No. 649,984. Patented May 22, 1900.

L. A. GOODSON & C. S. BURTON.

INVALID BED.

(Application filed Dec. 23, 1899.)

(No Model.)

Fig. 1.

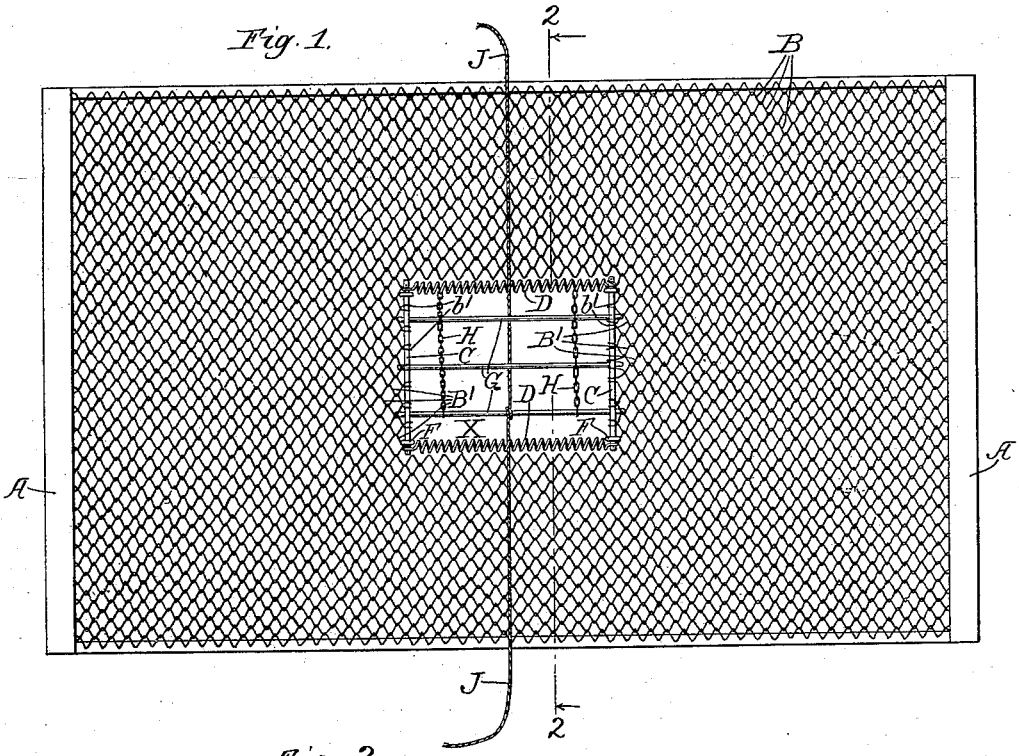


Fig. 2.

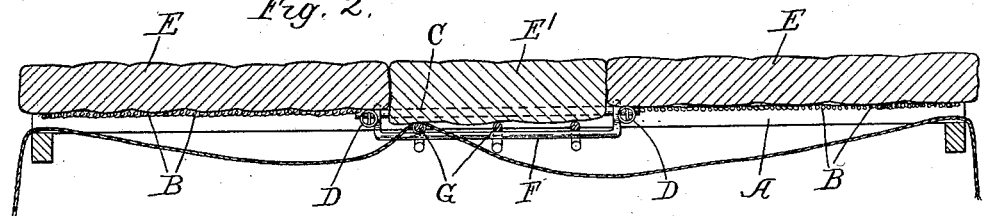
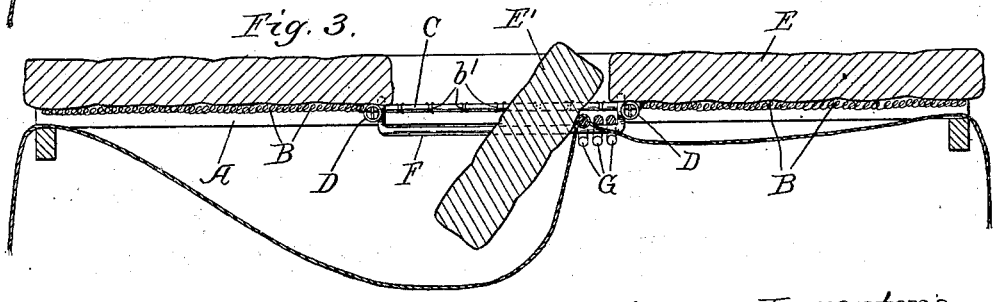


Fig. 3.



