

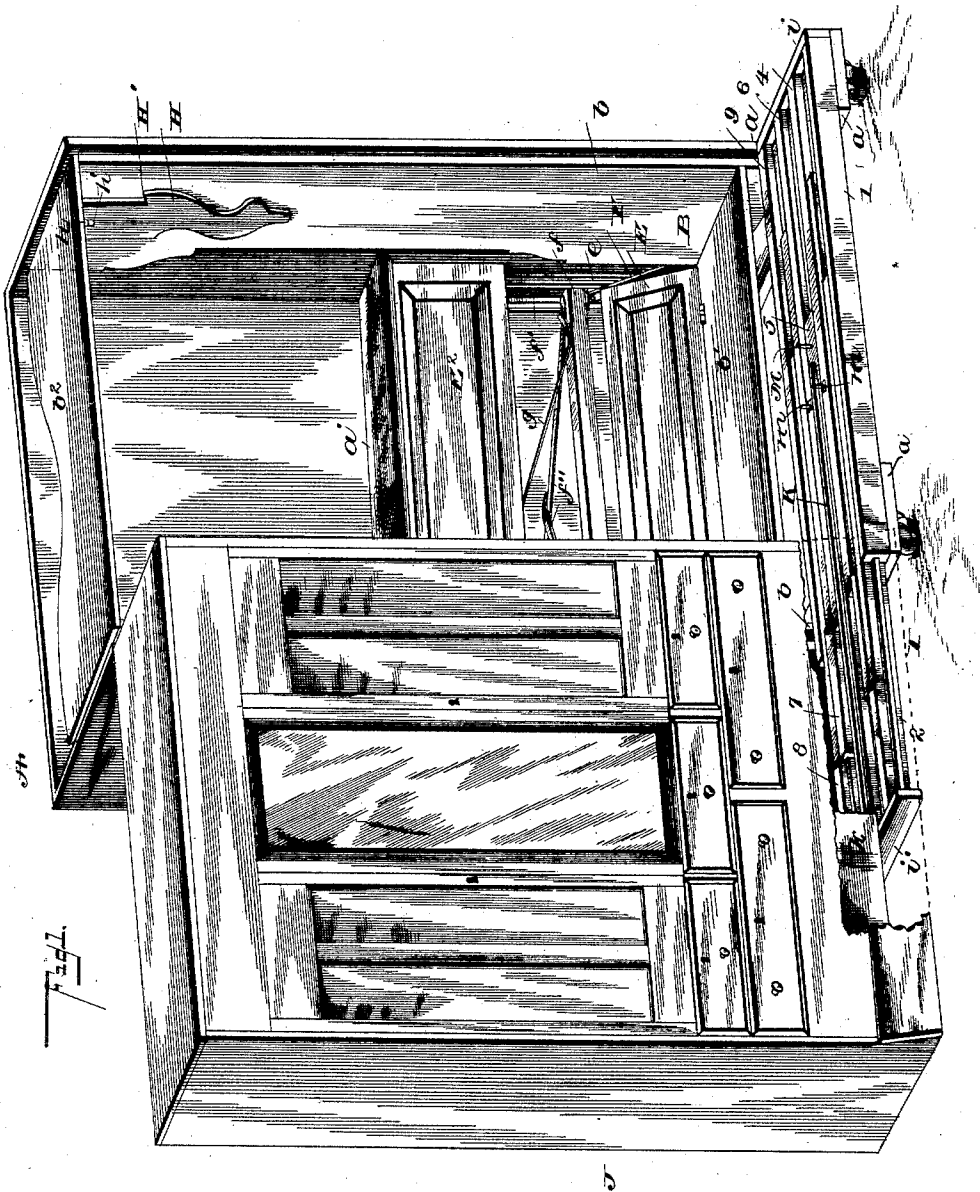
(No Model.)

3 Sheets—Sheet 1.

J. TEEL.
WARDROBE BED.

No. 468,184.

