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Patented June 20, 1899.

C. H. JOHANSEN.
REMOVABLE HEAD SECTION FOR BEDS.

(Application filed Jan. 27, 1899.)

(No Model.)

Fig. 1.

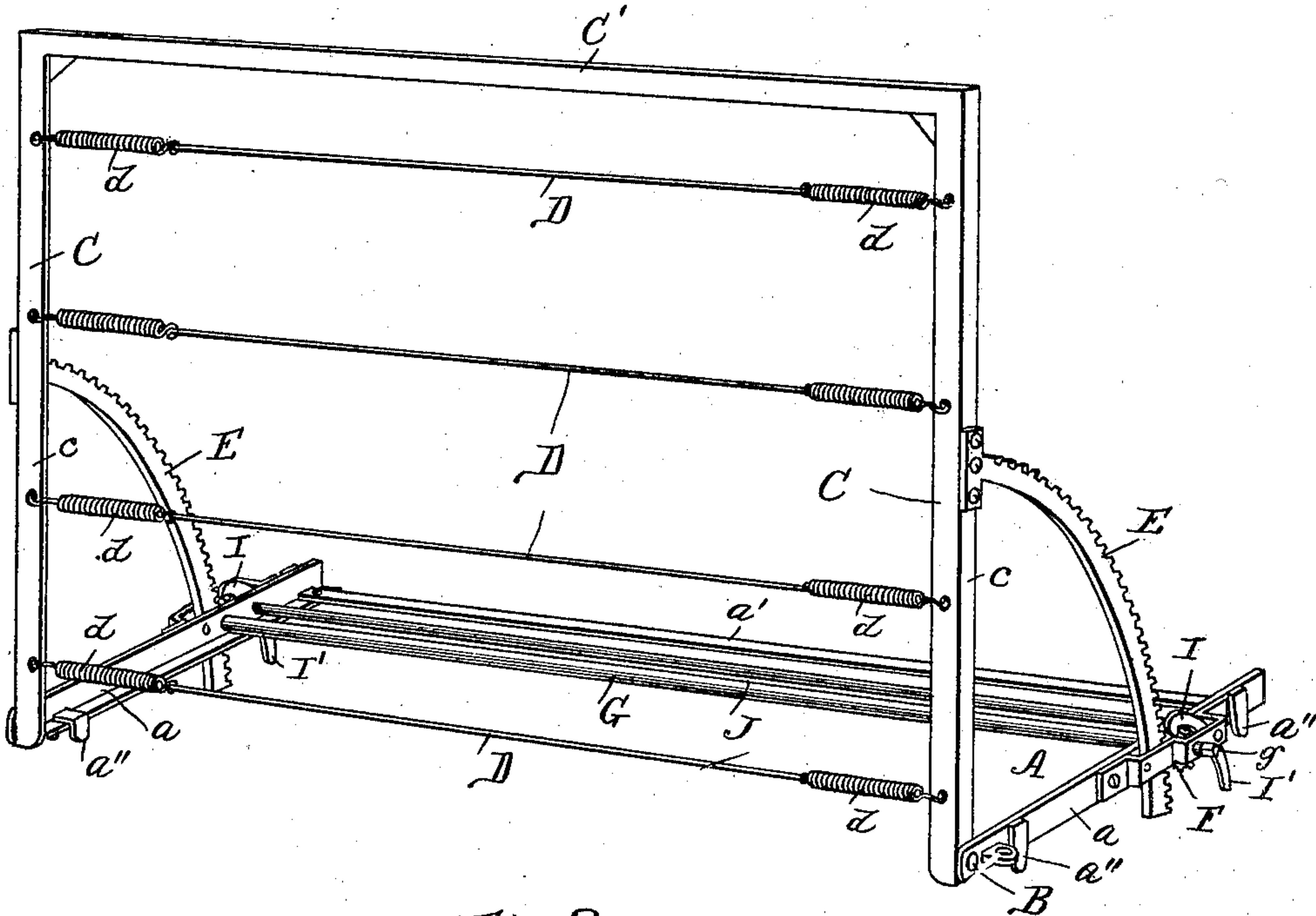


Fig. 2.

