

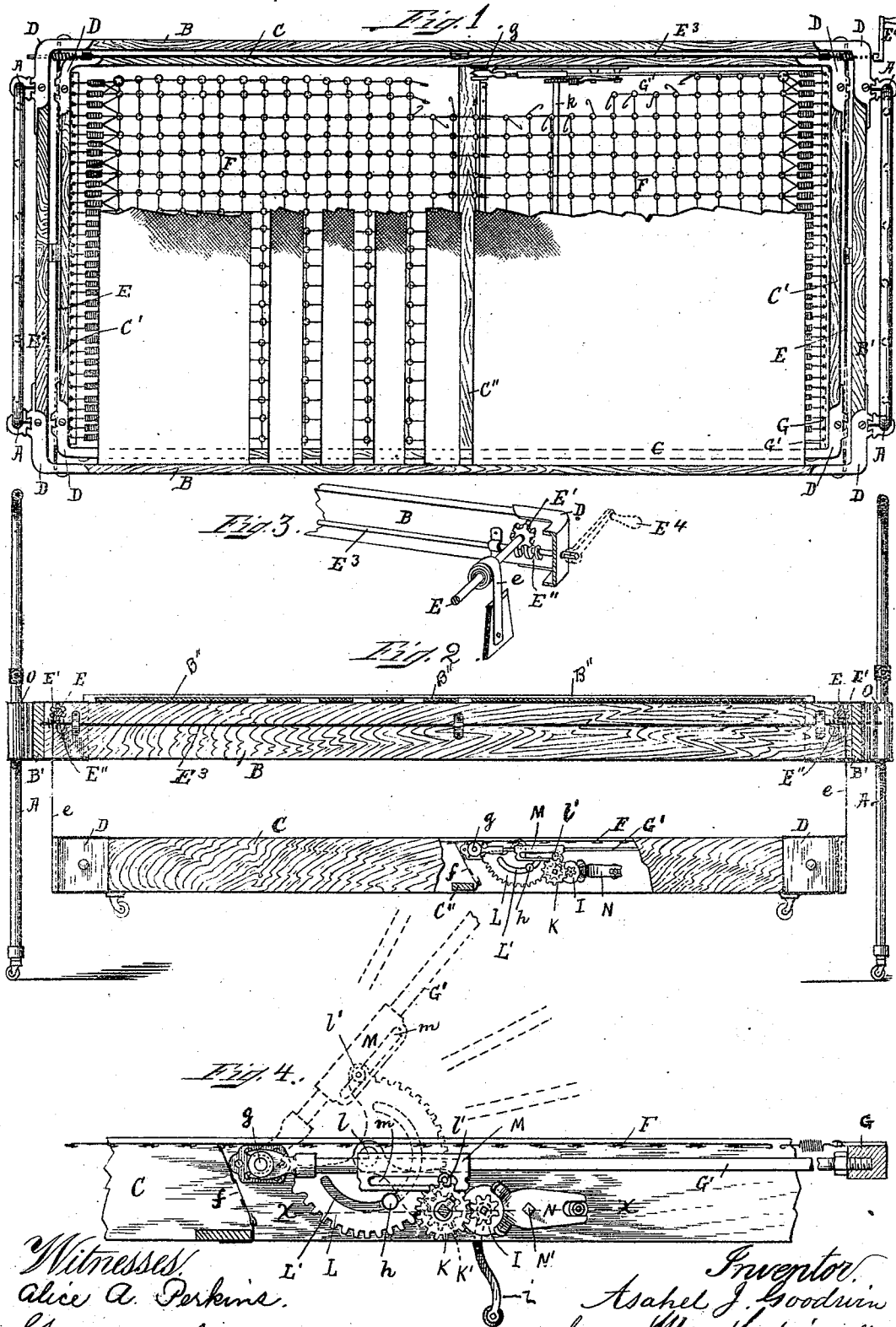
(No Model.)

3 Sheets—Sheet 1.

A. J. GOODWIN.
INVALID BEDSTEAD.

No. 501,006.

Patented July 4, 1893.



Witnesses
Alice A. Perkins.
Geo. W. White

Inventor.
Asahel J. Goodwin
by Allan Audren atts.