Patented Feb. 2, 1892.



Witnesses

John Dinnie
Arthur E. Sowell

Inventor

John Teel

By his Attorney

W. Alexander

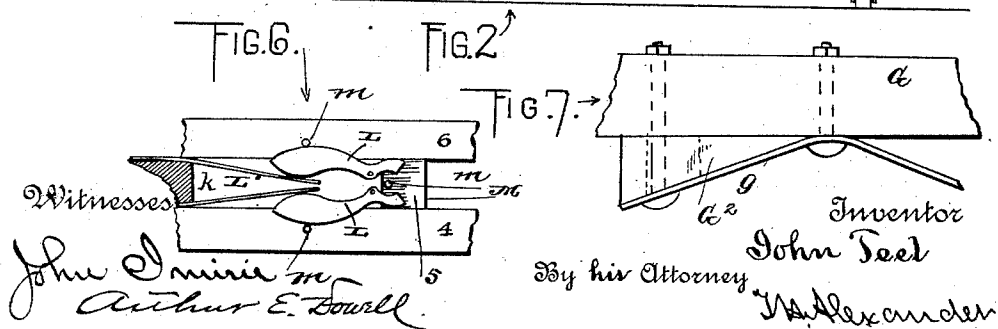
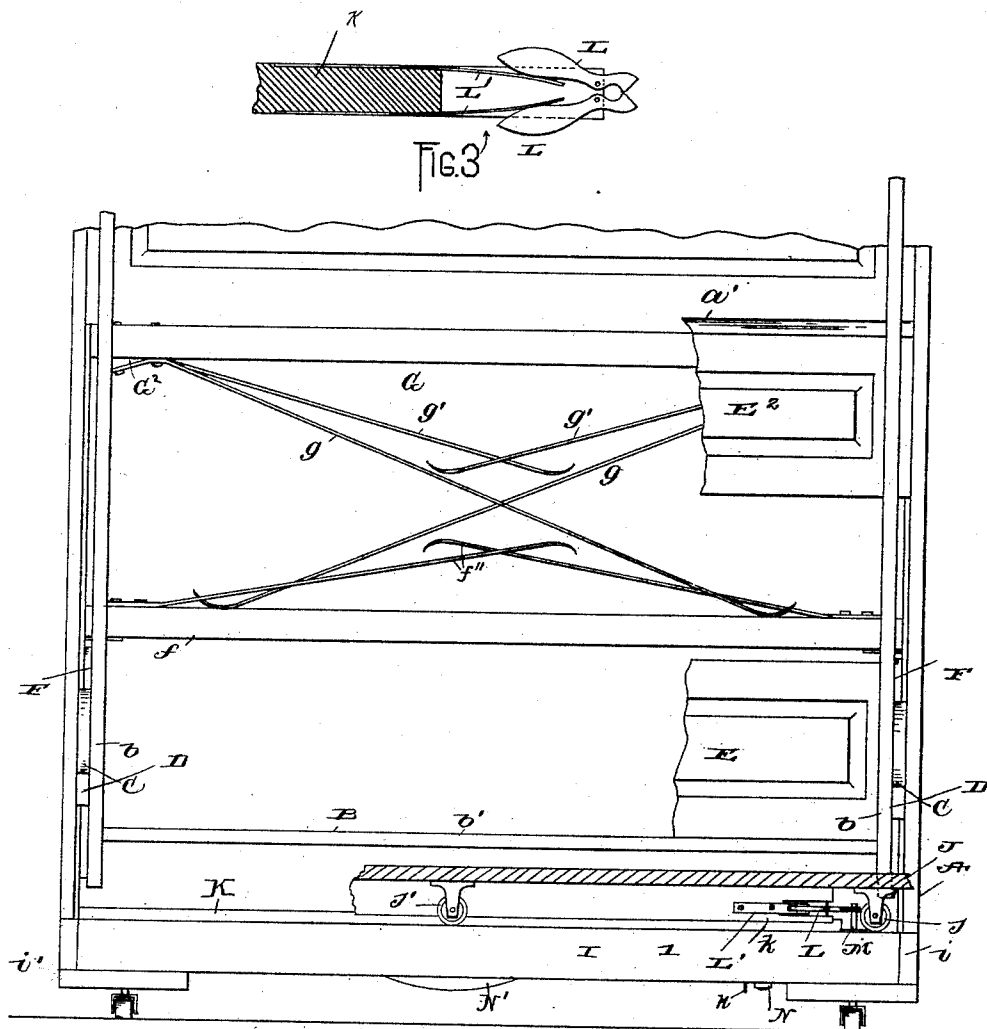
(No Model.)