Witnesses.

Edward T. Wray.

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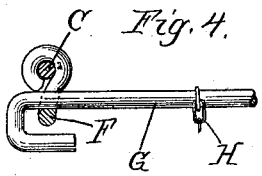
Fig. 4.



Inventors.

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by Burton and Burton

their Attys

UNITED STATES PATENT OFFICE.

LYDIA A. GOODSON, OF ELGIN, AND CHARLES S. BURTON, OF OAK PARK, ILLINOIS; SAID BURTON ASSIGNOR TO SAID GOODSON.

INVALID-BED.

SPECIFICATION forming part of Letters Patent No. 649,984, dated May 22, 1900.

Application filed December 23, 1899. Serial No. 741,359. (No model.)

To all whom it may concern:

Be it known that we, LYDIA A. GOODSON, of Elgin, county of Kane, and CHARLES S. BURTON, of Oak Park, county of Cook, State of Illinois, citizens of the United States, have invented new and useful Improvements in Invalid-Beds, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof.

In the drawings, Figure 1 is a plan of a woven-wire bed-spring having the features which distinguish our invention. Fig. 2 is a vertical section at the line 2 2 on Fig. 1 through the bed-spring and mattress thereon, showing the parts in position of use. Fig. 3 is a similar view showing the parts in position occupied while removing or inserting the mattress-plug. Fig. 4 is a detail section of a displaceable device for supporting the mattress-plug.

The purpose of this invention is to afford conveniences in caring for bedridden persons, and particularly to provide a woven-wire bed-spring having the special appliances permitting the use therewith of a mattress provided with an aperture closed by a removable section and having for that purpose a corresponding aperture with displaceable supports for the removable mattress-section.

A A are the end sills of the frame of the woven-wire spring.

B B B, &c., are the longitudinal coils, which are interlaced to form the spring and of which a certain number at the middle part of the width of the spring are interrupted or cut off to form the aperture in the spring.

C C are rods or bars to which the severed ends of the coils B′ B′ are connected, said rods or bars extending across the ends of the aperture X. The ends of the coils B′ are secured to these rods or bars by having the wire formed into an eye *b′*, which encircles the rods, of which the preferable form is a cylindrical rod or wire, as shown. The corresponding ends of the two rods C C are connected by coiled springs D D, which are calculated and designed to be heavy enough to offer a resistance to stretching equal to that which would be offered by all the coils of the bed-spring, which are cut out to form the aperture X, so that when the severed ends of the interrupted coils B′ are connected to the cross-bars C C and said cross-bars are connected by the springs D D the longitudinal extensibility and elastic reaction of the middle portion of the bed-spring, in which the aperture constitutes an interruption, are substantially the same as they would have been if the aperture were not formed and all the coils were continuous from end to end, so that the spring as a whole has substantially uniform stiffness throughout or as nearly uniform with the aperture as it would have been without the aperture. The aperture X is preferably made large enough to permit the removable piece E′ of the mattress E, which is formed to fill a corresponding aperture in the mattress at a position directly over the aperture in the bed-spring, to readily pass through said aperture X, which is therefore a little greater in each dimension than the aperture in the mattress, and in order to support the plug or removable piece E′ of the mattress we provide rods F F, parallel to and suspended from the rods C C, respectively, and we lodge on these suspended rods F the rods or bars G G G, whose opposite ends are introverted or hooked, so that when both ends are lodged upon and engaged with the rods F F they are not liable to be accidentally disengaged, and we make these rods G G long enough between the bends of the hooks to allow the springs D D to stretch to the maximum extent to which they are liable in the use of the bed without experiencing any restraint by reason of the connection which the rods G G form across the length of the aperture X. This accommodation may be afforded merely by the swing of the suspended rods F F if they are suspended loosely, so as to swing; but if they are formed, as they may be, rigid with the rods C C (and they may be formed integrally with such rods, respectively) the necessary accommodation should be provided in the length of the rods G, and the hooks at the ends of these rods should in

that case be sufficiently extended so that the rods will not become disengaged when the springs D D are most contracted and the aperture X is shortest. In order to facilitate the displacing of the rods G to remove or admit the mattress-plug E′ and the restoration of the rods to position to support such plug, we connect the three rods by light chains or other flexible connection H H, said chains extending at one end to one of the springs D and being attached thereto, the length of chain to the spring and length of chain between the rods successively being such as to cause the rods when the chain is drawn taut to be properly distributed and located over the width of the aperture X. To the rod G most remote from the spring D to which the chains are attached we attach a third chain or cord J, and we extend that cord preferably out past the lateral portion of the bed-spring to the two sides of the bed, where it may be reached and manipulated. In order to withdraw the rods to one side of the aperture, leaving the aperture open for the passage of the mattress-plug E′, the end of the cord J at the side at which the chains H H are attached to the spring D will be drawn, with the result that all the rods will be assembled together at that side of the aperture. In order to restore them to position for supporting the mattress-plug E′, the other end of the cord J will be pulled until the chains H H are taut, which will occur only when the rods are properly distributed over the width of the aperture.

