

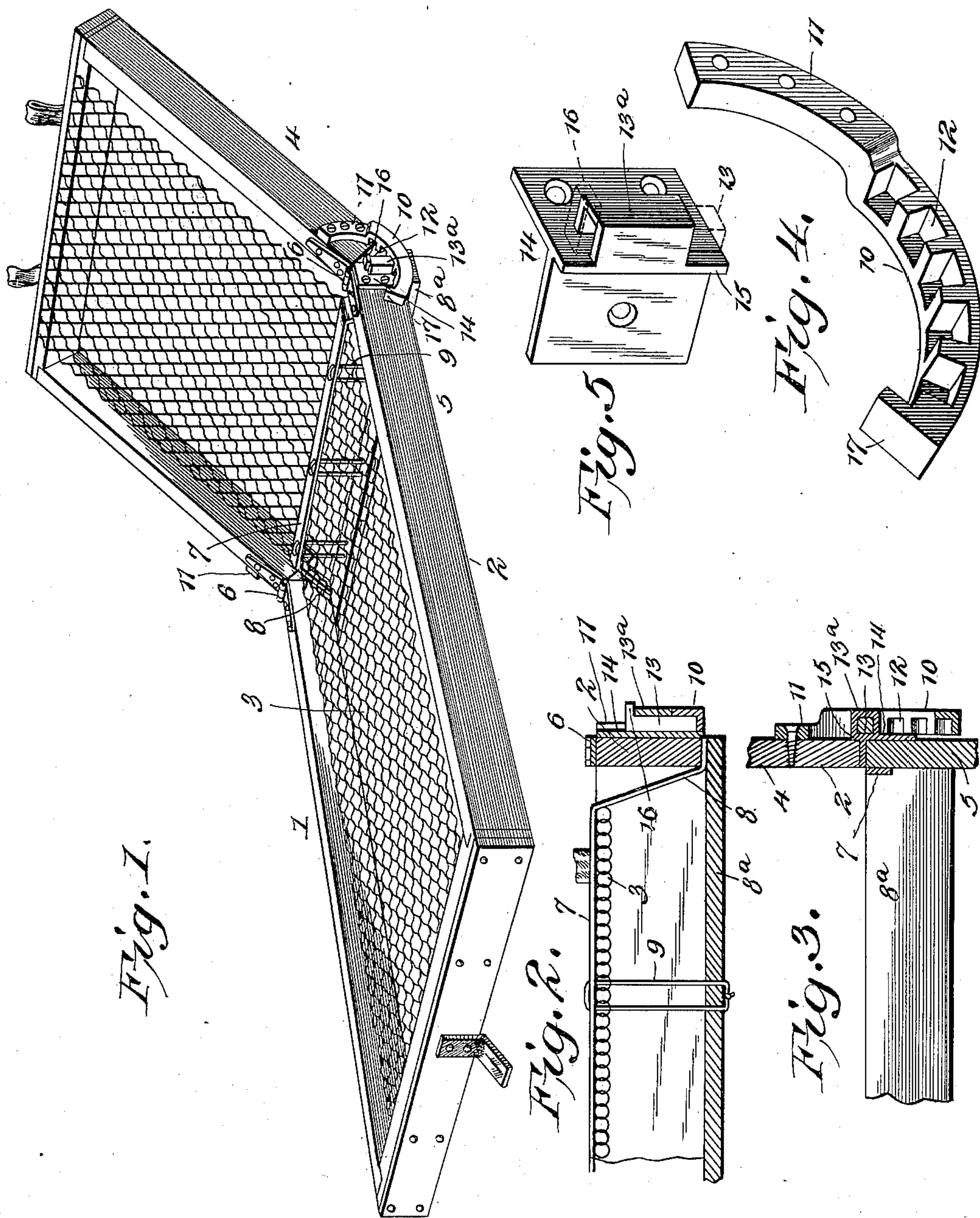
No. 662,487.

Patented Nov. 27, 1900.

W. H. DONALDSON.
INVALID BED.

(Application filed May 24, 1900.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM H. DONALDSON, OF CHICAGO, ILLINOIS.

INVALID-BED.