3 Sheets—Sheet 2.

J. TEEL.
WARDROBE BED.

No. 468,184.

Patented Feb. 2, 1892.



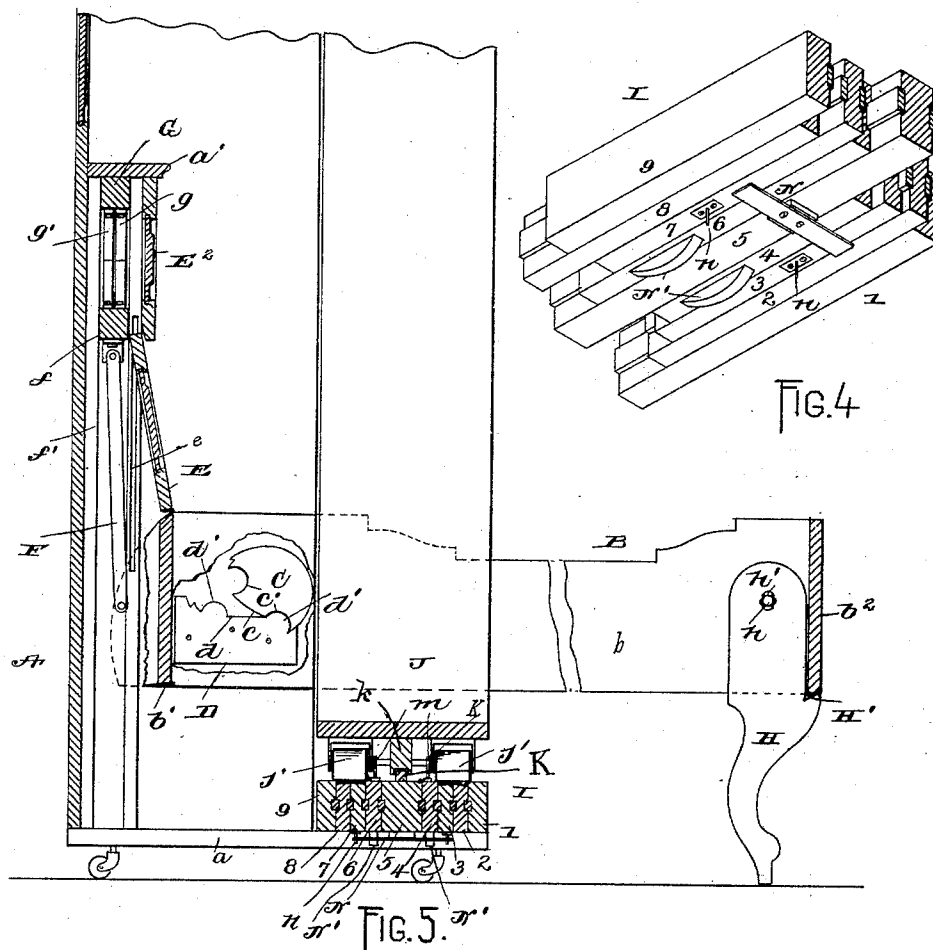
(No Model.)

3 Sheets—Sheet 3.

J. TEEL.
WARDROBE BED.

No. 468,184.

