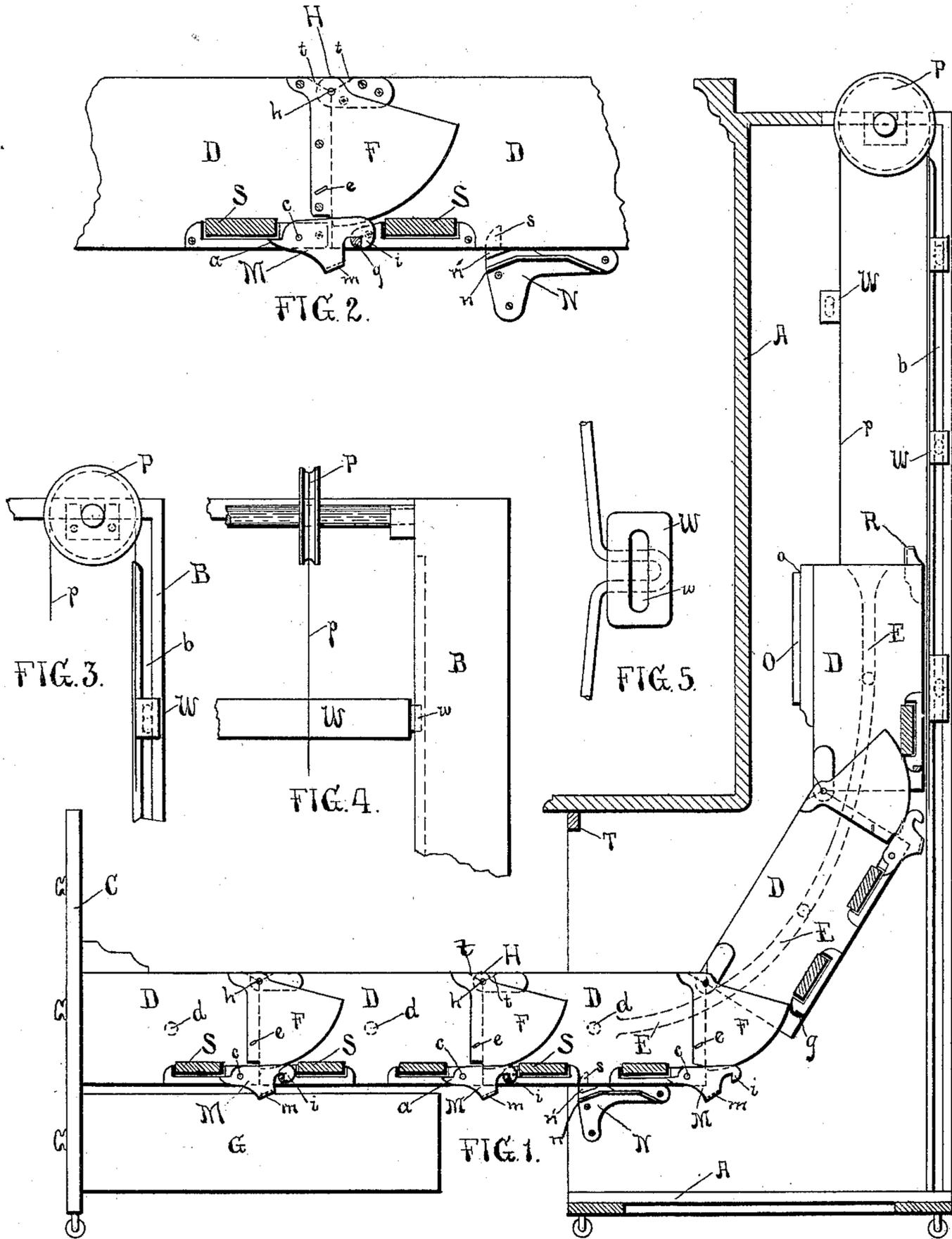
(No Model.)

2 Sheets—Sheet 1.

B. POULSON.
CABINET FOLDING BEDSTEAD.

No. 432,073.

Patented July 15, 1890.