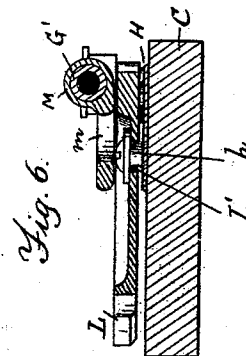
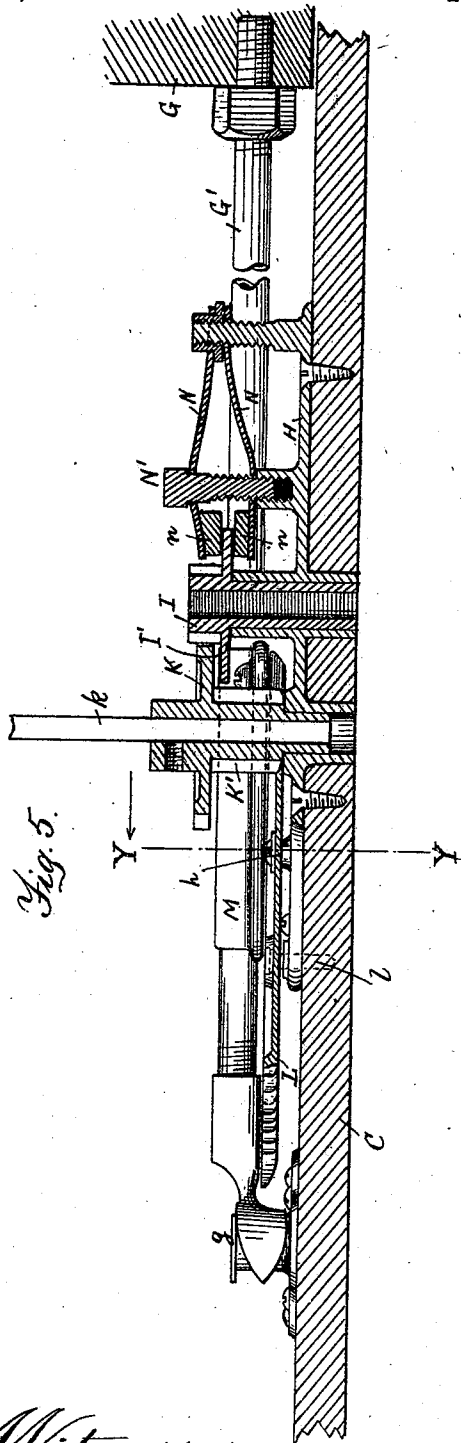
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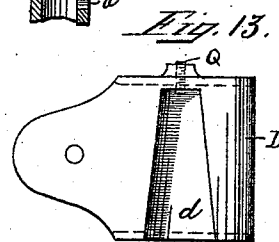
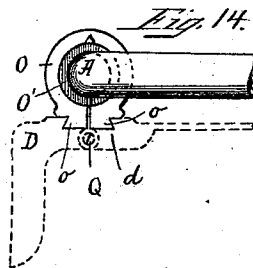
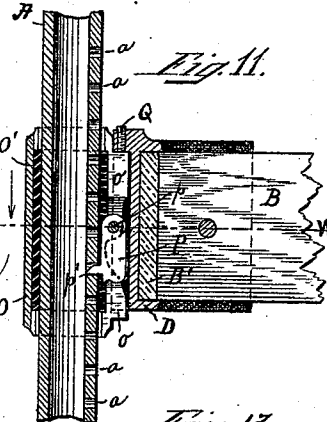
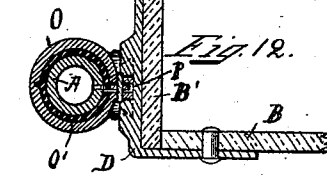
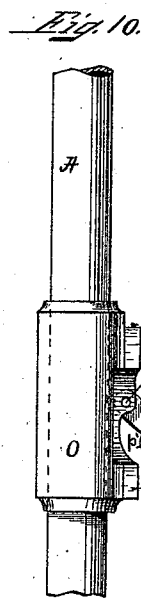
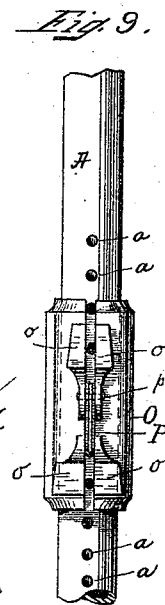
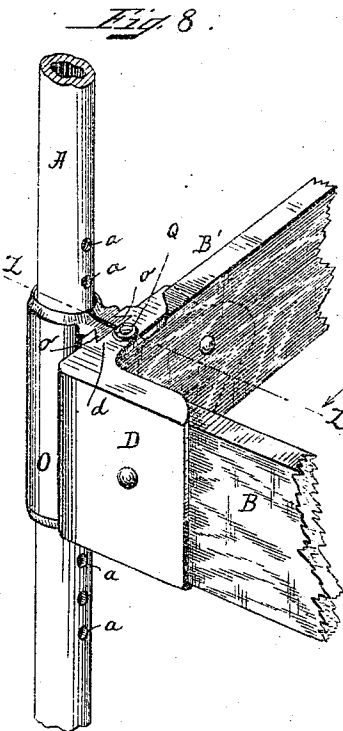
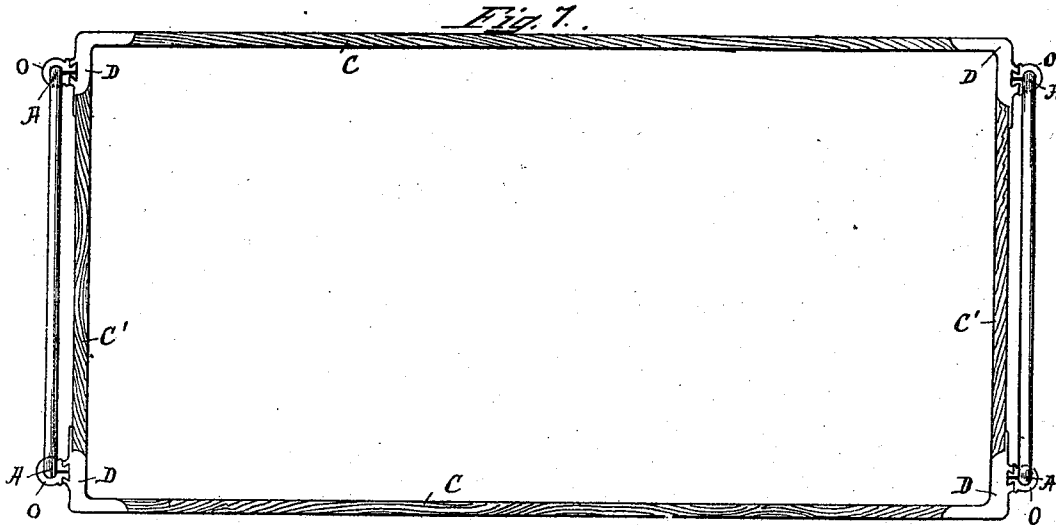
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UNITED STATES PATENT OFFICE.

