

No. 795,309.

PATENTED JULY 25, 1905.

D. R. ROCHE.
FOLDING BED.
APPLICATION FILED MAR. 16, 1903.

Fig. 1.

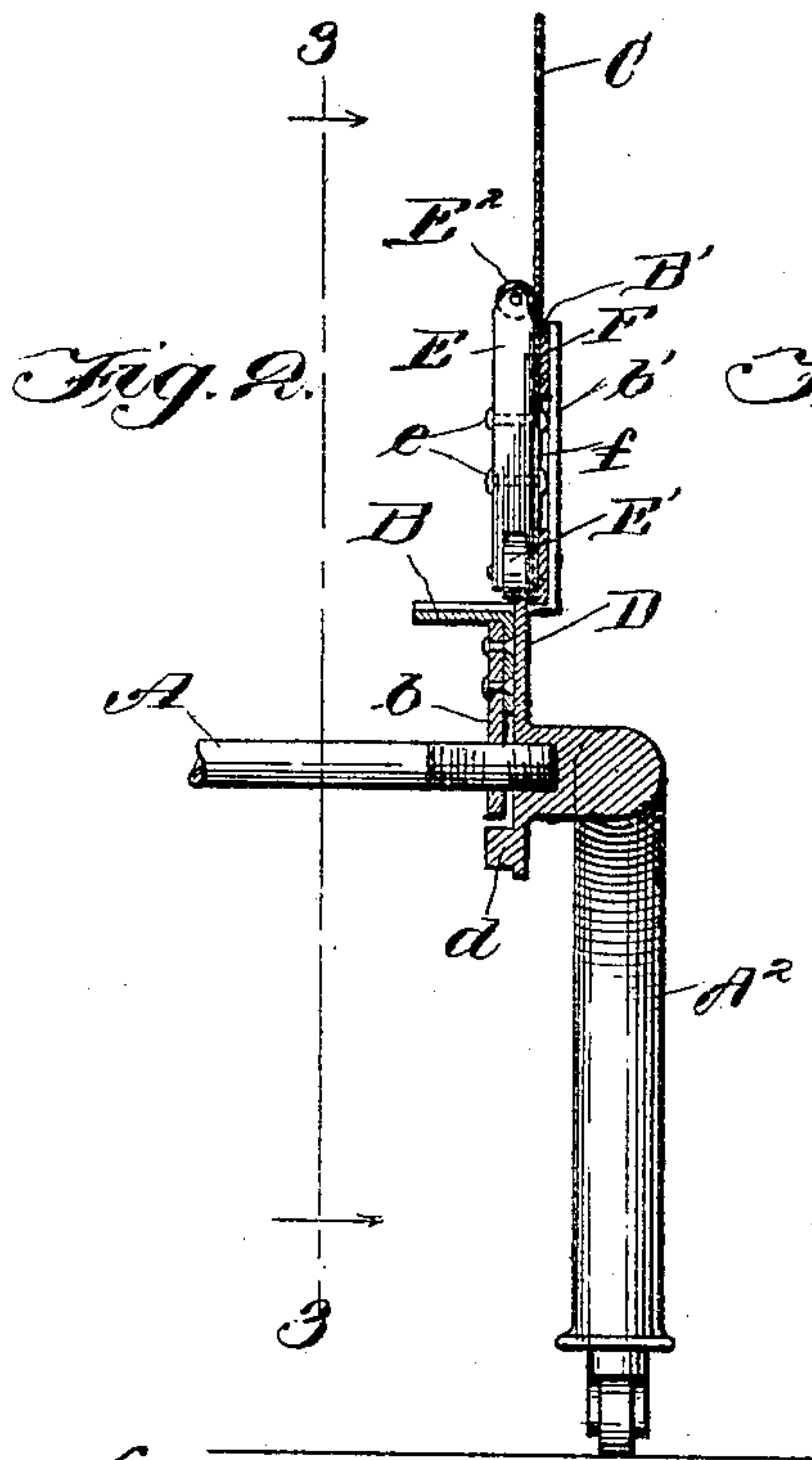
