

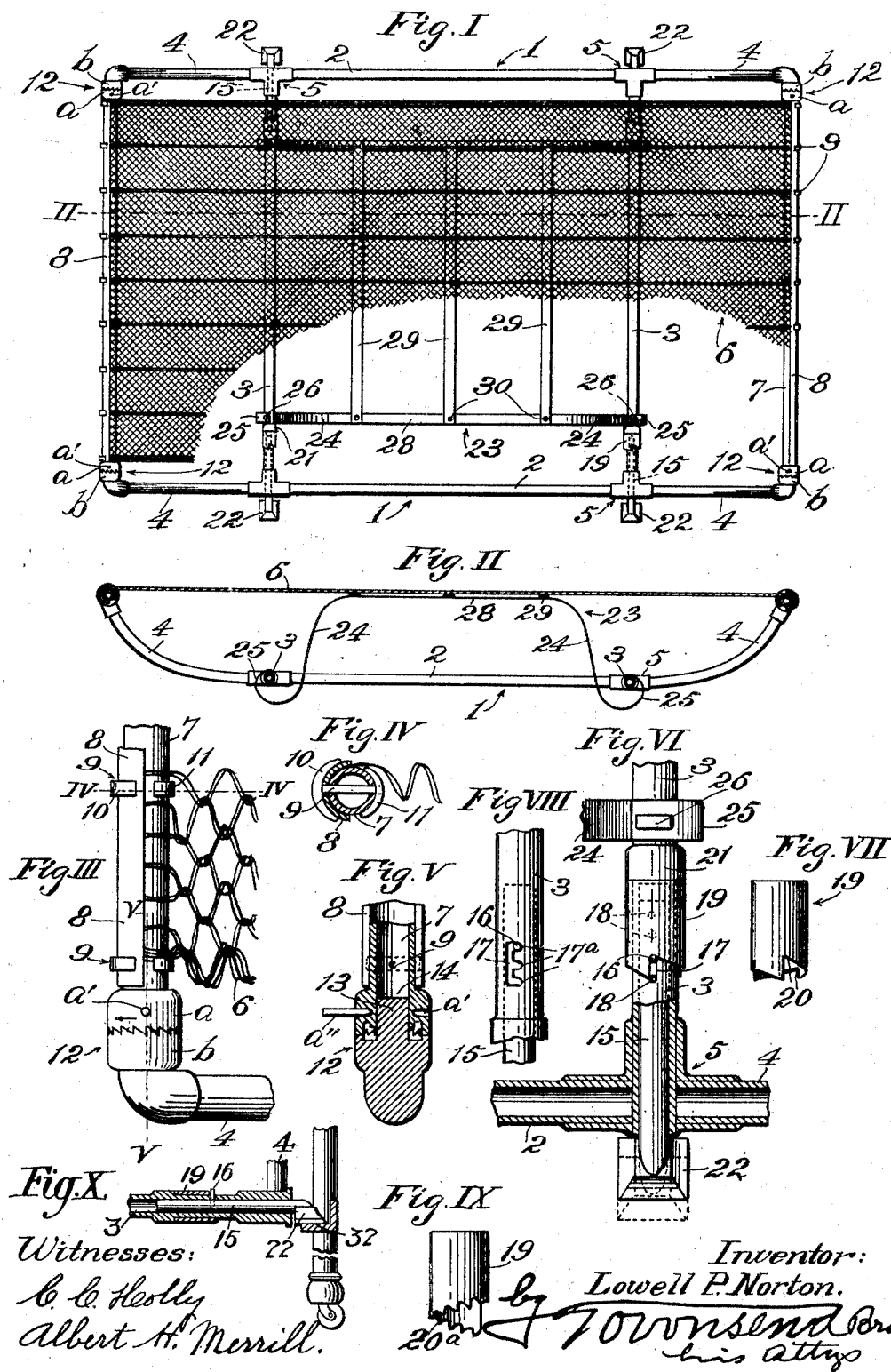
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PATENTED MAY 24, 1904.

L. P. NORTON.
SPRING BED.

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NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

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SPRING-BED.

SPECIFICATION forming part of Letters Patent No. 760,552, dated May 24, 1904.