WITNESSES:

Britton Poulson INVENTOR

Leopold Freisinger
F. V. Hartman

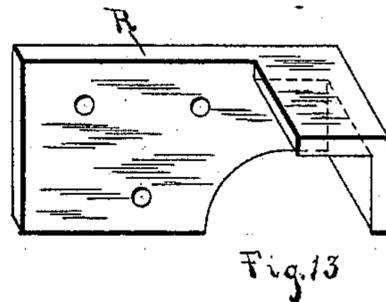
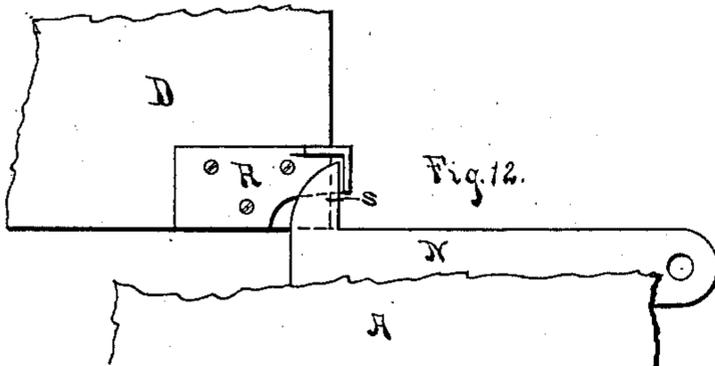
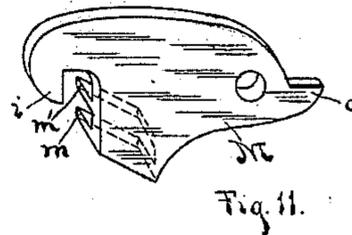
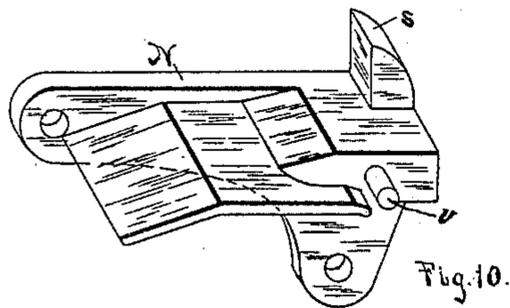
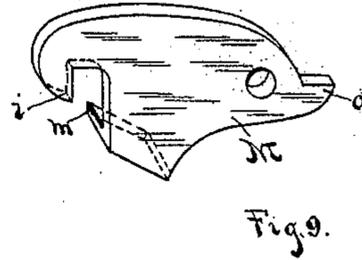
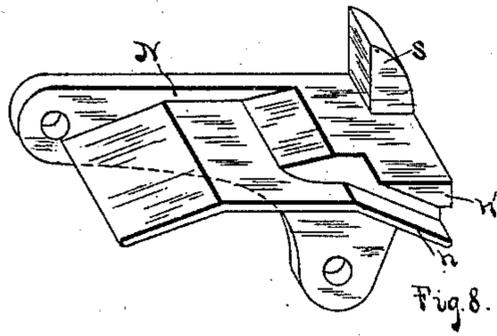
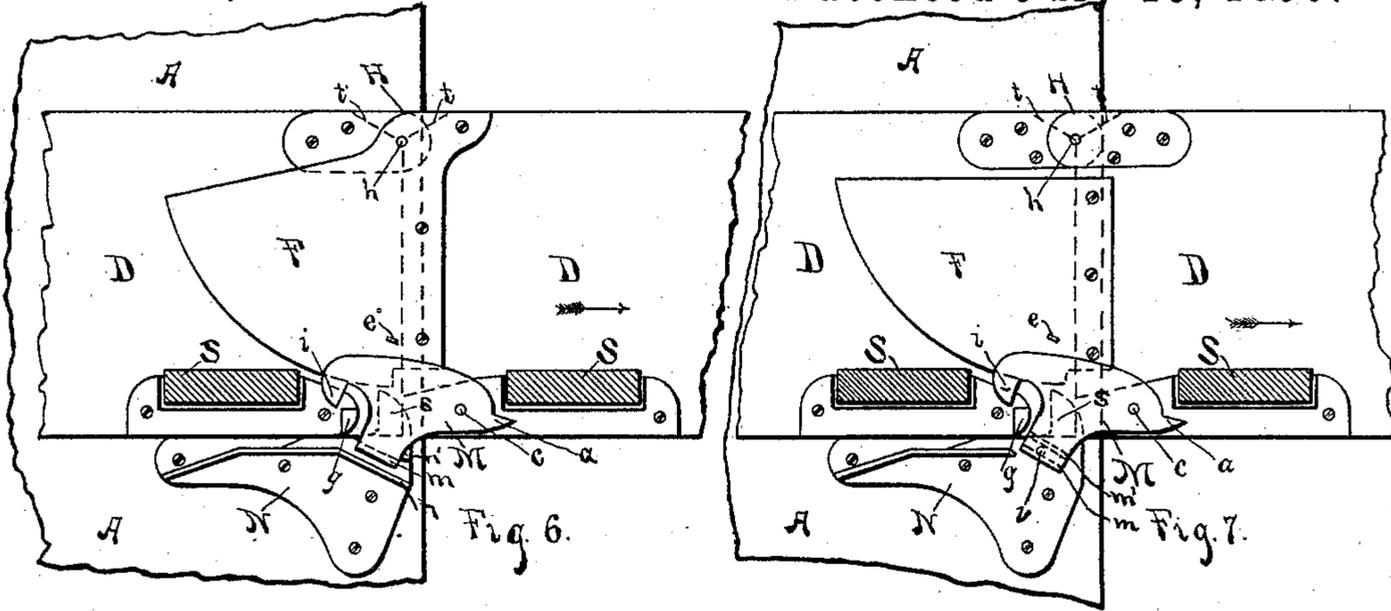
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Patented July 15, 1890.