Patented Feb. 2, 1892.



Witnesses

John D. Mire
Arthur E. Lowell

Inventor
John Teel
By his Attorney
W. Alexander

UNITED STATES PATENT OFFICE.

JOHN TEEL, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR OF ONE-HALF TO
JOHN RAWSON, OF SAME PLACE.

WARDROBE-BED.

SPECIFICATION forming part of Letters Patent No. 468,184, dated February 2, 1892.

Application filed September 16, 1891. Serial No. 405,879. (No model.)

To all whom it may concern:

Be it known that I, JOHN TEEL, of Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Wardrobe Folding Beds; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form part of this specification, in which—

Figure 1 is a perspective view, partly broken, of my improved wardrobe folding bed. Fig. 2 is a front elevation of the same, partly broken away, showing the arrangement of springs. Fig. 3 is a detail of a catch. Fig. 4 is a detail perspective view of a portion of the adjustable track. Fig. 5 is a central vertical section, partly broken, of the bed as lowered and of the folding track by the aid of dotted lines. Figs. 6 and 7 are details.

This invention is an improvement in folding or wardrobe beds; and my objects are to enable the bed to be effectually concealed by a movable cabinet or case, which shall stand in front of the bed when it is raised or closed and which can be slid to one side when it is desired to open the bed, and to provide an improved extensible and folding track for supporting said cabinet, so that there shall be no dragging or rolling of parts upon the floor or carpets in shifting the cabinet; also, I increase the durability of the bed, render it more compact, and more easily operated.

To these ends the invention consists in the novel construction and operation of the extensible track, the novel arrangement of springs for raising or folding the bed, and in combination therewith of other novel and useful parts, as will be hereinafter clearly described, and summarized in the claims.

Referring to the drawings by letters and figures, A designates a casing, which is preferably closed at top, bottom, back, and sides, but open in front. The bottom side rails *a* of this case project in front thereof and support the extensible track, hereinafter described, and the case is preferably mounted on rollers, as shown, like an ordinary wardrobe.

B designates a bed-frame having side rails *b b*, connected by head and foot boards *b' b'*, as usual. To the exterior faces of rails *b*,

near the head-board, are secured wood or metallic plates C C, which have rounded bearing-faces *c* on their lower edges, terminating in semicircular recesses *c' c'*. These plates rest upon plates D, attached to the inner face of the sides of casing A near the bottom thereof and having a bearing-face *d* for contact with faces *c* of plates C, and at each end thereof a rounded lug or projection *d' d'*, adapted to engage with the recesses *c'* of plates C when the bed is raised or lowered. The plates C, bearing upon plates D, support the head of the bed-frame upon casing A, and a recess *c'* will engage a lug *d'* when the bed-frame is being or is raised or lowered and prevent the head end of the bed-frame swinging out of the casing or off plate C. The object in making recesses *c'* and lugs *d'* round, as shown, is to prevent binding of the parts and to insure smooth working thereof. The lug *d'* prevents the bearing-face *c* slipping off plate D as the bed is swung upward. When the bed is completely closed or lowered, the entire weight is transferred to lug *d* or *d'*, and, owing to its cylindrical form, it constitutes a kind of axial pivot, which facilitates the swinging up or down of the bed.

E is a vertically-movable supplemental head-board hinged at its lower edge to the top of board *b'* and adapted to slide up and down between guides *e*, attached to the sides of casing A as the bed-frame is lowered or raised. The side rails *b* of the bed-frame project slightly beyond the board *b'* and are pivotally connected to the lower ends of links F F, which are pivotally connected by their upper ends to a horizontal vertically-movable bar *f*, moving between guides *f'* on the sides of the casing, near the back thereof.