SPECIFICATION forming part of Letters Patent No. 662,487, dated November 27, 1900.

Application filed May 24, 1900. Serial No. 17,860. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DONALDSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Reclining and Invalid Bed, of which the following is a specification.

The invention relates to improvements in reclining and invalid beds.

One object of the present invention is to improve the construction of reclining and invalid beds and to enable an ordinary spring bed-bottom to be converted into an adjustable one without marring or in any wise altering the construction of the bedstead.

A further object of the invention is to provide a device of this character which will enable the upper portion of a bed to be readily arranged at the desired angle or inclination without affecting the length of the springs or woven-wire mattress and to cause the upper and lower portions of the same to present perfectly smooth and flat surfaces.

Another object of the invention is to provide a simple, inexpensive, and efficient device capable of firmly locking the frame of a bed-bottom in the desired position, and to house or arrange the same within an ordinary bedstead, so that the appearance thereof will not be altered.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a spring bed-bottom provided with my improvements. Fig. 2 is an enlarged transverse sectional view of one-half of the same. Fig. 3 is a horizontal sectional view of one side of the bed-bottom, the upper and lower portions of the frame being in a horizontal position. Fig. 4 is a detail perspective view of one of the curved ratchets. Fig. 5 is a similar view of one of the corner-plates.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a spring bed-bottom consisting of a rectangular frame 2 and a woven-wire or spring mattress, which is secured to the top and bottom of the frame at the head and

foot of the bed in the usual manner. The spring bed-bottoms may be constructed especially for use in connection with the present invention, but the latter is equally applicable to the ordinary spring bed-bottoms in use and may be applied to the same without necessitating any alteration in the construction of the bedstead or without causing the same to present a different or altered appearance. The sides of the frame 2 are divided between their ends to form upper and lower sections 4 and 5, which are connected at their upper edges by hinges 6, secured to the sections 4 and 5 by screws or other suitable fastening devices. The hinges, which are designed to be constructed of great strength, so that the bed-bottom when locked by the means hereinafter described will be perfectly rigid, permit the upper section of the bed-bottom to swing upward and downward to arrange it at the desired inclination from a horizontal position to a position for supporting a person while sitting or partially reclining.

The woven-wire mattress or springs 3 are applied to the frame under tension, and in order to prevent the flexible spring-mattress from shortening when the upper section is arranged at an inclination, as illustrated in Fig. 1 of the accompanying drawings, a flexible strap 7, of stout webbing or other suitable material, is arranged transversely of the upper face of the flexible mattress, with its ends secured beneath the lower edges of the sections 5 of the sides of the frame 2, between the said sections 5 and a transverse bar or brace 8^a, as clearly illustrated in Fig. 2 of the accompanying drawings. By extending the flexible strap across the mattress in this manner the springs constituting the mattress will remain at the same tension and of the same length in all the positions or adjustments of the bed, and the upper and lower sections or portions of the flexible mattress will be perfectly smooth, so as to afford straight flat supports for the upper and lower portions of the body instead of being bowed or curved, as would be the case were not the transverse strap employed. Also by connecting the ends of the transverse strap to the frame of the bed-bottom, at the lower edges of the sides, the flexible mattress is adapted

to be depressed when in a horizontal position, and the strap will rise and fall with it and not resist the downward movement of the weight or in any manner affect the resiliency of the mattress throughout the entire length of the same. The transverse strap is supported at intervals by ties or braces 9, preferably consisting of stout cords and connecting the strap with the transverse bar or brace 8^a. The cords or ties may be arranged in any suitable manner, and by connecting them with the flexible strap there is no liability of concentrating the strain on a single wire or spring and breaking the same or otherwise injuring the flexible mattress.