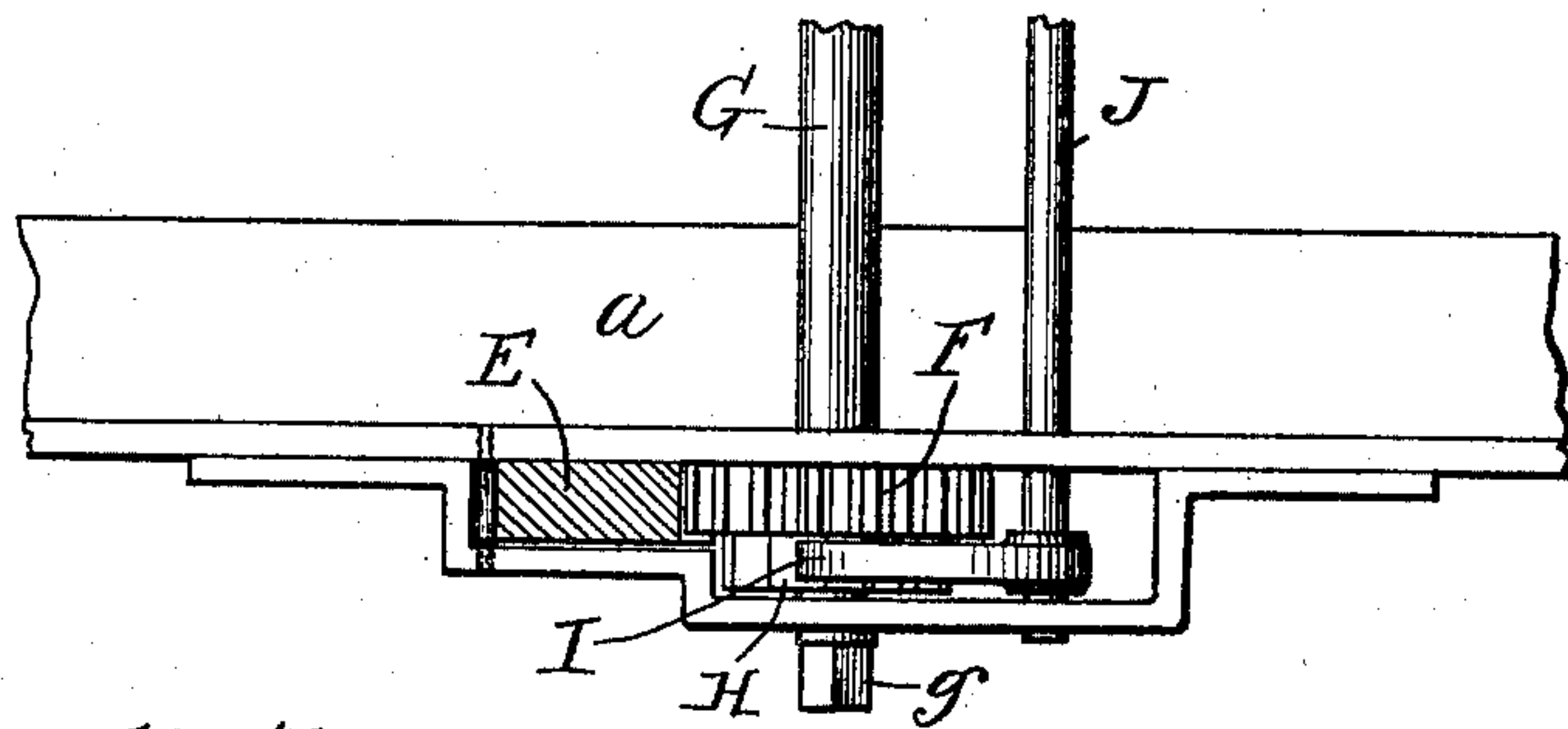