G is a bar fixed in the casing above bar *f*, and *g g* are flat or leaf springs attached to the ends and lower side of bar G and depending in opposite directions, intersecting each other about center and impinging against and bearing freely upon the top of bar *f*, so that as said bar *f* rises the springs are tensioned and as the bar lowers they are relaxed. *g' g'* are shorter leaf-springs attached to the lower side of bar G and depending therefrom, and *f'' f''* are similar springs attached to the top of bar *f* and rising therefrom and lying opposite springs *g'*, so that when bar *f* is raised

fully springs g' and f'' contact and reinforce springs g and exert a greater downward pressure on bar f . The object of the springs is to cause a downward pressure on bar f at all times, which pressure will, however, increase as the bar rises and decrease as it lowers. By reason of links F when the bed-frame is raised bar f is lowered. Consequently the force of the springs is utilized to assist in raising or closing the bed-frame, and this force is most powerful when the bed-frame is nearest to a horizontal position, and as it reaches a vertical position the spring force weakens. As the bed is lowered the bar f rises, and the resistance of the springs is augmented as the bed comes nearer a horizontal position, so that by careful adjustment the bed can be made to close or open without shock and with very little manual labor. Of course the number of springs may be varied. The springs, it will be observed, are some of them wholly relaxed and others partially relaxed when the bed is closed, thus increasing the working life of the springs. In order to enable the pressure of the springs to be varied or regulated, wedge-blocks G^2 may be slipped between the end of springs and the bar, as indicated in detail figure, and by shifting this block in or out the inclination of the springs is increased or diminished, and consequently their working power regulated. The springs are protected by a top plate a' above bar G and a front panel E^2 , the lower edge of which depends below and in front of the top of board E , so that when the bed is lowered the springs and bars are entirely concealed. The weight of the head-board and board E are of assistance in equipoising the bed-frame.

H designates feet attached to the foot ends of the side rails b by means of headed pins h , playing through slots h' in the feet. The feet have a recessed shoulder H' in their outer edges, and as the bed lowers the feet swing outward to maintain a vertical position until the shoulder H' underlies the beveled lower edge of foot-board b^2 , and when the frame is lowered completely the foot-board, resting on shoulders H' , effectually locks the feet in position, so that they cannot be casually knocked out of position, the slots h' allowing the legs sufficient vertical play on pins h to permit this. As the bed-frame rises the legs drop down sufficiently to disengage the edge of the foot-board and swing in parallel with the side rails, so that the entire bed is within casing A when closed, as indicated in Fig. 1.

The extensible ways I are formed of a series of telescoping tongues and grooved bars, as indicated in Figs. 1, 4, and 5. I have shown a combination of nine bars, five being movable and four stationary. The bars all lie parallel and set edgewise side to side. The two outer bars 1 and 9 and two bars 4 and 6, on each side of the central bar 5 are stationary and are fixedly mounted on the extended side bars a of casing A , and are

connected at one end by a transverse finishing-piece i . Bars 2 and 8, lying next the outer bars, and the central bar 5 are connected at their outer ends to a transverse finishing-piece i' and move together, being supported, respectively, by longitudinal tongues engaging longitudinal grooves in the bars 1, 4, 6, and 9, as shown. Bars 3 and 7 are longitudinally movable, but are not directly connected. They lie between bars 2 and 4 and 6 and 8, respectively, and are supported by longitudinal grooves and tongues, as shown.

J designates the cabinet, which is about equal in width and height to casing A , and may be a wardrobe, book-case, or other desirable article of furniture, and is mounted on ways I , and has proper finishing-pieces on its sides and front, which will depend over or fit closely to the outer bar and finishing-pieces of the ways, as indicated in the drawings. This cabinet is supported on rollers j j' , the former being attached to the end of the cabinet adjoining piece i of the ways, and the latter are located slightly beyond the center of the cabinet, but not at the end thereof, and are long or wide rollers, so that they overlies and would rest upon the top edge of either or all of bars 1 2 3 4 or 6 7 8 9, as indicated in Fig. 5. The central bar 5 has a longitudinal bead K on its upper surface, which underlies the cabinet, and the latter has a grooved block k attached to its bottom and fitting loosely over bead K , so that lateral tilting of the cabinet will be prevented by the block and bead. To the inner end of block k are pivoted opposite catches L L , (see Fig. 3,) which are controlled by springs L' L' and which are adapted to catch a pin M , fixed to the end of bar 5 when the cabinet is closed, and to the under side of bar 5 is attached a spring-plate N , which projects beneath bars 3 and 7, and is adapted to contact with studs n n , depending therefrom.