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UNITED STATES PATENT OFFICE.

BRITTON POULSON, OF FORT WAYNE, INDIANA.

CABINET FOLDING BEDSTEAD.

SPECIFICATION forming part of Letters Patent No. 432,073, dated July 15, 1890.

Application filed July 6, 1889. Serial No. 316,730. (No model.)

To all whom it may concern:

Be it known that I, BRITTON POULSON, a citizen of the United States, residing at the city of Fort Wayne, in the county of Allen, in the State of Indiana, have invented certain new and useful Improvements in Cabinet Folding Bedsteads; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in cabinet folding bedsteads; and it consists in the peculiar construction and combination of the devices, hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 represents a sectional view of the bed-frame and base, section being made through the center. Fig. 2 is a detail plan view of the hinge, guard, and locking device, showing their attachment to two sections of the rail. Fig. 3 is a side detail view of the pulley and a portion of the case. Fig. 4 is a rear view of Fig. 3. Fig. 5 is an end view of one of the weights, showing the method of its attachment to the ropes. Fig. 6 is a detail view showing the engagement of the flange *m* with the flange *n'*. Fig. 7 is a detail view showing a double flange *m* and *m'* on the plate *M* and the engagement of *m'* with the pin *v*. Fig. 8 is a detail perspective view of the plate *N*. Fig. 9 is a detail perspective view of the plate *M*. Fig. 10 is a perspective view of the plate *N*, provided with a pin *v*, instead of the flanges *n*. Fig. 11 is a perspective view of the plate *M*, provided with double flanges *m* and *m'*. Fig. 12 is a detail view showing the engagement of the flanged plate *R* with the hook *s*, and Fig. 13 is a perspective view of the plate *R*.

A represents the case or cabinet, which may be arranged in the form of any preferred article of furniture, such as a dressing-case, bureau, book-case, or sideboard.

C is a drawer showing part of such an arrangement. The rear side of this case is open, except a vertical board *B* is attached on each side, in the inner edge of which is a guide-groove *b*, in which the pins *w* of the weights

are moved and guided. The weights *W* are bars of any suitable material, preferably of cast-iron, of sufficient width to give the necessary weights required to raise the bed in its case. The lowest weight is made heavier than the aggregate weights of the others, and is so adjusted to the ropes that it rests near the top of the case when the bedstead is entirely extended. The other weights are adjusted at different places along the ropes, so spaced that as the bedstead is pushed into the case they pass over the pulleys, and thus increase the pull on the ropes to correspond with the increasing force required to raise the bed in the case, it being obvious that the higher the bedstead is raised inside the case the more power is required to raise and hold it. The reverse takes place on pulling the bedstead out. The weights passing over the pulley decrease the force. There are two pulleys *P* on each side of the top of the case *A*, on which the ropes *p* run, carrying with them the weights *W*.