ASAHIEL J. GOODWIN, OF BROOKLINE, MASSACHUSETTS.

INVALID-BEDSTEAD.

SPECIFICATION forming part of Letters Patent No. 501,006, dated July 4, 1893.

Application-filed June 18, 1891. Renewed January 5, 1893. Serial No. 457,376. (No model.)

To all whom it may concern:

Be it known that I, ASAHIEL J. GOODWIN, a citizen of the United States, and a resident of Brookline, in the county of Norfolk and State of Massachusetts, have invented new and useful Improvements in Invalid-Bedsteads, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in bedsteads and it consists in the construction, combination and arrangement of parts hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view of the exterior bed frame and the interior bed frame suspended from the former. Fig. 2 represents a longitudinal section of the exterior frame and a side elevation of the interior frame, showing a portion of the latter as broken away. Fig. 3 represents a perspective view showing the mechanism for raising and lowering the inner frame. Fig. 4 represents a detail side elevation of mechanism for inclining the mattress on the interior frame. Fig. 5 represents an enlarged cross-section on the line X—X shown in Fig. 4. Fig. 6 represents a cross-section on the line Y—Y shown in Fig. 5. Fig. 7 represents a plan view of the interior frame showing it as secured to the bed posts. Fig. 8 represents a perspective view of the clamping device for securing the frame in an adjustable manner to the bed post. Fig. 9 represents an end view, and Fig. 10 represents a side elevation of said clamping device. Fig. 11 represents a longitudinal section on the line Z—Z shown in Fig. 8. Fig. 12 represents a cross-section on the line W—W shown in Fig. 11. Fig. 13 represents a detail end elevation of one of the corner pieces by means of which the sides and ends of the bed-frames are united; and Fig. 14 represents a top view of one of the clamping sleeves, showing the bed frame corner piece in dotted lines. Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

A, A, are the bed posts preferably made of tubular metal as is common in invalid or other bedsteads.

