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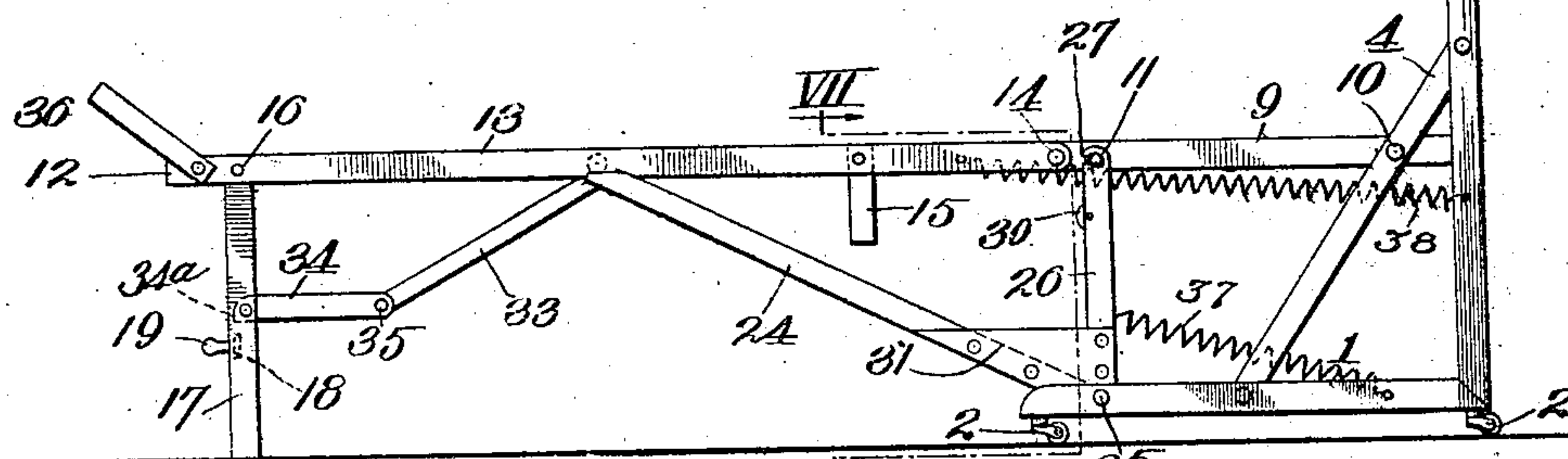