Application filed April 27, 1903. Serial No. 154,419. (No model.)

To all whom it may concern:

Be it known that I, LOWELL P. NORTON, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented an Improved Spring-Bed, of which the following is a specification.

An object of this invention is to provide improved means for taking up the longitudinal slack of a woven-wire or like mattress support.

Another object is to furnish the framework which sustains the mattress-support with means whereby said framework may be adjusted to bedsteads of different widths.

A further object is to prevent the mattress-support from sagging in the middle.

Other objects are to provide a bed that will not emit creaking noises and may easily be kept clean and free from vermin.

With these and other objects in view my invention consists generally in a main mattress-supporting frame provided with means for being adjusted to fit bedsteads of varying widths, a supplemental frame mounted on the main frame and adapted to bear yieldingly upward against a mattress-support, and a shaft at one or both ends of the main frame provided with a clamp for holding a flexible mattress-support, said shaft being provided with a ratchet device to prevent backward rotation thereof when rotated to take up the slack in the mattress-support.

More specifically, my invention consists in the constructions and combinations of parts hereinafter described, and particularly pointed out in the claims.

Referring to the accompanying drawings, illustrating this invention, Figure I is a plan view of a bed embodying the invention, part of the mattress-support being broken away to simplify the view and better disclose underlying parts. Fig. II is a vertical section on line II II of Fig. I. Figs. III, IV, and V are details of the device for holding and tightening the mattress-support, Figs. IV and V being sectional views taken, respectively, on lines IV IV and V V of Fig. III. Figs. VI

and VII are detail views illustrating mainly the means for adjusting the mattress-supporting frame to beds of different widths. Figs. VIII and IX are detail views showing modifications of the construction illustrated in Figs. VI and VII. Fig. X is a transverse sectional view of a portion of the device and showing part of a bedstead with the device mounted thereon.

1 in a general way designates the main frame, which is preferably composed of hollow metallic rods. Said frame is provided with side pieces 2, cross-pieces 3, and resilient extensions 4, all joined to each other in any suitable way, as by being cast together, as shown in section at 5 in Fig. VI, after having their ends inserted into a T-shaped mold. (Not shown.)

A flexible mattress-support 6, desirably composed of woven wire, is fastened at each end to rotatable members or shafts. 8 designates concave clamping members extending from end to end of the shafts and provided with clamping-pins 9, having curved T-heads 10 and oppositely-curved winged nuts 11, adapted to conform to the curved surfaces of the parts and to be riveted to said pins to clamp the member 8 toward shaft 7 and against mattress-support 6, as shown.

The object of using rivets having curved T-heads and winged nuts is to prevent said heads and nuts from breaking through the thin tubular material, which is cheapest and most convenient to use. The winged nuts 11 cooperate with the T-heads 10 to attain this desirable end.

12 in a general way designates ratchet devices for preventing backward rotation of the shafts 7 when they are rotated to tighten the mattress-support. Each ratchet device comprises two oppositely-disposed members *a* and *b*, having cooperating ratchet-teeth, as shown.

The member *a* is attached to the end of shaft 7, and the member *b* is attached near the end of resilient extension 4, as best shown in Figs. III and V. The shafts 7 are rotatably mounted upon and between said extensions 4 by means of a stud-and-socket connection, illustrated in detail in Fig. V, where 13 designates the

stud and 14 the socket. The stud and socket may be disposed in the reverse position to that shown in Fig. V; but it is preferable that the stud project into the end of the shaft, so that the intumed portions of extensions 4 may be made as short as possible to economize space. Said extensions 4 are slightly resilient and are preferably steel tubes.

a' designates apertures into which a pointed instrument *a''* may be inserted to turn the ratchet member *a*, together with the shaft, to tighten the mattress-support. The resilient extensions 4 coöperate with the stud-and-socket connections to allow the toothed members *a b* to yield from each other sufficiently for their oppositely-disposed ratchet-teeth to slide past each other when the shaft is turned to tighten the mattress-support; but the studs are of sufficient length to safely hold the shaft in place, while allowing the necessary longitudinal play.