B, B, are the sides and B', B' the ends of the outer bed frame, which sides and ends

are secured together by means of metal corner pieces D, D.

B'', B'', are canvas bands, webbing or straps of any suitable material secured to the rods B, B, of the outer frame as usual.

C, C, are the sides and C', C', the ends of the inner bed frame which are secured together by metal corner pieces D, D, like those for securing the sides and ends of the outer bed frame. The inner bed frame is preferably suspended from the outer one as shown in Figs. 1, 2 and 3, preferably by means of straps *e, e*, secured to the inner end pieces C', C', and to shafts E, E, journaled in the outer frame sides B, B, and provided with pinions E' meshing in worms E'' secured to a shaft E³ which may be turned by means of a crank E⁴ as shown in Fig. 3. By this arrangement the lower bed may be raised for the patient or invalid to rest on, and it may be lowered whenever so desired to permit the bed to be made up, aired or for other purposes, allowing the patient to be temporarily supported on the bands, canvas or mattress of the upper bed.

F is the wire mattress of the inner bed, said mattress being attached at one end to one of the end pieces C' and at its opposite end to a cross bar G having attached to its ends the levers G', G', preferably made of metal and having their inner ends pivoted at *g* to the side pieces C, C, as shown in detail in Figs. 4, 5 and 6. It will thus be seen that a portion of the said mattress F may be inclined relative to the remaining portion thereof simply by raising the bar G and its levers G', G', more or less as may suit the requirements of the occupant. For the purpose of keeping said mattress taut while a portion of it is being inclined, I prefer to connect said mattress at or near the fulcrum of the levers G', G' to a cross bar C'' secured to the sides C, C, of the inner frame and a strap or link as shown at *f* in Figs. 2 and 4.

The mechanism swinging the levers G', G', is constructed as follows: To the inside of each side piece C of the inner bed is secured a suitable metal plate H, shown in detail in Figs. 5 and 6. In said plate is journaled the hub of the pinion I the teeth of which mesh in the teeth of the gear K that is secured to the cross shaft *k*, having its ends journaled

in bearings in the plates H, H. K' is a small pinion preferably cast in one piece with the gear K, which pinion has its teeth meshing in the teeth of the segment gear L that is pivoted at *l* to the plate H. *l'* is a pin, or pin and roll, on the segment gear L fitting into a slot *m* on the block M, which is secured on the lever G' as shown in Figs. 2, 4, 5 and 6. It will thus be seen that by turning the pinion I (by means of a crank *i*, Fig. 4 or other equivalent device) the segment gear L is turned around its axis, causing the levers G', G', and the mattress portion attached thereto to be swung more or less on the fulcrum *g*, *g*, until the desired inclination of such mattress portion is obtained. By this arrangement I obtain a very steady and accurate adjusting movement, as well as a great leverage for raising the levers, and mattress requiring but very slight power for its operation. For the purpose of steadying the motion of the segment gear L, I prefer to provide it with a curved slot L' adapted to receive a steady pin or projection *h* secured to the plate H or side piece C as shown in Figs. 2, 4 and 6.

For the purpose of holding the raised mattress portion in any desired position I make use of any well known friction or braking device and for this purpose I have shown in Fig. 5, an annular disk I', secured to the pinion I, against opposite sides of which are held brake shoes *n*, *n*, attached to brake plates N, N as shown in Fig. 5. The brake shoes aforesaid are held against the said disk I' in an adjustable manner by means of a set screw N' or equivalent clamping device.