N' N' are cam-blocks attached to the lower edges of bars 4 and 6 in the path of plate N .

When the parts are folded, the bed is closed and the ways are folded, and cabinet J stands in front of the casing, with catches L engaging pin M .

When it is desired to open the bed, the cabinet must be moved to one side. This is effected simply by pushing it in the desired direction, the ways automatically extending themselves as follows: Catches L , engaging pin M , drag bar 5 outward and with it bars 2 and 8, which are connected therewith by piece i' , as described. The plate N , under bar 5, moving outward therewith, engages pins n n and forces bars 3 and 7 to move outward also until the plate strikes cams N' , which throws its ends out of engagement with the pins and leaves bars 3 and 7 projected about one-third of their length. The catches L continue to force bars 2, 5, and 8 out until the catches strike pins m m , fixed to the upper surface of bars 4 and 6 about centrally thereof, so that the bars 2, 5, and 8 are projected

about half or more of their length before they are stopped. Thus the bars 3 7 extend about a third of their length beyond the stationary bars 1, 4, 6, and 9, and bars 2, 5, and 8 are projected about a third of their length beyond bars 3 7. Now as the rollers are set near the center of the cabinet instead of at its end, when the bars have been extended, as described, the cabinet still can be pushed farther outward until its side projects beyond the end of bars 2, 5, and 8, and thus leaves the entire front of casing A unclosed, so that the bed-frame can be lowered at once. The top edges of bars 3 and 7 are cut away slightly for about two-thirds of their length, as indicated in Fig. 1, so that the rollers *j'* will not touch or ride on said bars until they have been extended. Bars 2, 5, and 8 are similarly cut away for about two-thirds of their length for a similar purpose. By this arrangement the bars 2, 3, 5, 7, and 8 do not have any weight to bear until they are shifted properly. In other words, the rollers *j'* run first only on bars 1 and 9 or 4 and 6, and then in passing off said bars they run onto and bear only upon bars 3 and 7, and then in passing from said bars run onto bars 2 and 8. When the cabinet is moved inward, rollers *j'* run onto bars 3 and 7 before bars 2, 5, and 8 are moved inward, and then onto bars 1 and 9 or 4 and 6 before bars 3 and 7 are moved inward, so that at no time must the rollers bear on a moving bar or bars. It will be observed that the ways are self-supporting, and in extending the ways or shifting the cabinet thereon there is nothing in contact with or dragged over the floor, which is a very desirable feature, for where rollers are used bearing direct on the floor or carpet a mark is made thereby, which, especially on carpets, soon becomes ineradicable, and thus suggests the concealed bed, where otherwise it might remain unsuspected. Both bed-casing and cabinet are, it will be observed, mounted on the same base and can be moved together as one article of furniture, while the cabinet may be shifted laterally on the extended ways out of the way of the bed and be readily accessible also.

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

1. The combination of the casing, the bed-frame pivotally supported near its head on the sides of the casing and having its side rails extended beyond its head-board, the horizontal vertically-movable bar lying above the head end of bed, the guides for said bar fixed to the sides of casing, the intersecting leaf-springs *g*, *g'*, and *f'''* interposed between said movable bar and a bar fixed above the latter, and a pair of links each pivotally connected to the projecting end of bed-rail and to the movable bar, substantially as described.