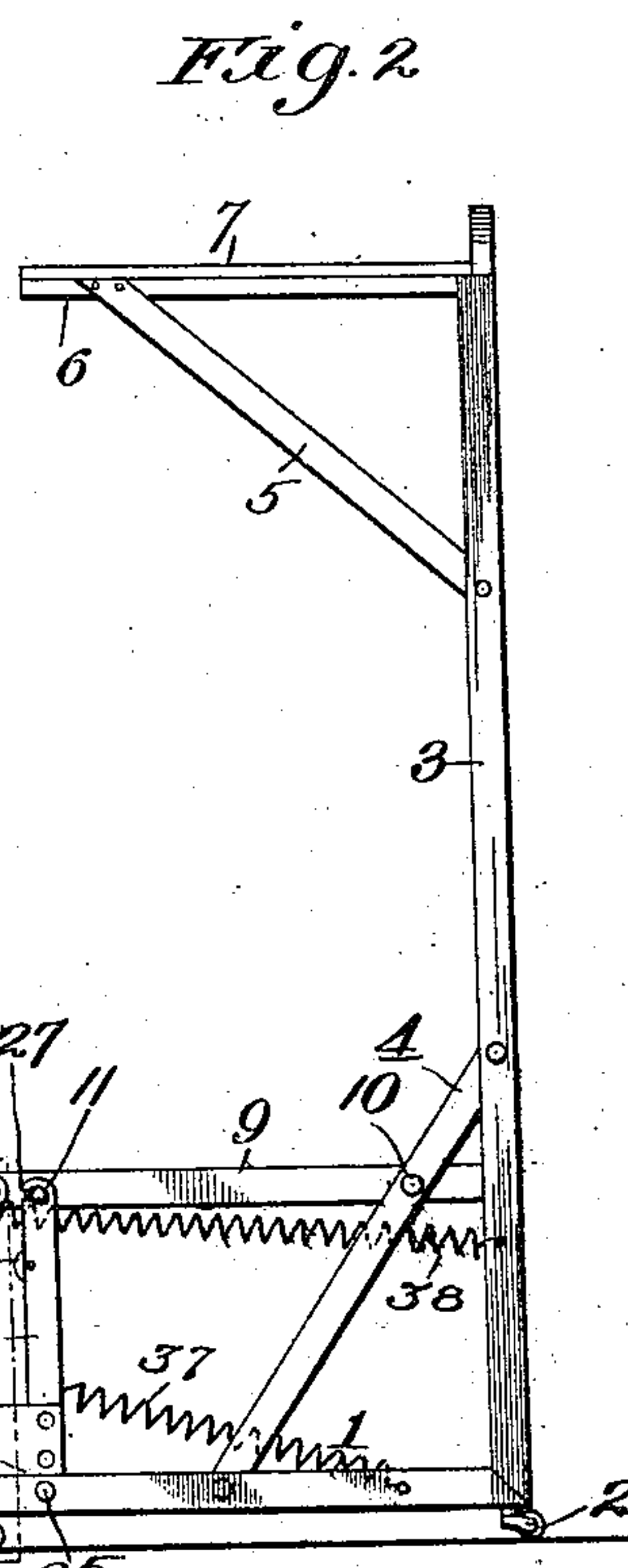
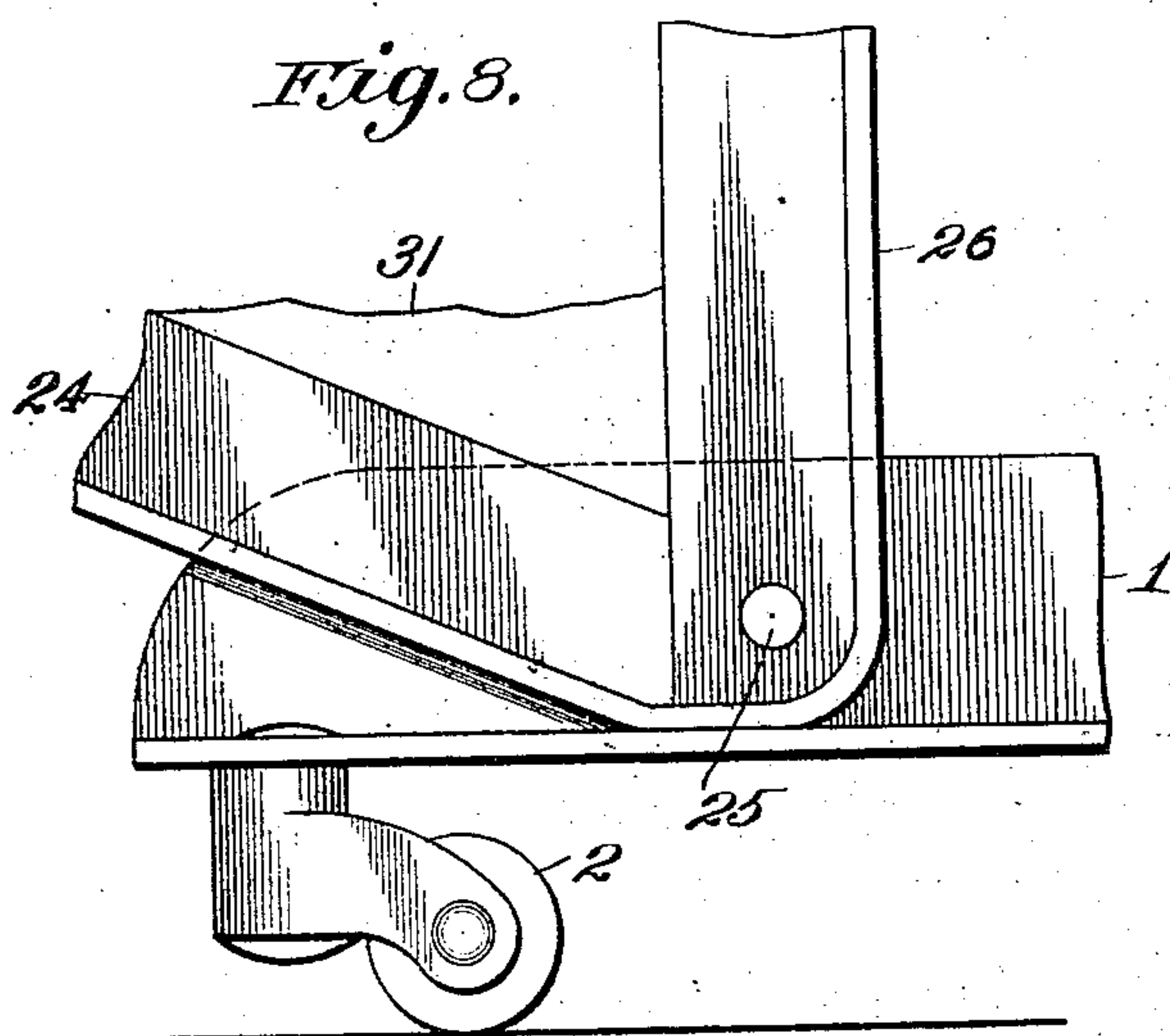