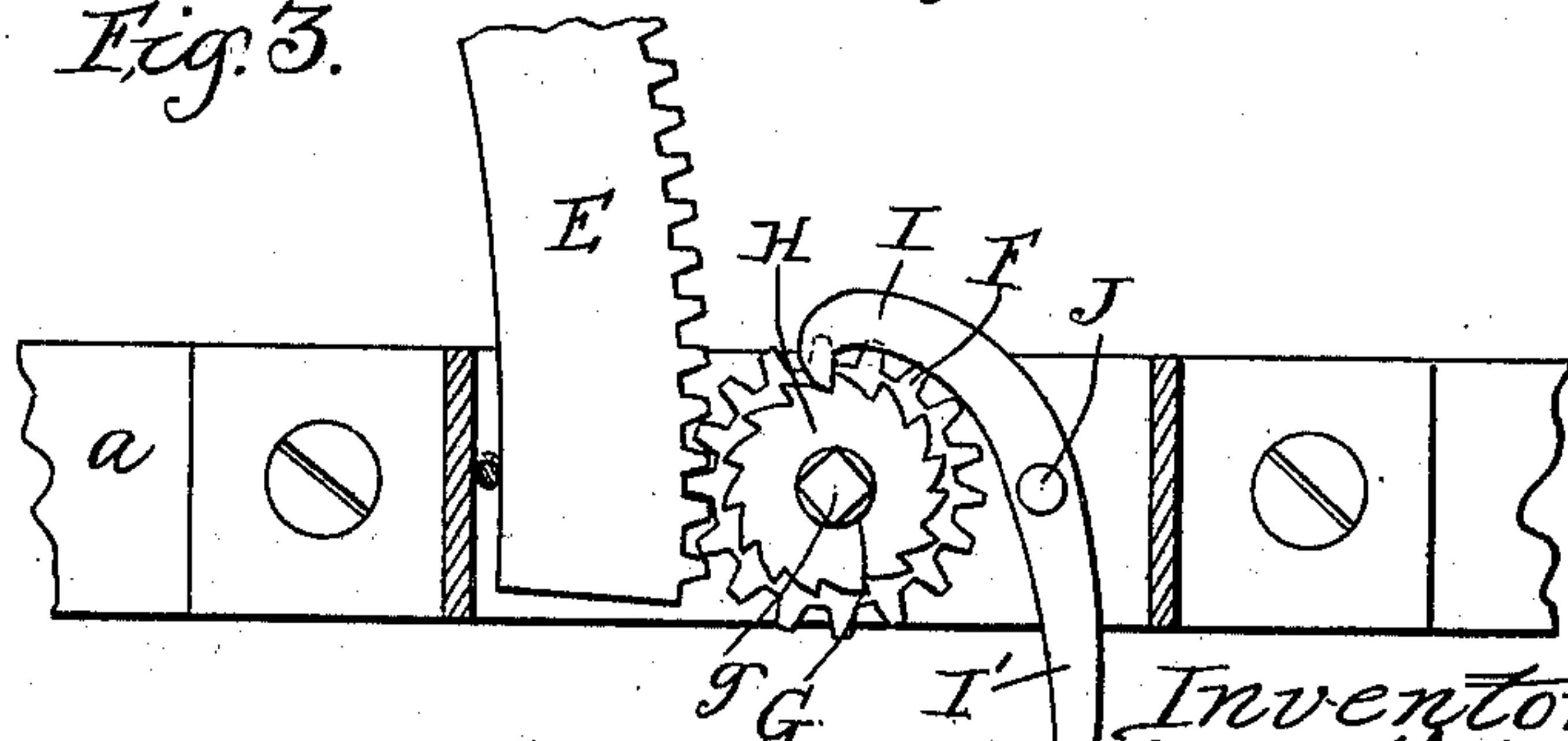