We do not limit ourselves to the specific means of connecting the cross rods or bars C C, nor to the specific means for placing and displacing the supports for the mattress-plug E′, nor to the use of rods for that purpose; but the specific means shown is recommended as simple of construction and easy of operation and not liable to disarrangement, and these devices are therefore claimed specifically by reason of their specific advantages.

We claim—

1. An invalid-bed, comprising a woven-wire spring-mattress support having an aperture formed by interrupting the longitudinal coils of wire of which such spring-mattress support is made; transverse bars which form the end boundaries of such aperture, having the ends of such interrupted coils secured to them, respectively, and elastically-extensible connections between the corresponding ends of such transverse bars at the opposite sides of the aperture, independent of the uninterrupted coils of the woven-wire spring.

2. An invalid-bed, comprising a woven-wire spring-mattress support having an aperture formed by interrupting the longitudinal coils of wire of which such spring-support is made; transverse rods or bars to which the ends of such interrupted coils are secured at the ends of the aperture; connections between the corresponding ends of such transverse bars at the opposite sides of the aperture, a rod or bar supported by and extending parallel with each of the transverse bars to which the ends of the interrupted coils are secured; a rod or bar lodged at its ends upon such supported rods, adapted to slide laterally on the same and adapted thereby to serve as a removable support for the portion of the mattress above such aperture.

3. An invalid-bed comprising, in combination with a mattress having an aperture and a plug or removable section adapted to occupy such aperture, and to be removed therefrom at will, a woven-wire spring-mattress support having an aperture corresponding in position to that of the mattress, such aperture in the spring-support being formed by interrupting a portion of the longitudinal coils of wire of which such spring-support is made; transverse rods or bars forming the end boundaries of such aperture and having the ends of the interrupted coils secured to them respectively; a rod supported by and extended parallel with each of the rods to which the interrupted wire coils are attached, and a rod or bar lodged on such supported rods and adapted to support the mattress-plug and to be moved laterally on such rods to permit the mattress-plug to be inserted and withdrawn through the aperture in the spring.

4. An invalid-bed, comprising a woven-wire spring-mattress support having an aperture formed by interrupting a portion of the longitudinal coils of wire of which such spring-support is made; transverse rods or bars forming the end boundaries of such aperture and having the ends of the interrupted coils secured to them respectively; a rod or bar supported by and extending parallel with the first-mentioned rods or bars respectively, underneath the same, and a plurality of longitudinal rods or bars having their ends lodged upon said supported bars, respectively, and adapted to slide laterally on the same to clear the aperture, said sliding bars having flexible connections extending between them successively, and from the last one at one side to the lateral boundary of the aperture; and a draft device (as a cord) attached to the extreme slide toward the side opposite that at which the flexible connections are attached, and extending to both sides of the bed, whereby said slides may be all drawn to one side of the aperture, or may be distributed over its width, at will.

5. An invalid-bed, comprising a woven-wire spring-mattress support having an aperture formed by interrupting a portion of the longitudinal coils of wire of which it is made, transverse rods or bars having the ends of the interrupted coils secured to them respectively; elastically-extensible connections be-

tween the corresponding ends of said transverse bars; a rod flexibly suspended from each of said transverse bars which bound the aperture, and links or rods adapted to slide on said suspended bars, connecting them and extending longitudinally across the aperture, below the same, such links being hooked to form an engagement with the suspended rods, and being adapted to slide laterally to uncover the aperture.

In testimony whereof we have hereunto set our hands this 20th day of December, 1899.

LYDIA A. GOODSON.
CHARLES S. BURTON.

Witnesses to signature of Lydia A. Goodson:
LEO C. MACKAY,
A. L. CLARK.

Witnesses to signature of Charles S. Burton:
EDWARD T. WRAY,
ADNA S. H. BOWEN, Jr.