By the construction just described a ratchet device is provided which is an improvement upon the ordinary spring-pressed clutch in that the resilient portions 4 of the frame are utilized to perform the work of ordinary springs, which might rust out and would not be so strong and positive in their action. Moreover, said construction secures an improved effect with the use of fewer parts, because the extensions 4 act as combined supports and springs.

The cross-pieces 3 are made hollow throughout or else provided with sockets which register with openings which extend through *T*'s 5 to the outside of the frame.

15 designates arms adapted to telescope into the ends of the cross-pieces 3 and be longitudinally adjusted therein by means of projections or pins 16, inserted through slots or perforations 17 through the walls of the tubular cross-pieces 3 into the members of a series of holes 18 in the arms, the object of this construction being to prevent extensible arms 15 from telescoping within the cross-pieces except as predetermined. By making the cross-pieces 3 tubular I obtain strength of construction and at the same time provide sockets for extensible arms 15 without additional expense in manufacturing.

In order to more readily and accurately adjust arms 15, revoluble sleeves 19 may be mounted on cross-pieces 3 near their ends, said sleeves being provided at the outer ends with a series of notches 20, said notches being of varying depths and adapted to engage pins 16, thereby to hold arms 15 more or less extended, according to the depth of the notch brought opposite the pin.

21 is a stop to keep the sleeves from sliding away from the pins.

22 is a "hand" at the outer end of each arm and provided with an under bearing-sur-

face adapted to rest upon the cleats 32 ordinarily secured to the inner sides of the side pieces of a bedstead.

By using a graduated series of notches or shoulders at the end of sleeves 19, as shown at 20^a in Fig. IX, in connection with the series of holes in the extensible arms 15 it is possible to fit hands 22 closely against the side boards of a bedstead, so that the hands will not rattle or be apt to get out of place or slide off from the cleats.

In Fig. VIII the shoulders against which pins 16 bear to hold arms 15 from sliding toward the center of the bed are formed along one side of the slot 17 by providing said slot with a series of notches 17^a. When this construction is used, the hands 22 and pins 16 are fixed to the arms 15 in such relation to each other that a pin will fit into a notch when the hand is in a horizontal position, the arms being rocked in sliding the pins from one notch to the next and the pins being held into the notches by the hands resting on horizontal cleats 32. When this construction is used, the sleeves 19 will be dispensed with, and a removable pin may still be employed in connection with a series of holes in the extensible arm. Employing a series of shoulders, a series of holes in the arm, and a removable pin in connection therewith gives a wider range of adjustment.

23 in a general way designates a supplemental mattress-support comprising a resilient framework intended to sustain the central portion of the mattress-support for the purpose of checking the common tendency to sag in the middle after long use. Said framework has a flat top portion engaging the central portion of the mattress-support and downwardly-extending resilient arms 24, having upcurled ends 25 fixed to the cross-pieces of the frame by rivets 26 or other fastening devices. I prefer, however, to use rivets having curved *T*-heads similar to those used on rivets 9 and to attach arms 24 to cross-pieces 3, as shown in Figs. I, II, and VI.

28 designates the side pieces, and 29 the cross-pieces, of said resilient framework.

30 designates rivets fastening said pieces together.

It is to be understood that the construction claimed is not limited to exactly what is described, but that many modifications and many mechanical equivalents may be used without departing from the spirit of this invention.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a device of the class described, a socketed cross-piece having a perforated wall, an extensible arm adapted to slide in the socket and having a projection extending through said perforated wall, a part movably mounted on said cross-piece and having a series of

notches adapted to engage said projection, and means preventing said part from sliding longitudinally of said cross-piece.

2. In a device of the class described, a socketed cross-piece having a perforated wall, an extensible arm adapted to slide in the socket and furnished with a projection extending through said perforated wall, a revoluble sleeve mounted on said cross-piece and having a series of notches adapted to engage said projection, and means preventing said sleeve from sliding longitudinally of said cross-piece.

3. In a device of the class described, a socketed cross-piece having a longitudinally-slotted wall, an extensible arm provided with a hole in the side thereof and adapted to slide in the socket, a removable pin adapted for insertion into said hole and projecting through the slot said perforated wall, a part movably mounted on said cross-piece and having a series of notches adapted to engage said pin, and means preventing said part from sliding longitudinally of said cross-piece.