Fig. 3.



Witnesses.

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REMOVABLE HEAD-SECTION FOR BEDS.

SPECIFICATION forming part of Letters Patent No. 627,233, dated June 20, 1899.

Application filed January 27, 1899. Serial No. 703,607. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. JOHANSEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Removable Head-Sections for Beds, of which the following is a specification.

The present invention relates exclusively to that class of devices which are made and sold as separate articles of manufacture and are adapted to be put in place upon or removed from a bed or bedstead and when in place may be so manipulated as to raise the body of the patient and support it in an upright or more or less inclined position. I am aware that it is not new, broadly, to construct a bed with means whereby this result may be accomplished, and I am also aware that it is not new to provide a device intended to be made and sold as a separate article of manufacture having the accomplishment of this result as its object. It will be found, however, that in all those devices which are incorporated in and form a part of the bed structure the construction is complicated and more or less cumbersome and is open to the objection that it makes the bed as a whole expensive. The present invention does not belong to this class of devices at all, but belongs to that class of devices that are intended to be made and sold as a separate article of manufacture, so that they may be applied to or removed from any bed at will, the advantage of this being that a hospital may be equipped with enough of these devices to answer all demands at a very much lower figure than would be necessary to fully equip it with beds in which the bed structure is provided with means for accomplishing the desired ultimate object. A further advantage of the one over the other is that devices constructed in accordance with the present invention may be purchased and applied to the millions of beds already in use and when the need for it is past may be removed and stored away for future use.

The invention consists in the features of novelty that are hereinafter fully described.

In the accompanying drawings, which are made a part of this specification, Figure 1 is a perspective view of a removable head-section

for a bed embodying the invention. Fig. 2 is a plan view thereof on a larger scale, the rack-bar shown in the figure being in transverse section. Fig. 3 is a side elevation of a fragment thereof.

A represents a frame which is adapted to rest upon the bed or upon the side rails of a bedstead. This frame may be of any desired construction that will meet the requirements of the device. Preferably it consists of two parallel side pieces *a*, of angle-iron, connected at one end by a tie rod or plate *a'* and provided with downwardly-projecting lugs *a''*, that are adapted to engage the side rail of the bedstead and prevent the lateral displacement of the device. At their ends opposite the connection with the tie-rod *a'* the side rails *a* of the frame A are connected by a hinge B with a movable frame C. This frame C may be of any desired construction; but preferably it consists of two pieces *c*, of angle-iron, having their extremities remote from the hinges B connected by a third piece *c'*, of angle-iron, the pieces *c c'* forming three sides of a rectangle. The frame C is provided with means for supporting the head portion of a mattress, a pillow, or some other covering that will provide a comfortable support for the patient. Preferably I use for this purpose a number of wires D, the extremities of which are connected with the sides *c'* by means of heavy coiled springs *d*; but, if desired, any other suitable supporting device may be substituted for these wires and springs.

To the movable section C are secured two curved racks E, one at each side. Each of these racks has one of its ends rigidly secured to the side rail *c* of the frame C, and its toothed face is concentric with the hinge B. The two racks are engaged by pinions F, both non-rotatably mounted upon one and the same shaft G, the shaft being squared at its extremities, as shown at *g*, for the reception of a wrench or crank for turning it. The shaft carries also ratchets H, each of which is preferably integral with one of the pinions F.

I are pawls, one at each side of the device, adapted to engage by gravity with the ratchets H, and J is a rock-shaft, to which both of the pawls are non-rotatably secured, so that when the shaft is rocked the pawls are moved into or out of engagement with the ratchets. Each

of the pawls has an extension I', forming a handle for operating the rock-shaft, and thereby enabling the manipulation of both of the pawls from either side of the bed.

5 The pinion, the ratchet, and the pawl at each side of the device are inclosed within a housing, one side of which is formed by the side rail *a* of the frame A and the remainder of which is formed by a plate J, having its
10 ends offset and secured to the rail *a* by means of bolts, rivets, or other suitable devices.

In the preferred arrangement of the device shown and above described the frame A rests upon the side rails of the bed and the upper
15 end or head portion of the mattress rests upon the top of the frame C and the supporting devices D *d*. Normally the frame C is in a substantially horizontal position and rests upon the frame A. When, however, it is desired
20 to lift the patient to a sitting or more or less inclined position, the crank may be applied to either of the squared ends *g* of the shaft G, and by thus turning the shaft in the proper direction the frame C may be brought to a
25 more or less inclined position, the pawls I automatically engaging the ratchets H and holding the frame C in any position to which it may be adjusted. By the use of a crank of sufficient length the lifting of the patient is
30 made a comparatively easy matter, and it may be done so gradually that even patients suffering great pain from wounds and the like may be moved without seriously inconveniencing them. In like manner when it is
35 desired to return the patient to a lying position the pawls may be both simultaneously moved out of engagement with the respective ratchets by pressing upon one or the other of the handles I', and when out of position the
40 section C may be allowed to return to its horizontal or substantially horizontal position by simply rotating the shaft G in the reverse direction.