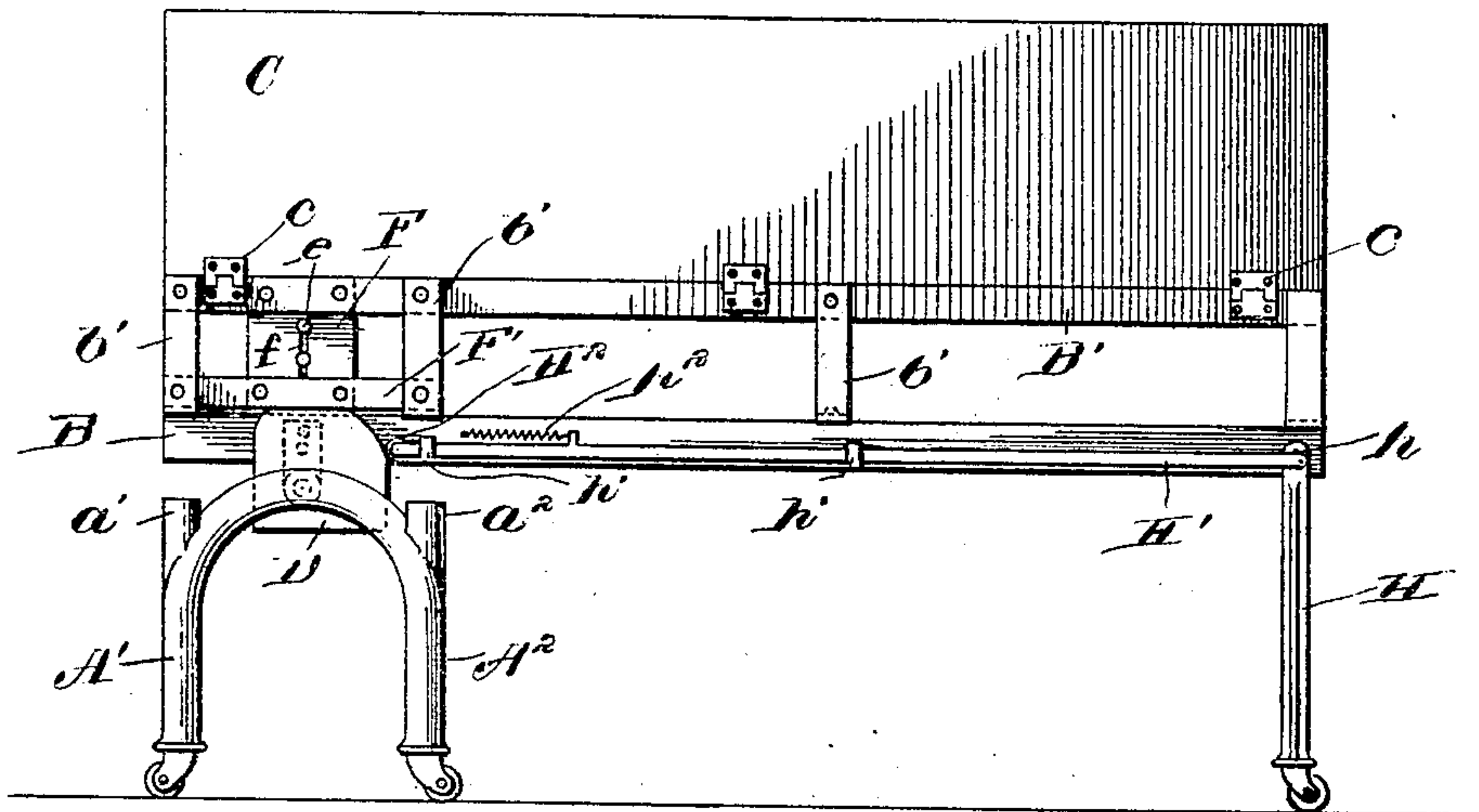
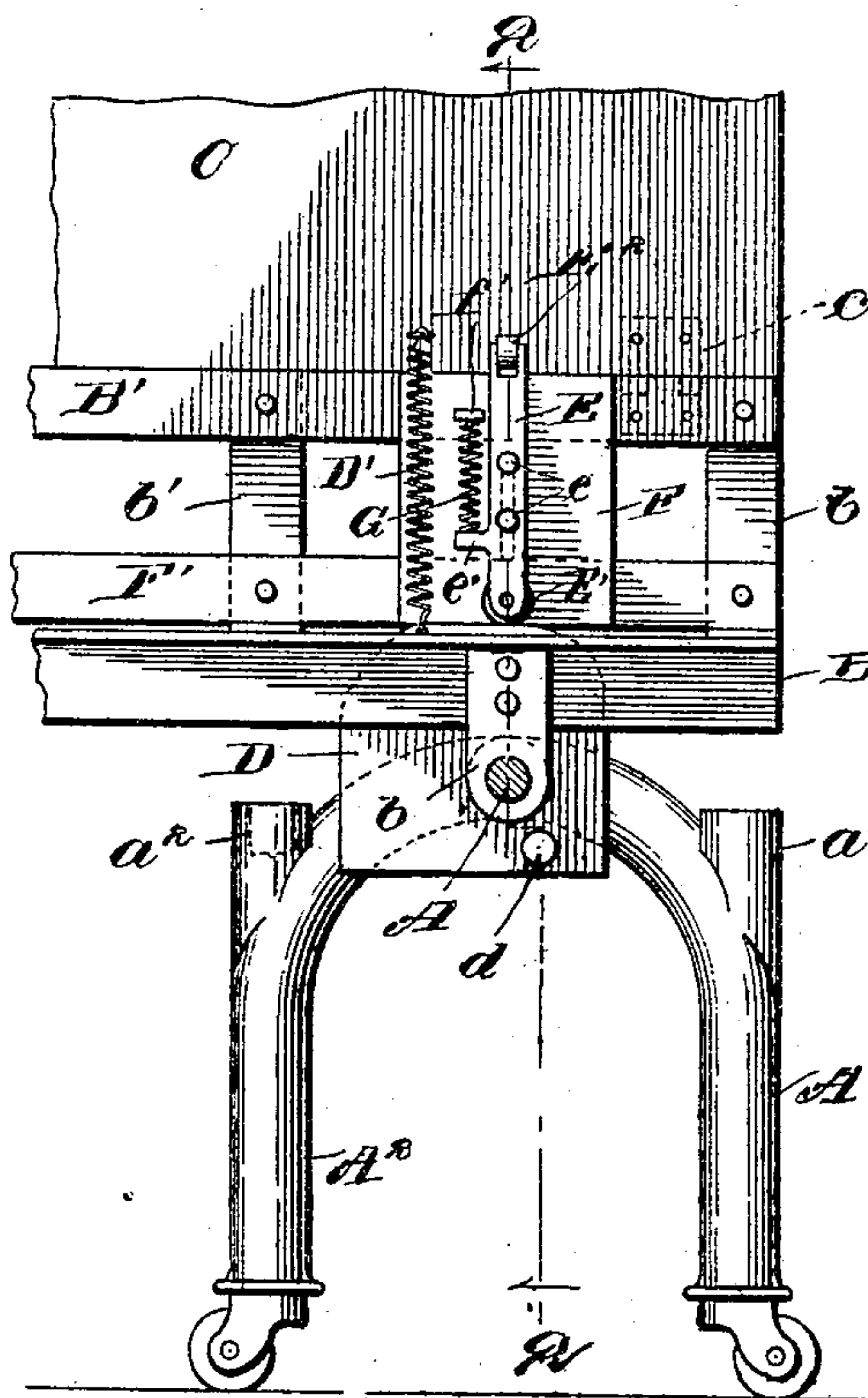