4. In a device of the class described, a socketed cross-piece having a perforated wall, an extensible arm provided with a hole in the side thereof and adapted to slide in the socket, a removable pin adapted for insertion into said hole and projecting through said perforated wall, a sleeve revolubly mounted on said cross-piece and having a series of notches adapted to engage said pin, and means preventing said sleeve from sliding away from said pin.

5. In a bed, in combination, a frame, a shaft, a clamp adapted to fasten a flexible mattress-support to said shaft, a set of ratchet-teeth mounted on one end of the shaft, and a non-revoluble set of ratchet-teeth adapted to cooperate with said first-named set, said non-revoluble set of ratchet-teeth being yieldingly held against the other set by a resilient portion of the frame.

6. In a bed, in combination, a frame, a shaft, a clamp adapted to fasten a flexible mattress-support to said shaft, and a ratchet device for preventing backward rotation of said shaft, the revoluble member of said ratchet device being carried by said shaft and the stationary member thereof being yieldingly held against the movable portion thereof by a resilient portion of the frame.

7. In a bed, in combination, a frame, a shaft, means adapted to fasten a flexible mattress-support to said shaft, and a ratchet device for preventing backward rotation of said shaft, the revoluble member of said ratchet device being carried by said shaft, and the non-revoluble member thereof being mounted on a resilient portion of the frame, and thereby yieldingly held in operative position.

8. In a bed, in combination, a frame provided with laterally-resilient extensions, a

horizontal shaft mounted on and between said extensions, means adapted to fasten a flexible mattress-support to said shaft, a set of ratchet-teeth encircling said shaft and carried thereby adjacent to one of said extensions, and a second set of ratchet-teeth, mounted on the extension and operatively connected with the first-named set, means being provided for rotating the shaft.

9. In a bed, in combination, a frame provided with resilient extensions, a rotatable shaft mounted between and having stud-and-socket connections with said extensions, means extending from end to end of said shaft and adapted to fasten a flexible mattress-support thereto, and a ratchet device having the revoluble portion thereof attached to the shaft and the non-revoluble portion carried by an extension of the frame.

10. A bed provided with hollow perforated cross-pieces, extensible arms projecting through said cross-pieces, the outer ends of which are adapted to rest upon supports and the inner ends are provided with holes adapted to register with the perforations in the cross-pieces, pins in said holes, and means engaging said pins to prevent the arms telescoping within the cross-pieces except as predetermined.

11. A bed provided with hollow perforated cross-pieces, extensible arms projecting through said cross-pieces, the outer ends of which are adapted to rest upon supports and the inner ends are provided with holes adapted to register with the perforations in the cross-pieces, pins in said holes, and a series of notches formed in a part adapted to engage said pins to prevent the arms telescoping within the cross-pieces except as predetermined.

12. A bed provided with hollow perforated cross-pieces having extensible arms projecting therefrom, holes in the arms adapted to register with the perforations in the cross-pieces, and pins to prevent the arms telescoping within the cross-pieces except as predetermined.

13. A bed including a mattress-support, a frame provided with a hollow longitudinally-slotted cross-piece, an arm telescoping within said cross-piece, a pin adapted to be inserted through the slot into a hole in the arm, and a series of shoulders adjacent to the slot and respectively adapted to be brought into engagement with said pin.

14. A bed including a mattress-support, a frame provided with a tubular cross-piece opening out at each side thereof and having a perforated wall, an arm telescoping into each end of said cross-piece, pins adapted to be inserted through the perforation into a series of holes in the arm, and a series of shoulders adjacent to the slot and respectively adapted to be brought into engagement with said pin.

15. In a bed, a frame provided with a tubular T at the side, a side piece of said frame

telescoping into one arm of the T, an extension telescoping into the other arm of the T, a tubular cross-piece telescoping into the stem and through the top of the T, and an extensible arm telescoping into and projecting from the end of the cross-piece.

In testimony whereof I have signed my name to this specification, in the presence of two sub-

scribing witnesses, at Los Angeles, in the county of Los Angeles and State of California, this 20th day of April, 1903.

LOWELL P. NORTON.

Witnesses:

ALBERT H. MERRILL,
JULIA TOWNSEND.