For the purpose of securing the bed to the posts in a vertically adjustable manner, I make use of the following mechanism, shown in detail in Figs. 8, 9, 10, 11, 12 and 13: On the outside of each metal corner piece D is a tapering dovetailed recess *d* adapted to receive correspondingly shaped dovetailed projections *o*, *o*, on a slitted expansive metal sleeve O adapted to receive the bed post A as shown. The said sleeve is preferably provided with an internal lining O' made of cloth, leather or other suitable material so as to prevent the post from being scratched, defaced or injured when the sleeve is clamped around it.

For the purpose of temporarily securing each sleeve to its post before the bed frame is secured to the sleeves, I make use of a dog P pivoted to the sleeve O at *p* and having a lip or projection *p'* adapted to be inserted into one of the perforations *a*, on the bed post A.

In setting up the bed, the sleeves O, O, are adjusted on the bed posts to the height desired from the floor and the dogs P, P, are locked into the perforations *a*, *a*, on the bed posts after which the bed frame is placed in position relative to the sleeves O, O, in such a manner as to cause the tapering dovetailed projections *o*, *o*, on the slitted sleeves to enter the dovetailed recesses *d*, *d*, on the corner pieces D, D. If now the bed frame and its corner

pieces are pressed or hammered down, the sleeves O, O, will be compressed around the bed posts sufficiently to hold the said sleeves firmly in position on the bed posts. The corners D may be detached from the sleeves O, if so desired by striking a blow upward on the under side of such corners, but in practice I prefer to use for this purpose a set screw Q screwed through the upper portion of each corner as shown in Figs. 8, 11, 13 and 14. By screwing such screw against the upper end of the tapering dovetailed projections *o*, *o*, the corner D is forced upward sufficiently to be released from said projections *o*, *o*, after which the bed frame may be raised and detached from the sleeves O.

In practice either one of the bed frames may be secured to the sleeves O, O, and their bed posts. Thus for instance for ordinary purposes the smaller bed frame C, C', may be alone secured to the said sleeves and posts as shown in Fig. 7, and the device used as an ordinary bed. If at any time it is desired to use the device as an invalid bed it is only necessary to detach the bed C, C' from the posts and secure in its place the larger bed B, B', and suspend below it the bed C, C' as fully represented in Figs. 1 and 2.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim—

1. In an invalid bed, the combination with corner posts provided with a series of perforations, of vertically adjustable slitted sleeves thereon provided with a dog to engage the perforations in the corner posts, tapering dovetailed projections on said slitted sleeves a portion of each projection located on each side of the slit in said sleeves, and inner and outer bed frames having corner pieces provided with tapering dovetailed recesses to engage the tapering dovetailed projections of the slitted sleeves, substantially as described.

2. In an invalid bed, the combination with corner posts provided with perforations, of vertically adjustable sleeves thereon having dogs connected therewith to engage the perforations in the corner posts, inner and outer bed frames having corner pieces provided with tapering dovetailed recesses for engagement with tapering dovetailed projections on the vertically adjustable sleeves, and a screw for disengaging the same, substantially as described.

3. In an invalid bed, the combination with corner posts, of slitted sleeves thereon provided with tapering dovetailed projections, a portion of each projection located on opposite sides of the slit in said sleeves, inner and outer bed-frames having corner pieces provided with tapering dovetailed recesses, whereby when the said dovetailed projections and recesses are in engagement the slitted sleeves are firmly held on the corner posts, and a screw for disengaging the same, substantially as described.

4. In an invalid bed, the combination, with

corner posts and a bed frame secured thereto, of levers G', G', connected at one of their ends to a cross bar G, to which cross-bar one end of the mattress is secured, and at their other
5 ends pivoted to the sides of the bed frame, a slotted block M carried by one of the levers G', a plate H, secured to a side piece of the bed frame and provided with a steadying pin h, a segmental gear L pivoted to said plate, said
10 segmental gear having a slot formed concentric with its pivotal point to receive the steadying pin h, a pin l' formed at one end of said segmental gear L and working in the slot in the block M, a pinion I journaled in said
15 plate H, a gear K meshing therewith, a pin-

ion K' formed integral with said gear K and meshing with the segmental gear L, mechanism for operating said gearing to elevate the mattress and a brake mechanism for retaining said mattress in its elevated position, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 12th day of June, A. D. 1891.

ASAHEL J. GOODWIN.

Witnesses:

ALBAN ANDRÉN,
ALICE A. PERKINS.