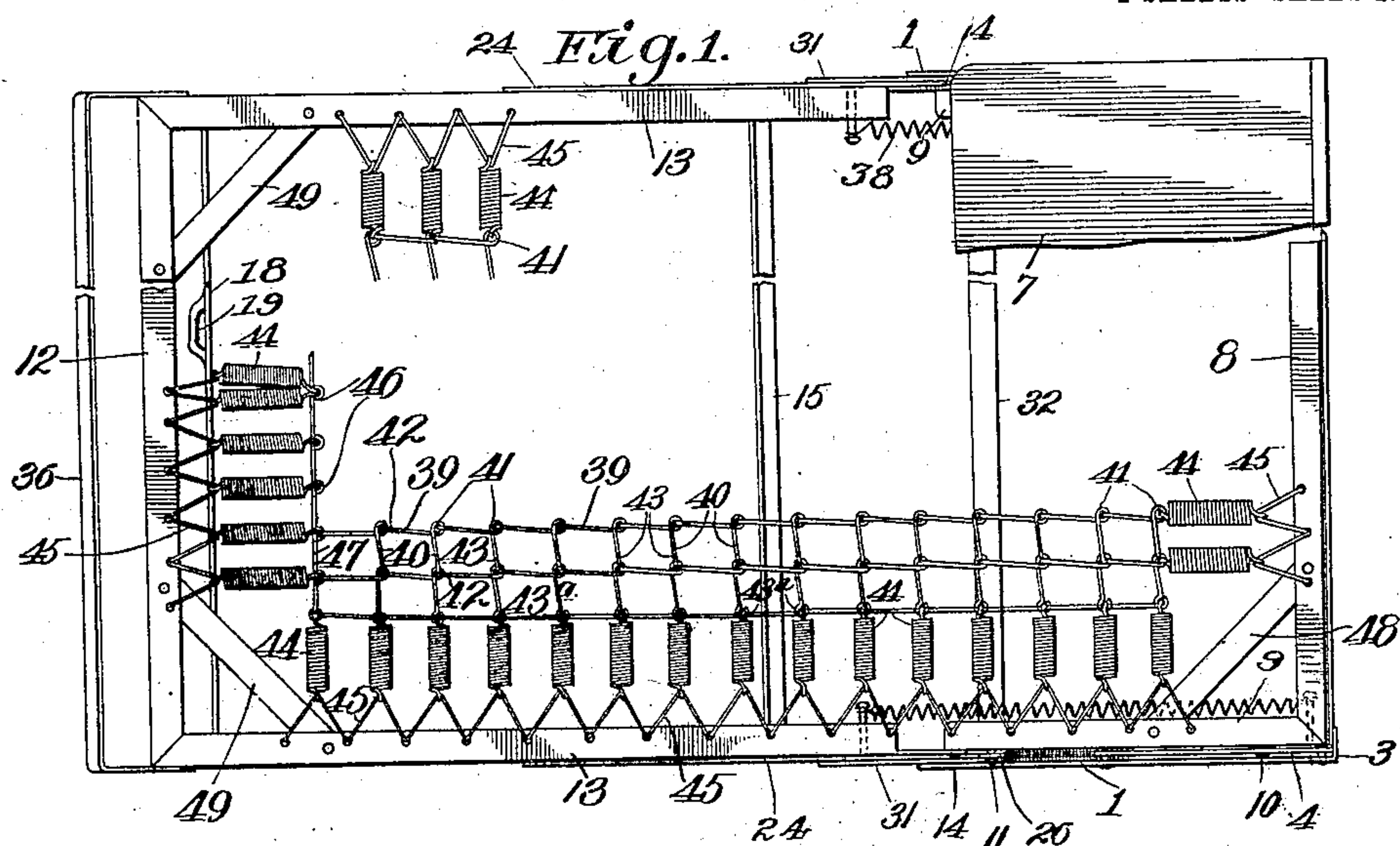
PATENTED JAN. 15, 1907.