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

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FOLDING BED.

No. 795,309.

Specification of Letters Patent.

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Application filed March 16, 1903. Serial No. 147,955.

To all whom it may concern:

Be it known that I, DAVID R. ROCHE, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Folding Beds; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates generally to beds, and more particularly to folding beds.

It is necessary that folding beds should be provided with means for retaining the bed-clothing in proper position upon the bed-bottom when the bed is in its folded condition. It is also desirable that the portion of the bed which swings downwardly should be provided with legs for supporting the same which may be swung inwardly when the bed is not in use, so as to project only beyond the portion of the bed which they support when the same is let out.

The object of my invention is to provide a folding bed with means for holding the bed-clothing in proper position when the bed is closed, automatically actuated by the closing and opening of the bed, and also with means for automatically swinging the legs outwardly beneath the outer portion of the bed when the bed is swung downwardly and automatically withdrawing the legs within the confines of the bed when the latter is out of use.

A further object of my invention is to provide a folding bed which will be simple in construction, comparatively inexpensive in manufacture, and durable in use and which may be easily let down for use and easily folded into a compact space when not in use.

My invention, generally described, consists in a bed-bottom pivotally supported near one side thereof at a suitable height, swinging legs to support the outer edge thereof, clamping mechanism for engaging the bedclothing at the head and foot of the bed, and means for automatically actuating said clamping mechanism when the bed is swung upwardly and automatically releasing said clamping mechanism when the bed is swung downwardly into position for use.

My invention will be more fully described hereinafter with reference to the accompanying drawings, in which the same is illustrated

as embodied in a convenient and practical form, and in which—

Figure 1 is an end elevational view; Fig. 2, a sectional view on line 2 2, Fig. 3; and Fig. 3, a sectional view on line 3 3, Fig. 2.

Similar reference characters are used in the several figures of the drawings to designate similar parts.

Reference-letters A' and A² indicate a pair of legs which are united at their upper ends and support one end *a* of a rod A, the opposite end of the latter being supported by a similar pair of legs. The rod A serves as a support for one side of the bed and preferably extends beneath the same parallel with and a short distance from one side thereof.

B indicates one of the end rails of the rigid frame for supporting the bed-bottom, which may conveniently be made of angle-iron. A bracket *b* is rigidly secured at its upper end to the inner surface of the vertical portion of the angle-iron and loosely surrounds at its lower end the rod A at a point adjacent to the pair of legs A' and A². It will be of course understood that the bed is provided at its opposite end with a similar rail formed of angle-iron and similarly supported above the rod A.

B' indicates a strip which is supported above and parallel with the rail B by means of connecting-braces *b'*.

C indicates a guard which may conveniently be made in the form of a plate, as shown in the drawings, and which is pivotally secured at its lower edge by means of hinges *c* to the strip B'. A spring D' is secured at one end to the inner surface of the guard C and at its other end to the horizontal portion of the rail B, thereby tending to swing the guard about its hinges *c* inwardly—that is, to a position above the bedclothing.

In order that the guard C may be swung upwardly against the tension of the spring D' when the bed is let down into position for use, a sliding bar E is provided, the upper end of which reciprocates across the line of pivotal connection between the guard C and the strip B', thereby swinging the guard upwardly or permitting the same to be swung downwardly by the spring D'. The sliding bar E is actuated automatically when the bed is folded up out of use to permit the guard under tension of the spring D' to engage the bedclothing and clamp the same tightly against the bed-bottom and is actuated to swing the guard out of contact with the bed-

clothing when the bed is let down for use. I have shown such means for automatically actuating the sliding bar in the form of a cam-plate D, which may be formed integrally with the connecting portion intermediate of the legs A' and A², as shown in Fig. 2. A guide-roller E' is carried by the lower end of the bar E and engages the edge of the cam-plate D. The upper end of the bar E is provided with a second guide-roller E², adapted to engage the adjacent surface of the guard C when the bed is let down. Any suitable means may be provided for supporting the bar E—such, for instance, as bolts e, extending through a vertical slot f, formed in a plate F, secured at its upper end to the strip B' and at its lower end to a short strip F'. The strip F' is supported at its opposite ends by means of devices fastening the same to the braces b', which unite the strip B' to the rail B.

A coil-spring G is interposed between a lug f', formed on the plate F, and a lug e', projecting laterally from the sliding bar E. The tension of such spring tends to retain the guide-roller E' at the lower end of the bar E in contact with the cam D and to slide the bar away from the guard C when the bed is folded up, thereby permitting the spring D' to swing the guard into contact with the bedding.

The side of the bed opposite to that which is supported above the rod A is preferably provided with a folding leg H at each end which automatically swings into the position shown in Fig. 1 when the bed is let down by means of the rod H', pivotally secured thereto near its upper end and engaging the cam D. The edge of the rod H' which engages the cam is preferably provided with an anti-friction-roller H². Suitable guiding devices for the rod H', such as eyes h', are provided upon the rail B. A spring h² retains the anti-friction-roller in contact with the cam and swings the leg H inwardly into a position adjacent to the rail B when the bed is folded up.