The method of attachment shown in Fig. 5 permits the passage of the weights over these pulleys without clogging, the weight riding over the pulleys on the ropes, as is obviously shown in the drawings, and also permits the placing of the weights in any desired adjustment in relation to each other and the work to be done. It consists in making two holes through the weights *W* at either end for the ropes to pass through, as shown by the dotted lines in Fig. 5. By this method the tension of the ropes when held firmly extended by the lowest weight attached to them produces a clamping action, which holds the adjustable weights on the ropes at any place desired. Upon relieving this tension by lifting the weight or weights the weight above may be placed in any other adjustment, the ropes then passing easily through the holes to permit it. This device of using several weights and the method of attachment to the ropes permits such a delicate adjustment of forces on opposite sides of the pulleys that the bedstead can be moved up into its case or withdrawn from it so easily that a child can operate it. The ropes may be of any suitable material.

The bedstead-frame consists of an end or

front piece C and three or more sections D, preferably five, forming the rail, as shown in Fig. 1. Slats S, on which the bed is placed, are suitably fastened to these sections D. One of the sections D is firmly fastened to the end piece C. The other sections are hinged to it and to each other. A preferable form of hinge H is shown in Fig. 2. There is also a guard F, attached to one end of the section D, to prevent the bed-clothing being caught between the ends of the two sections D when coming together in extending the bed from the case, as will readily be understood by inspection of Fig. 1.

The guard F is preferably attached to and made part of the hinge H, as shown; but it may be attached separately, so as to perform the same function, as shown in Fig. 7. When the sections D are joined by the hinges H, they are cut out a little, as shown by the dotted lines *tt*, Fig. 2, so as to permit the free action of the hinge upon its joint or pivot. There is also a locking device below each hinge on the sections D. It consists of a flanged piece M, pivoted at *c* and provided with a hook *i*, flange *m*, and projection *a*. A guide-plate N is fastened to either side of the case A, upon which the sections D slide and are held in place. This plate N is provided with two flanges *nn'*, which project inward, so as to engage the flange *m* (projecting in an opposite direction) as it passes them. If the flange *m* be made double, as *mm'*, (shown in Fig. 11,) a pin *v*, Fig. 7, would answer the purpose of the two flanges *nn'*; but the method detailed is preferable. It is also provided with a hook or pin *s*, which extends upward on the other side of the plate N, so as to engage the flanged end piece R on the last section D. These different parts of the plate N are preferably in one piece; but they may be made separately, as they do not necessarily coact together.

When the sections D pass into the case, the flange *m* engages the lower flange *n* and is raised in passing by its incline so as to lift the hook *i* out of engagement with the pin *g*, throwing the piece M up against the pin *e*, which prevents any possibility of its getting out of position to be engaged as it passes out. As the sections pass up, the plate M falls down by its gravity and the projection *a*, engaging the bottom of the slat-piece, limits its motion in that direction. As the sections D are withdrawn from the case, the flange *m* is engaged by the inclined flange *n'*, (see Fig. 6,) and drawn downward. This in passing draws the hook *i* into engagement with the pin *g*, completely locking the sections together. Various ways of adapting flanges and pins for this purpose will readily occur to any one skilled in the art; and I do not therefore confine myself to the particular arrangement as shown. The sections D thus hinged and automatically locked together form, when extended, a rigid inflexible rail, and, when automatically unlocked, a flexible rail adapted

to pass readily up into the case A. The sections D are also provided with pins or projections *d*, which engage and are adapted to move in the grooves E in the side of the case, guiding and directing the movements of the sections D in connection with the rope *p*. As the sections D pass into the case, they move over the guide-plate N, fastened on the inner side of the case on both sides, which holds them up so as to insure certainty of action. On the last section D is hinged a head-board O, which is adapted to be either folded down upon the bed and suitably fastened to the section D, so as to hold the bed and bedding in place when drawn up into the case, or to be folded up against the board T, so as to close the opening made by withdrawing the end piece C when the bed is extended therefrom. There is also attached to this last section a side flange-piece R, which engages the pin *s* when the bedstead is fully extended. The form of this flange-piece R permits the section D to drop past the plate N and be held securely in place by the piece R resting on the pin *s*, and also prevents further extension.