J. L. TANDY.

FOLDING BED.

APPLICATION FILED JAN. 16, 1906.

2 SHEETS—SHEET 1.



Witnesses:

Frank P. Glor.  
H. C. Rodgers,

VII

Inventor:  
J. L. Tandy.

By George H. Thompson atty.

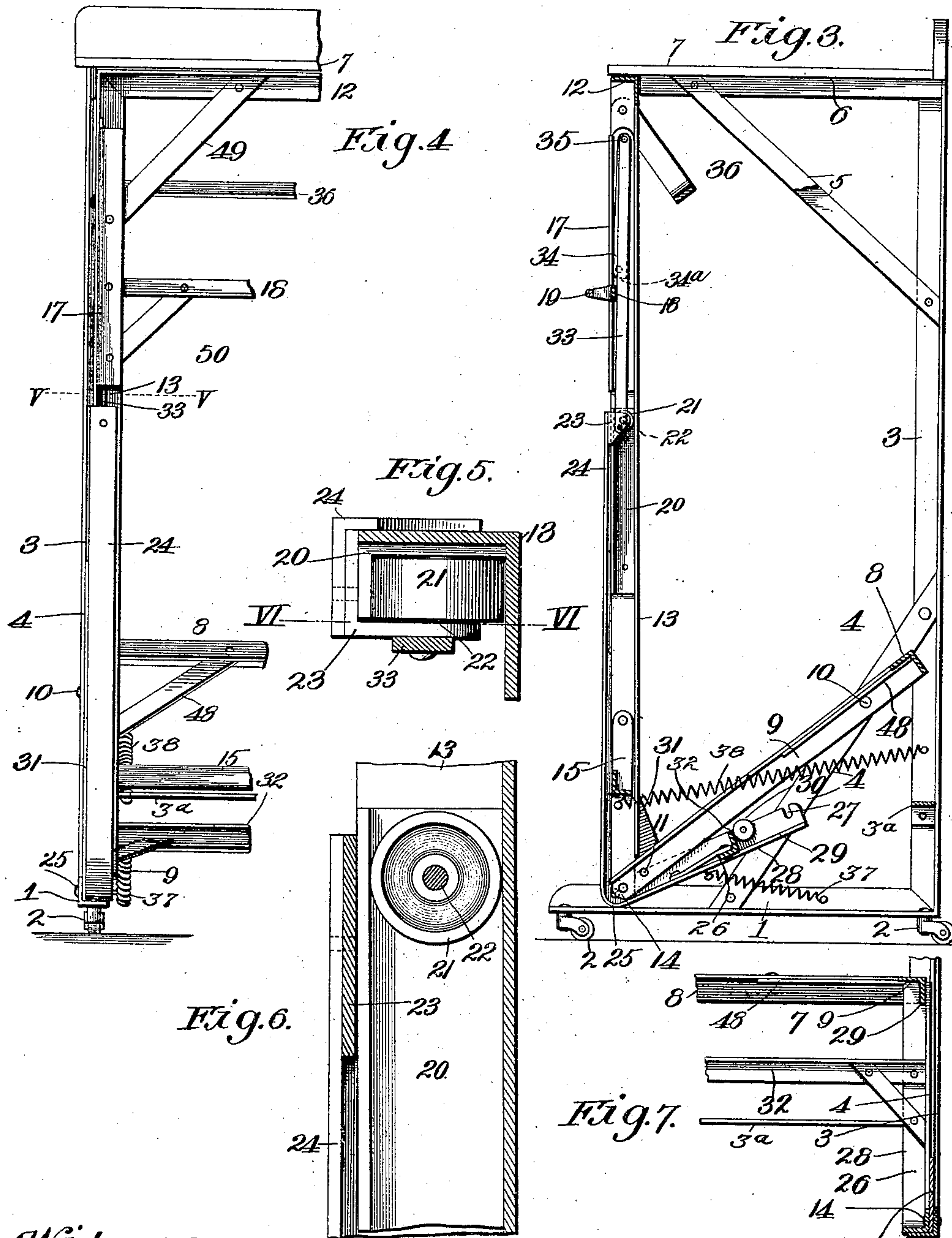
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2 SHEETS—SHEET 2.



Witnesses

Frank R. Glover.  
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# UNITED STATES PATENT OFFICE.

JOHN L. TANDY, OF KANSAS CITY, MISSOURI.

## FOLDING BED.

No. 841,280.

Specification of Letters Patent.

Patented Jan. 15, 1907.

Application filed January 16, 1906. Serial No. 296,258.

*To all whom it may concern:*

Be it known that I, JOHN L. TANDY, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Folding Beds, of which the following is a specification.

My invention relates to folding beds, and more especially to that type known as "mantel-beds;" and my object is to produce a bed of this character which folds and unfolds easily and which when unfolded affords a strong and rigid support for the occupant.