What I claim as new, and desire to secure
45 by Letters Patent, is—

1. As a new article of manufacture, a removable head-section for beds having, in combination, two frames hinged together and adapted to extend from side to side of the bed,
50 one of said frames being adapted to rest upon the side rails of the bed or other support and remain normally stationary, and the other being adapted to move about the hinge-joint, means carried by the movable frame for supporting the head portion of a mattress or the like, a pair of racks, one disposed at each side of the frame, each rigidly connected at one end to the movable frame, the toothed faces of the racks being concentric with the hinge-
55 joint, a pair of pinions engaging the racks, respectively, a shaft extending from side to side of the frame, carrying the pinions and being incapable of rotation relatively thereto, a pair of ratchets, one at each side of the frame, carried by the shaft and being incapable of rotation relatively thereto, a pair of pawls engaging the ratchets, a rock-shaft carrying the

pawls and extending from side to side of the frame, the shaft carrying the pinions being provided outside of the frame with means for
70 receiving a wrench for turning it, substantially as set forth.

2. As a new article of manufacture, a removable head-section for beds having, in combination, two frames hinged together and
75 adapted to extend from side to side of the bed, one of said frames being adapted to rest upon the side rails of the bed or other support and remain normally stationary, and the other being adapted to be moved about the
80 hinge-joint, means carried by the movable frame for supporting a mattress or the like, a pair of racks, one at each side of the frame, each rigidly connected at one end to the movable frame, the toothed faces of the racks being
85 concentric with the hinge-joint, a shaft journaled in and extending from side to side of the stationary frame, a pair of pinions, one at each side of the frame, carried by the shaft, and engaging the racks, said shaft being pro-
90 vided at its ends outside of the frame with means for receiving a wrench for turning it, a pair of ratchets, one at each side of the frame, carried by said shaft, a rock-shaft journaled in the frame and extending from
95 side to side thereof, a pair of pawls carried by the rock-shaft and adapted to engage the ratchets, and means at each side of the frame for operating the rock-shaft and thereby moving the pawls into or out of engagement with
100 the ratchets, substantially as set forth.

3. As a new article of manufacture, a removable head-section for beds having, in combination, two frames hinged together, and
105 adapted to extend from side to side of the bed, one of said frames being adapted to rest upon the side rails of the bed and remain normally stationary, and the other being adapted to be moved about the hinge-joint, means carried by the stationary frame for engaging the
110 side rails and preventing its accidental displacement, means carried by the movable frame for supporting the head-section of a mattress or the like, a pair of racks, one at each side of the frame, each having one end
115 rigidly secured to the movable frame, the toothed faces of the racks being concentric with the hinge-joint, a pair of pinions, one at each side of the frame, engaging the racks, a shaft extending from side to side of the frame
120 and carrying the pinions, a pair of ratchets, one at each side of the frame, carried by the shaft and being incapable of rotation relatively thereto, pawls engaging the ratchets, a rock-shaft extending from side to side of the
125 frame and carrying the pawls whereby they may be simultaneously operated from either side of the frame, and a pair of plates, one at each side of the frame, said plates forming with the adjacent sides of the stationary
130 frame housings inclosing the pinions, ratchets and pawls, substantially as set forth.

4. As a new article of manufacture, a removable head-section for beds, having, in com-

10 bination, the frame A adapted to rest upon the bed or other support, the frame C hinged to the frame A and adapted to move about the hinge, wires D, coiled springs *d* connecting the extremities of the wires to the sides *c* of the frame C, racks E, one at each side, each having one end rigidly secured to one of the sides *c* of the frame C, the toothed faces of the racks being concentric with the hinge of the movable frame, the shaft G journaled in the sides of the stationary frame A, and having at its extremities means for receiving a crank or wrench for turning it, pinions F carried by the shaft G, ratchets H carried by the

shaft G, a rock-shaft J journaled in the stationary frame A, pawls I carried by the rock-shaft and adapted to engage the ratchets H, said pawls having extensions I' serving as handles for operating the rock-shaft, and the plate J forming with the adjacent side of the stationary frame A a housing inclosing the pinion F, ratchet H and pawl I, substantially as set forth. 15 20

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Witnesses:

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