2. The combination of the casing, the bed-frame pivotally supported near its head on the sides of the casing and having its side

rails extended beyond its head-board, the horizontal vertically-movable bar lying above the head end of bed, the guides for said bar fixed to the sides of casing, the intersecting leaf-springs respectively connected to and interposed between said movable bar and a bar fixed above the latter, and a pair of links each pivotally connected to the projecting end of bed-rail and to the movable bar, the fixed panel in front of said bars and springs, and the supplemental head-board hinged at its lower end to the bed-frame and moving between guides on the casing and below said panel, substantially as specified.

3. The combination of the opposite fixed and movable upper and lower bars, the leaf-springs attached to the lower side and near the ends of the upper bar, inclining downwardly and inwardly toward each other, the leaf-springs attached to the upper side and near the ends of the lower bar, inclining upwardly and inwardly toward each other, and the pair of leaf-springs attached to and near the ends of one bar intersecting each other and bearing continually on the opposite bar, substantially as specified.

4. The combination of the casing, the bed-frame pivotally mounted and foldable therein, the vertically-movable and fixed upper and lower bars in said casing above the bearings of the bed-frame, the downwardly and inwardly inclined leaf-springs attached to and near the ends of the upper bar, and the upwardly and inwardly inclined leaf-springs attached to and near the ends of the lower bar, the pair of leaf-springs attached to and near the ends of one bar, intersecting each other and bearing continually against the other bar, and the links connecting the lower bar with the ends of the bed-frame, substantially as described.

5. The combination of stationary bars and movable bars telescoping therebetween, the outer movable bars being supported by the stationary bars and the inner movable bars being supported by adjacent movable bars, said bars forming ways for sustaining a movable cabinet, and means for automatically engaging and extending or closing said ways when the cabinet is moved thereon, substantially as and for the purpose specified.

6. The combination of an extensible way or track formed of stationary bars and longitudinally-movable bars telescoping therewith with a cabinet supported on said ways and having a catch on its bottom adapted to engage and move outward the sliding ways, and means for disengaging said catch at the proper moment, substantially as described.

7. The combination of the stationary bars and an intermediate independent movable bar having a pin on its upper surface telescoping between and supported by said stationary bars with a cabinet mounted on said bars and having a catch on its bottom adapted to engage said pin and move the central bar outward, substantially as set forth.

8. The combination of the ways formed of a series of telescoping stationary and movable bars, the central bar having an upstanding bead on its upper surface with a cabinet supported on said ways by rollers or casters and having a grooved block on its bottom overlying said bead, substantially as and for the purpose described.

9. The combination of the stationary bars 1, 4, 6, and 9 and the movable bars 2, 5, and 8, telescoping therebetween, with the cabinet mounted thereon by rollers and adapted to force the movable bars outward or inward as it is moved, substantially as and for the purpose specified.

10. The combination of the stationary bars, the movable bars telescoping therewith, and the bead on one movable bar with the cabinet supported thereon by rollers, and the catch on the bottom of the cabinet for engaging and forcing outward the movable bar with the cabinet, and the block on the bottom of the cabinet overlying the bead, substantially as described.

11. The herein-described ways for the purpose specified, consisting of the stationary bars 1, 4, 6, and 9 and the intermediate tele-

scoping movable bars 2, 3, 5, 7, and 8, constructed and arranged to operate substantially as set forth, in combination with a cabinet mounted on the ways and movable thereon and having a catch device engaging the central bar when the cabinet is shifted, as and for the purpose described.

12. The combination of the stationary bars 1, 4, 6, and 9, the bars 2 5 8, telescoping therebetween and connected at one end, and the bars 3 7, telescoping between bars 2 4 and 6 8, respectively, with the cabinet mounted on said bars, its rollers, and the catch devices for shifting said bars, substantially as described.

13. The combination, in a telescoping way, of fixed and movable bars, the movable bars having their tops recessed or lowered for a portion of their length, so that they shall only serve as tracks when extended, substantially as specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN TEEL.

Witnesses:

J. R. MANSFIELD,
W. H. BARNES.