A further object is to produce a bed of this character possessing the requisite strength combined with light weight and simplicity and cheapness of construction.

With these and other objects in view, as hereinafter appear, the invention consists in certain novel and peculiar features of construction and organization, as hereinafter described and claimed, and in order that it may be fully understood, reference is to be had to the accompanying drawings, in which—

Figure 1 is a top plan view of a portion of a bed embodying my invention in unfolded position. Fig. 2 is a side view of the same. Fig. 3 is an enlarged vertical central section of the bed when folded. Fig. 4 is a front view of a portion of the bed as shown in Fig. 3. Fig. 5 is a full-size horizontal section taken on the line V V of Fig. 4. Fig. 6 is a vertical section taken on the line VI VI of Fig. 5. Fig. 7 is a section on the line VII VII of Fig. 2. Fig. 8 is a detail view of the inner side of the V-brace, showing its connection with the base of the frame.

In the said drawings, which represent what is known as an "iron" bed, all of the various bars are made of angle-iron unless otherwise stated.

1 indicates parallel sills mounted upon casters 2.

3 indicate side standards rising from the head ends of sills 1 and connected by suitable cross-braces 3<sup>a</sup>, one only being shown.

4 indicates flat braces secured at their opposite ends to standards 3 and sills 1 and extending divergently downward from said standards.

5 indicates flat braces extending divergently upward with respect to standards 3 and secured at their lower ends to said standards and at their upper ends to the parallel bars 6, secured at one end to the upper end of standards 3, and secured upon said bars 6 is

the shelf or mantel 7 of the bed. The parts described constitute a rigid frame.

The head-rail section of the bed consists of a cross-bar 8, provided with a pair of parallel rails 9, pivoted, as at 10, to oblique braces 4, and projecting outward from rails 9 at the opposite side of pivotal point 10 from standards 3 are headed pins 11, for a purpose which hereinafter appears. By disposing the pivot of the head-rail section outward of the standards of the frame and of the cross-bar 8 the depth of the bed when folded is less than where such pivotal point is in transverse alignment with said standards, this narrowing of the bed from front to rear being accomplished without varying the length of the bed proper when unfolded or its height when folded.

The foot-rail section consists of a cross-bar 12 and a pair of parallel rails 13, having their vertical flanges extended beyond their horizontal flanges and fitting against the outer sides of the foot ends of rails 9, to which they are pivoted, as at 14, this connection forming a joint between the head and foot rail sections of the bed, and said side rails 13 are pivotally connected to a U-brace 15, which when the bed is unfolded hangs as indicated in Fig. 2 and when folded hangs vertically between said side rails 13, which at such time are likewise approximately vertical, as shown in Fig. 3.

Pivoted, as at 16, to rails 13 near cross-bar 12 are the supporting-legs 17, connected by a flat cross-bar 18, provided midway its length with a handle 19. Secured to the inner sides of the side flanges of rails 13 are angle-bars 20 of length nearly equal to the distance between the centers of sills 1 and side rails 9, and fitting and adapted to roll on and between the flanges of rails 13 and the angle-bars 20 are rollers 21, journaled on pins or stub-shafts 22, projecting outwardly from the side flanges of angle-brackets 23, secured to the oblique brace-arms 24, which fit at their lower ends on the horizontal flanges of sills 1 and are pivoted to such sills, as at 25, for movement in a vertical plane. Integrally or otherwise formed rigidly with and projecting from the pivoted ends of oblique braces 24 are the normally vertical braces 26, adapted at their upper ends to fit against the outer sides of rails 9 and provided at such ends with notches 27 for automatic engagement with and disengagement from the headed pins 11 on said side rails. In order



that the braces 26 may act as levers in raising the jointed ends of the rails to a horizontal position during the unfolding operation of the bed, the inwardly-projecting flanges 5 28 of said braces are notched or bifurcated in their upper ends, as at 29, to receive the depending flanges of rails 9, and in order that said lifting of the jointed ends of said sections may be performed smoothly, efficiently, and with the least possible exertion on the part of the operator the braces 26 are 10 equipped with small rollers 30 some distance below their notched upper ends, which rollers in the unfolding operation come into engagement with the side rails 9 nearer the pivotal point of said rails with side rails 13 than the 15 notches 29. As a result the operator has a greater leverage or purchase in the unfolding operation. The braces 24 and 26 constitute 20 practically rigid V-shaped braces for the joint between the head and foot rail sections, and the arms 24 and 26 of said V-shaped braces are preferably stiffened at their junction-point by flat plates 31, and the braces 25 26 are braced from lateral movement by cross-brace 32. A break-joint brace between the upper ends of brace-arms 24 and the legs 17 consists of flat brace-bars 33 34, pivoted together, as at 35, the opposite ends of said 30 braces being pivoted, respectively, to the brackets 23, rigid with brace-arms 24, and said legs, the pivotal points of connection of bars 34 with the legs being below the pivoted upper ends of the legs a distance about equal 35 to the length of said brace-bars 34, so that when the bed is folded the pivots 35 will approximately aline with the pivots 16 of the legs.