The upper and lower sections of the sides of the frame 2 are also connected by curved ratchets 10, provided with solid portions or shanks 11, which are secured by either bolts or screws, or both, or other suitable fastening devices to the sections 4, at the outer faces thereof. The ratchets are provided at their inner faces with notches 12, arranged at intervals and extending downward from the upper edges of the ratchets and terminating short of the bottom of the same, as clearly illustrated in Fig. 4 of the accompanying drawings. The notches or recesses of the curved ratchets may be of any desired number to effect the desired adjustment of the bed, and they are adapted to be engaged by locking pins or dogs 13, arranged in loops or ways 13 of corner-plates 14, which are secured to the inner ends of the sections 5 of the frame of the bed-bottom. The corner-plates, which are arranged on the outer faces and ends of the sections 5 of the frame 2, as clearly illustrated in Fig. 3 of the accompanying drawings, are secured to the same by screws, bolts, or other suitable fastening devices and are provided at the outer faces of the sides of the frame with projecting flanges 15, which are adapted to overlap the joints of the sides of the frame when the sections thereof are in a horizontal position. The guides 13, which are disposed vertically, consist of housings or casings which are rectangular in cross-section and which are formed integral with the corner-plates, and the locking-pin, which is vertically movable and which is gravity-acting, is provided at its upper end with a head 16, projecting slightly beyond the vertical guide or housing 13 to enable it to be readily grasped by the operator. The curved ratchets are provided at their rear ends with projecting lugs 17, forming stops and adapted to abut against the vertical casings or housings 13 to prevent the upper portion or section of the bed from being carelessly swung upward too far. The locking-pins are adapted to engage any of the recesses of the curved ratchets, and the connections between the upper and lower sections of the sides of the frame rigidly lock the sections 4 and 5 in a horizontal position or at an angle with the upper section 4 at the desired inclination.

The bed-bottom, comprising the frame and the flexible or spring mattress, is adapted to be arranged within an ordinary bedstead similar to the ordinary bed-bottom, and the curved ratchets and the locking devices will be concealed within the bedstead, so that the latter will present the appearance of an ordinary bedstead and none of the devices will be exposed. The upper section of the bed-bottom may be arranged in a horizontal position to form a continuation of the lower portion or section of the bed-bottom, and it can be readily adjusted to raise it at an inclination without disturbing the bedclothing or interfering with the comfort of a person occupying the bed.

It will be seen that the improvements herein shown and described are exceedingly simple and inexpensive in construction, that they are applicable to both new and old spring bed-bottoms having flexible mattresses, and that they do not necessitate any alteration in the construction of the bedstead itself or in any manner alter the appearance of the same. It will also be apparent that the upper and lower portions of the mattress are held perfectly smooth and even to present smooth flat supporting-surfaces when the upper section is arranged at an inclination and that when the upper section is in a horizontal position to form a continuation of the lower section the means for retaining the upper and lower portions of the mattress in such positions do not interfere at all with the resiliency of the mattress in the said horizontal position. Furthermore, it will be clear that the device is for connecting the upper and lower sections of the sides of the frame, rigidly locking the parts in their adjusted positions.

The tension of the spring-mattress or woven wire will assist the rise or upward movement of the upper section of the bed, and in order to prevent the lower section from springing upward when the sections of the bed are practically counterbalanced by the weight of a heavy person, and when it is attempted to depress or lower the upper section, a tab or strap is preferably provided at the foot of the frame 2, as clearly shown in Fig. 1. This tab or strap may be buttoned or otherwise secured to a projection, lug, or the like of the bedstead, and the upper section may be provided with loops, as shown, to assist the operator in adjusting the bed.

What I claim is—

1. A device of the class described comprising a frame designed to be placed on an ordinary bedstead and adapted to be supported by the slats thereof and composed of upper and lower sections, a flexible mattress, hinges connecting the sections of the frame, corner-plates secured to one of the sections of the frame and provided with projecting flanges to overlap the joints, and having vertical guides, curved ratchets secured to the other section of the frame, and locking-pins mounted in the guides and engaging the curved ratchets, substantially as described.

2. A device of the class described comprising a frame designed to be placed on an ordinary bedstead and adapted to be supported by the slats thereof and having hinged sections connected at their upper edges, a plate secured to one of the sections and provided with a projecting guide or housing, a curved ratchet secured to the other section and provided at its outer end with a projecting lug arranged to engage the guide or housing, said ratchet being also provided at its inner face

with recesses, and a vertically-movable locking-pin mounted in the guide or housing and engaging the recesses, substantially as described.

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

WILLIAM H. DONALDSON.

Witnesses:

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