The operation of my invention is as follows: When the bedstead-frame is partially withdrawn, as shown in Fig. 1, it may be closed by pushing the end piece C toward the cabinet-case. The weights assist this movement. As the bed-frame passes farther up into the case, the last weight W passes over the pulley P and adds its weight to the others, giving assistance to the operation. The sections are guided by the pins *d*, running in the grooves E, and the locking device is thrown out of connection, as hereinbefore described, permitting the sections D to turn upward on the hinges H, as described. When the bedstead is withdrawn from the case, the sections D are automatically locked together by the locking device, as above explained, as they are successively withdrawn, and when fully extended the end is held in place by the flanged piece R, resting on the hook *s*, as described. The withdrawal is assisted by the weights successively passing over the pulleys, as described, being so adjusted that the pull on the ropes on the opposite sides of the pulleys at all times nearly balance each other, so that the force to be applied is reduced to the minimum, this equilibrium being maintained in like manner in pushing the bedstead up into the case.

In both operations of withdrawal and closing, the cabinet remains stationary, so that articles placed therein are not disturbed in any way by such action.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cabinet folding bedstead, the combination of a case provided with the guides E with a bedstead-frame composed of sections D, hinged at the top and provided with the pins *d*, the locking device placed at the bottom of said sections, consisting of the plate M, pro-

vided with a hook *i*, attached to one section, the pin *g*, attached to the other section and adapted to engage the hook *i*, the guard *F*, the ropes *p*, the pulleys *P*, placed at or near the top of the case, the weights *W*, adapted to be adjustably attached and arranged on the ropes, the guides *b*, and the projections *w* on said weights adapted to move in said guides *b*, substantially as described.

2. In a cabinet folding bedstead, the combination of a casing with a bedstead-frame, pulleys placed at or near the top of the casing, ropes passing over the pulleys and attached to one end of the bedstead-frame, and a series of weights attached to said ropes adjustably, consisting of pieces of metal extending from one side of the case to the other and adapted to pass over the pulleys, for the purpose and substantially as described.

3. In a cabinet folding bedstead, the combination of an upright casing with a bedstead-frame having its sides or rails composed of sections hinged together on top with an automatic locking device on the bottom, consisting of a plate hinged on one section, provided with a hook, and a flange or flanges adapted to slide upon a pin or other flanges attached to the side of the case, so as to be raised out of engagement when passing in and drawn down into engagement when passing out of the case, the pin *g*, attached to the other section, and a pin or flanges attached to the side of the case, for the purpose and substantially as described.

4. In a cabinet folding bedstead, the combination of a case with a bedstead-frame having

its sides or rails composed of sections hinged together at the top, the automatic locking device at the bottom, consisting of the flanged plate *M*, provided with the hook *i*, the flange *m*, and the projection *a*, hinged to one section, the pin *g*, attached to the other section and adapted to engage the hook *i*, the plate *N*, attached to the sides of the case and provided with the inclined flanges *n* and *n'*, adapted to engage the flange *m*.

5. In a cabinet folding bedstead, the combination of a bedstead-frame having its sides or rails composed of sections provided with pins *d* with the hinges *H*, the locking device composed of the flanged piece *M*, hook *i*, and pin *g*, the flanges *m*, a case provided with guides *E*, the plate *N*, and flanges *n*, substantially as and for the purpose described.

6. In a cabinet folding bedstead, the combination of a bedstead-frame having its sides or rails composed of sections provided with pins *d* with the hinges *H* on top, the locking device on the bottom composed of the flanged piece *M*, hook *i*, and pin *g*, the flange *m*, an upright case provided with guides *E*, the plate *N*, the flanges *n n'*, the ropes *p*, the pulleys *P* at or near the top of the case, and adjustable weights *W*, attached to said ropes, for the purpose and substantially as described.

In testimony whereof I do hereto subscribe my name, in the presence of two witnesses, this 26th day of March, A. D. 1889.

BRITTON POULSON.

Witnesses:

FRANK W. RAWLES,
HOMER C. HARTMAN.