Pivoted to the rails 13 is the usual loop 36 40 to fold over upon the foot portion of the mattress and bedding (not shown) to prevent them from falling down toward the head of the bed during the folding movement and after such movement is completed and also 45 during the unfolding movement of the bed.

37 indicates retractile springs connecting arms 26 of the V-shaped braces with the sills 1 for the purpose of aiding the operator in folding the bed, and 38 represents springs 50 connecting the rails 13 with the standards 3 below pivots 10. When the bed is unfolded, springs 37 and 38 are under comparatively heavy tension with the last-named springs, because exerting a pull in a plane below pivots 14, tending to hold the bed reliably in its 55 unfolded position, so as to guard against any possibility of accidental folding movement, it being understood in this connection that any tendency of springs 38 to cause the pivoted ends of rails 9 and 13 to move upward is 60 defeated, because of the interlocked relation between the notches 27 and headed pins 11. It will also be noticed that the pivots 35 of braces 34 and 33 occupy planes below the 65 pivotal point of said braces with brackets 32

and legs 17 and that the squared portions 34<sup>a</sup> on the outer ends of brace-bars 34 bear against the opposing flanges of the legs to prevent said bars from swinging down below the position indicated in Fig. 2. As a result 70 it is impossible for the legs to collapse inward, it being obviously impossible for the legs to collapse by swinging outward.

To fold the bed, the foot-rail bar 12 is grasped and pulled upward, which action 75 through the sliding connection with the pivoted V-braces imparts upward pivotal movement to said braces and effects the disengagement of notches 27 and pins 11. In this action there is a slight movement of the rollers 21 toward the head of the bed and a consequent straightening of the break-joint 80 braces 33 34. As the lifting action continues the jointed end of the head and foot rail sections drops down, with pivots 10 as the axis 85 of movement, this downward movement (or relative upward movement of the rollers on the rails 13) cooperating with the weight of the legs in breaking the break-joint braces inward or toward the rails 13, so that eventually the said braces fold up like a knife-blade 90 with pivots 35 in alinement with leg-pivots 16, said folded braces lying longitudinally of and between the rails 13 and legs 17, which likewise are folded into the rails 13, as shown 95 in Figs. 3 and 4. As thus disposed, the foot-rail section of the bed stands below the outer edge of the shelf or mantel, it being understood, of course, that before the bed is folded as described the mattress and bedding holding 100 loop is swung inward with reference to the foot-rail section to the position indicated in Fig. 3.

To unfold the bed, the operator grasps the handle 19 and pulls outward and downward 105 upon the same, this action throwing the pivotal points 35 of the braces 34 with the legs, which, as shown in Fig. 3, stand forward of the vertical plane occupied by pivots 35 and the pivotal points of bars 33 with brackets 23, 110 farther forward. This action in turn causes said braces to exert an outward and upward pull on the foot-rail section and causes pivoted braces 24 26 to operate and apply upward pressure through the medium of rollers 30 on 115 the lower edges of rails 9, this upward pressure continuing until the notches or bifurcations 29 of brace-arms 26 engage the depending flanges of rails 9 and continue to push the same upward, of course at the same 120 time sliding upon the same toward pivots 14 until eventually as the legs of the bed strike the floor the head and foot rail sections have assumed approximately horizontal positions. At the same time notches 27 reengage the 125 headed pins 11 and pivots 35 pass by gravity below the plane of the pivoted opposite ends of the braces 33 and 34 with the angle-brackets 23 and legs 17, respectively.