A stop in the form of a lug d projects laterally from the cam-plate D and is engaged by the lower edge of the rail B when the bed is folded up, thereby limiting the upward movement of the bed.

a' and a² indicate metal projections, into which may be secured, if desired, ornamental extensions of the legs A' and A².

Each end of the bed is provided with the mechanism disclosed in the drawings, and as the construction and operation thereof is the same at both ends of the bed it is necessary to describe only the mechanism at one end thereof.

The operation of my invention is as follows: When the bed is swung downwardly into the position for use, (indicated in Fig. 1,) the cam D swings the leg H outwardly through engagement with the anti-friction-roller on the end of the rod H'. The relative movement between the bed and the cam D, which is rig-

idly supported by the legs, forces the bar E upwardly, so that its upper end passes beyond the line of pivotal connection between the strip B' and the guard C, thereby, through the engagement of the roller E² with the guard, swinging the latter out of contact with the bedclothing into a vertical position. When the bed is no longer in use, the outer edge thereof is lifted upwardly, thereby swinging the same around the rod A until the stop d is engaged. The spring h² swings the leg H into a position close to the rail B, such movement of the rod H' being permitted by the curvature of the cam D. The curvature of the cam also permits the spring G to reciprocate the sliding bar E to such a position that the upper end thereof no longer projects across the pivotal line between the guard C and the strip B', thereby permitting the spring D' to fold the guard into position to clamp the bedding against the bed-bottom.

From the foregoing description it will be observed that I have invented an improved folding bed in which the bedclothing will be kept in position upon the bed-bottom when the latter is folded up out of use by automatic clamping mechanism, such mechanism being automatically removed from contact with the bedclothing when the latter is lowered into position for use. It will be further observed that I have provided means operating simultaneously with the clamping mechanism for swinging the supporting-leg into and out of position to support the bed-bottom.

While I have described more or less precisely the details of construction, I do not wish to be understood as limiting myself thereto, as I contemplate changes in form, the proportion of parts, and the substitution of equivalents as circumstances may suggest or render expedient without departing from the spirit of my invention.

Having now fully described my invention, what I claim as new and desire to secure by Letters Patent, is—

1. In a folding bed, the combination with a bed-bottom, of a support upon which the bed-bottom is pivotally mounted, a guard extending across and pivotally secured to an end of the bed-bottom, a spring tending to swing said guard into contact with the bedding and thereby retain the same in position upon the bed-bottom, and means actuated by the relative movement between said bed-bottom and its support when the bed is swung into its open position for swinging said guard against the tension of said spring out of contact with the bedding.

2. In a folding bed, the combination with a bed-bottom, of a support upon which the bed-bottom is pivotally mounted, a guard extending across and pivotally secured to an end of the bed-bottom, a spring tending to swing said guard into contact with the bedding and thereby retain the same in position upon the bed-

bottom, a sliding bar guided upon the end of the bed, a cam secured to said support and engaging said bar to force the same into contact with said guard when the bed is swung into an open position and thereby swing said guard out of contact with the bedding, and means for sliding said bar in an opposite direction when the bed is closed thereby permitting said spring to swing said guard into contact with the bedding and retain the same upon the bed-bottom.

3. In a folding bed, the combination with a vertically-swinging bed-bottom, of a support upon which said bed-bottom is pivotally mounted adjacent to one side thereof, a cam secured to said support, clamping mechanism for retaining the bedding upon the bed-bottom when the latter is in its closed position, means interposed between said cam and said clamping mechanism for actuating the latter, a pivoted leg for supporting the side of said bed-bottom opposite to said support, and means inter-

posed between said leg and said cam for swinging said leg when the bed-bottom is swung into its open or closed positions.

4. In a folding bed, the combination with a vertically-swinging bed-bottom having a rigid supporting-frame, of a support upon which said bed-bottom is mounted extending beneath the same near one side thereof, clamping mechanism for retaining the bedding upon the bed-bottom, a swinging leg for supporting the side of a bed-bottom opposite to said support, and means simultaneously operated by the relative movement between said bed-bottom and its support when the bed is swung into its closed or open positions for actuating said clamping mechanism and said swinging leg.

In testimony whereof I sign this specification in the presence of two witnesses.

DAVID R. ROCHE.

Witnesses:

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