This bed is adapted to be equipped with 130



suitable draperies (not shown) to be supported from the front and side edges of the shelf or mantel in the usual manner. A convenient type of spring-mattress for a bed of this character and one which readily adapts itself to the folding and unfolding movements of the bed is constructed as follows—that is to say, pieces of wire bent to form links composed of longitudinal arms 39 and transverse arms 40 with horizontal eyes 41 at the junction of said arms and vertical eyes 42 and 43 at the ends of said arms, respectively, the eyes 41 of said links being engaged by the eyes 42 and 43 of contiguous links. The last longitudinal row of links at the side toward which arms 40 project preferably terminates in horizontal eyes 43<sup>a</sup>, and said eyes are linked by retractile springs 44 to the wire 45, woven into or otherwise secured to the side rails 9 of the head and foot rail sections. The longitudinal series of links at the opposite side of the mattress have their eyes 41 linked by similar retractile springs 44 to the similar wire 45, secured to the other side rails 9 and 13. The last transverse series of eyes 41—viz., the series at the head end of the bed—is linked by similar retractile springs to similar wire woven into or otherwise secured to the cross-bar 8 of the head-rail section. At the foot end of the mattress the last series of transverse eyes 42 are engaged by coils 46 of a transverse rod 47, said coils being linked by retractile springs 44 to wire 45, woven into or otherwise secured to the cross-bar of the foot-rail section. To stiffen the head and foot rail sections, suitable flat braces 48 and 49, respectively, bridge their corners, and the legs are braced from the cross-bar, connecting them by the oblique braces 50, said braces 49 and 50 being omitted from Fig. 3 to avoid obscuring more important features of construction.

From the above description it will be apparent that I have produced a folding bed possessing the features of advantage enumerated as desirable and which obviously may be modified in many particulars without departing from the spirit and scope of the appended claims.

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

1. A folding bed, comprising a frame, a substantially V-shaped brace pivoted to the base of the frame, a head-rail section pivoted near its head end to the frame and adapted to rest upon one arm of said brace, a foot-rail section pivoted to the head-rail section between the arms of said brace and having a slidable connection with the outer arm of the latter, legs pivoted to the foot-rail section near the foot end of the same, and a break-joint brace having a pivotal connection at its ends with said outer arms of the first-named brace and said legs.

2. A folding bed, comprising a frame, a substantially V-shaped brace pivoted to the base of the frame, a head-rail section pivoted near its head end to the frame and adapted to rest upon one arm of said brace and to be interlocked with the same, a foot-rail section pivoted to the head-rail section between the arms of said brace and having a slidable connection with the outer arms of the latter, legs pivoted to the foot-rail section near the foot end of the same, and a break-joint brace having a pivotal connection at its ends with the outer arms of the first-named brace and said legs.

3. A folding bed, comprising a frame, a substantially V-shaped brace pivoted to the base of the frame, a head-rail section pivoted near its head end to the frame and adapted to rest upon one arm of said brace, a foot-rail section pivoted to the head-rail section between the arms of said brace and having a slidable connection with the outer arms of the latter, legs pivoted to the foot-rail section near the foot end of the same, a break-joint brace having a pivotal connection at its ends with the outer arms of the first-named brace and said legs, and a retractile spring connecting the frame with the first-named brace and tending to effect the folding of the bed.

4. A folding bed, comprising a frame, a substantially V-shaped brace pivoted to the base of the frame, a head-rail section pivoted near its head end to the frame and adapted to rest upon one arm of said brace, a foot-rail section pivoted to the head-rail section between the arms of said brace and having a slidable connection with the outer arms of the latter, legs pivoted to the foot-rail section near the foot end of the same, a break-joint brace having a pivotal connection at its ends with the outer arms of the first-named brace and said legs, and a retractile spring connecting the frame with the foot-rail section and tending when the bed is unfolded to hold the same in such position and after the bed has been folded a suitable distance to exert its power in continuing said folding operation.

5. A folding bed, comprising a frame, a substantially V-shaped brace pivoted to the base of the frame, a head-rail section pivoted near its head end to the frame and adapted to rest upon one arm of said brace, a foot-rail section pivoted to the head-rail section between the arms of said brace and having a slidable connection with the outer arms of the latter, legs pivoted to the foot-rail section near the foot end of the same, a break-joint brace having a pivotal connection at its ends with the outer arms of the first-named brace and said legs, a retractile spring connecting the first-named brace with the frame and tending to effect the folding operation of the bed, and a retractile spring connecting the frame with the foot-rail section and tending when the bed is unfolded to hold the same in



such position, and after the bed has been folded a suitable distance to exert its power in continuing said folding operation.

6. A folding bed, comprising a frame embodying standards and base-sills, pivots above said sills and between the vertical planes of their opposite ends, substantially V-shaped braces pivoted for rotation in a vertical plane on said sills near their foot ends, a head-rail section mounted near their head ends on the first-named pivots and adapted to rest upon contiguous arms of said braces, a foot-rail section pivoted for rotation in a vertical plane to the ends of the head-rail section outward of the brace-arms upon which said head-rail section is adapted to rest and having a sliding connection with the upper end of the other arms of said braces, legs pivotally attached to the foot-rail section near its foot end, and break-joint braces pivotally connected to said legs and having a pivotal connection with the upper ends of the last-named arms of said braces.

7. A folding bed, comprising a frame embodying standards and base-sills, pivots above said sills and between the vertical planes of their opposite ends, substantially V-shaped braces pivoted for rotation in a vertical plane on said sills near their foot ends, a head-rail section mounted near their head ends on the first-named pivots and adapted to rest upon contiguous arms of said braces, a foot-rail section pivoted for rotation in a vertical plane to the ends of the head-rail section outward of the brace-arms upon which said head-rail section is adapted to rest and having a sliding connection with the upper end of the other arms of said braces, legs pivotally attached to the foot-rail section near its foot end, break-joint braces pivotally connected to said legs and having a pivotal connection with the upper ends of the last-named arms of said braces, and a retractile spring connecting the frame with the first-named braces and tending to effect the folding of the bed.

8. A folding bed, comprising a frame embodying standards and base-sills, pivots above said sills and between the vertical planes of their opposite ends, substantially V-shaped braces pivoted for rotation in a vertical plane on said sills near their foot ends, a head-rail section mounted near their head ends on the first-named pivots and adapted to rest upon contiguous arms of said braces, a foot-rail section pivoted for rotation in a vertical plane to the ends of the head-rail section outward of the brace-arms upon which said head-rail section is adapted to rest and having a sliding connection with the upper end of the other arms of said braces, legs pivotally attached to the foot-rail section near its foot end, break-joint braces pivotally connected to said legs and having a pivotal connection with the upper ends of the last-named arms

of said braces, and a retractile spring connecting the frame with the foot-rail section and tending when the bed is unfolded to hold the same in such position and after the bed has been folded a suitable distance to exert its power in continuing said folding operation.

9. A folding bed, comprising a frame embodying standards and base-sills, pivots above said sills and between the vertical planes of their opposite ends, substantially V-shaped braces pivoted for rotation in a vertical plane on said sills near their foot ends, a head-rail section mounted near their head ends on the first-named pivots and adapted to rest upon contiguous arms of said braces, a foot-rail section pivoted for rotation in a vertical plane to the ends of the head-rail section outward of the brace-arms upon which said head-rail section is adapted to rest and having a sliding connection with the upper end of the other arms of said braces, legs pivotally attached to the foot-rail section near its foot end, break-joint braces pivotally connected to said legs and having a pivotal connection with the upper ends of the last-named arms of said braces, a retractile spring connecting the first-named brace with the frame and tending to effect the folding operation of the bed, and a retractile spring connecting the frame with the foot-rail section and tending when the bed is unfolded to hold the same in such position and after the bed has been folded a suitable distance to exert its power in continuing said folding operation.

10. In a folding bed, the combination of a suitable frame, a brace pivoted on the base of said frame and provided with a roller, a head-rail section pivoted for rotation in a vertical plane and adapted to rest upon said brace, a foot-rail section pivoted to the head-rail section and bearing upon the roller, a track-bar secured to the foot-rail section and adapted to engage the under side of said roller, legs pivoted to the foot-rail section, and a break-joint brace pivoted at one end to said legs and at its opposite end to the first-named brace contiguous to said roller.

11. In a folding bed, the combination of a suitable frame, a head-rail section pivoted thereto, a foot-rail section pivoted to the head-rail section, legs pivoted to the foot-rail section, braces pivoted to the frame below said head and foot rail sections and adapted to engage the head-rail section to support both sections in a substantially horizontal position and also having a sliding relation with the foot-rail section, and a break-joint brace, consisting of a pair of bars pivotally connected together, one of said bars having a pivotal connection with said first-named brace, and the other having a pivotal connection with the leg and having the lower portion of its outer end adapted to bear against said leg to positively limit downward swinging movement of said bar on said leg.



12. In a folding bed, a frame, a head-rail  
section pivoted thereto, a foot-rail section  
pivoted to the head-rail section, legs pivoted  
to the foot-rail section, braces pivoted to the  
5 frame and having sliding connection with the  
foot-rail section, means to support the head-  
rail section in a substantially horizontal posi-  
tion when the bed is unfolded, and break-  
joint braces having pivotal connections at

their ends with said legs and the braces hav- 10  
ing a sliding connection with the foot-rail  
section.

In testimony whereof I affix my signature  
in the presence of two witnesses.

JOHN L. TANDY.

Witnesses:

H. C. RODGERS,  
G. Y. THORPE.