

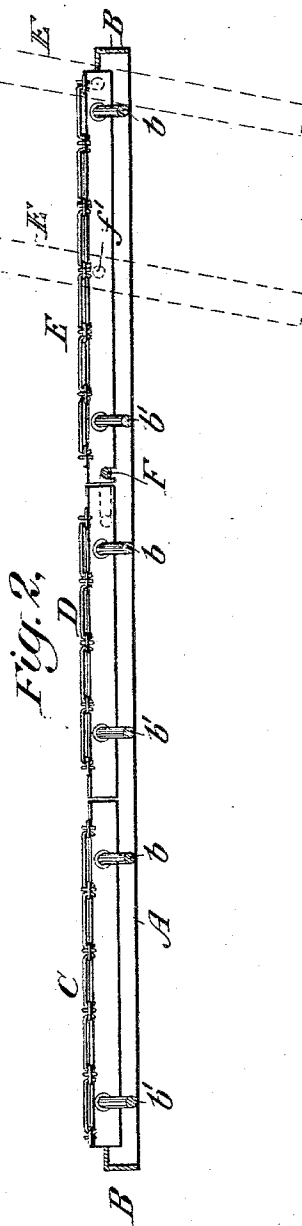
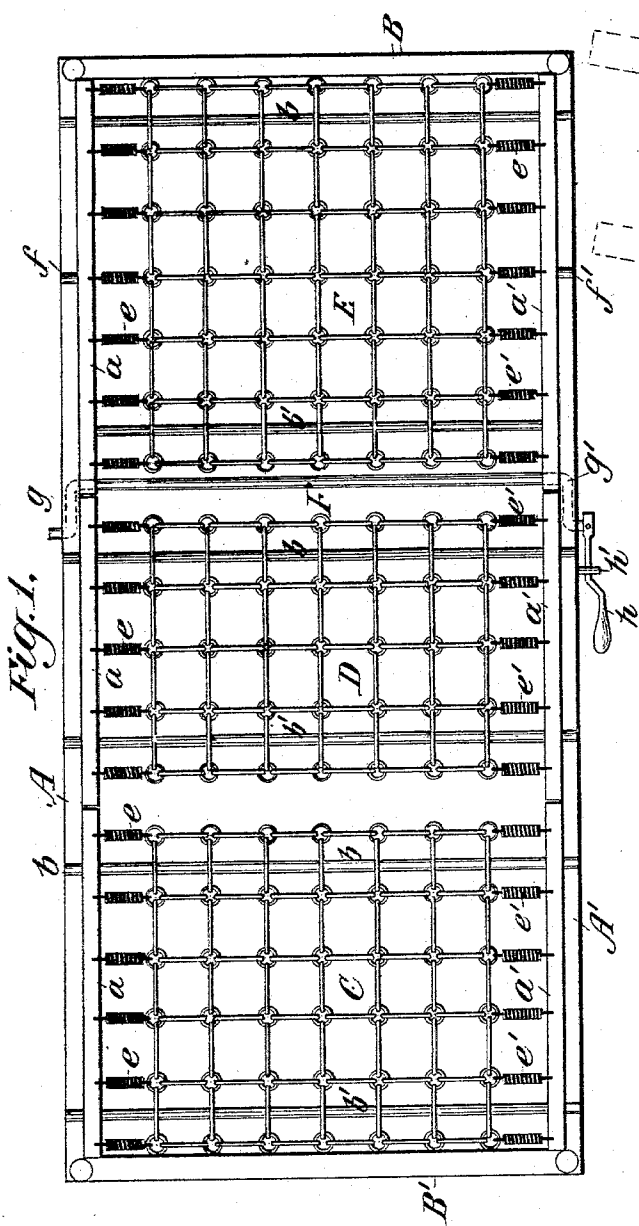
(No Model.)

2 Sheets—Sheet 1.

A. McKNIGHT.  
BED BOTTOM.

No. 565,018.

Patented Aug. 4, 1896.



WITNESSES:

C. H. Kayman  
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(No Model.)

2 Sheets—Sheet 2.

A. McKNIGHT.  
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Fig. 3.



Fig. 4.

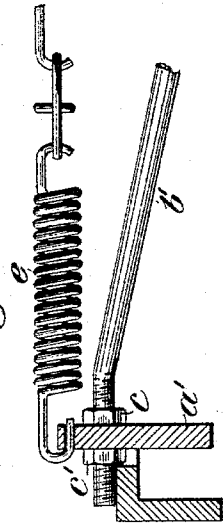


Fig. 5.

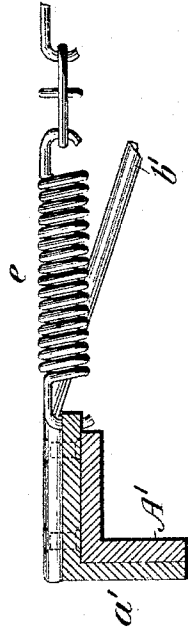
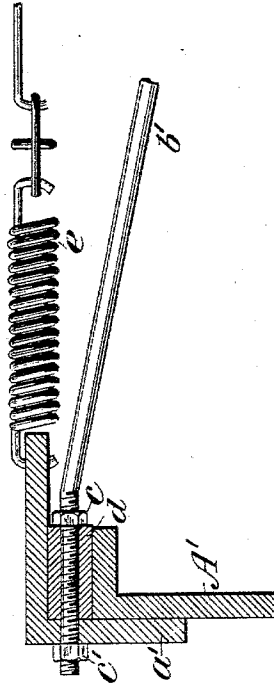


Fig. 6.



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# UNITED STATES PATENT OFFICE.

ALEXANDER MCKNIGHT, OF BROOKLYN, NEW YORK.

## BED-BOTTOM.

SPECIFICATION forming part of Letters Patent No. 565,018, dated August 4, 1896.

Application filed October 29, 1895. Serial No. 567,272. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER MCKNIGHT, a citizen of the United States, and a resident of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Bed-Bottoms, of which the following is a specification.

This invention relates to beds and more especially to bed-bottoms, and it has for its object to improve the constructions in various ways, as will hereinafter appear.

The invention consists of the construction and arrangement of parts hereinafter set forth.

In the drawings, Figure 1 is a plan view of a bed-bottom supported upon a bed-frame and embodying my invention. Fig. 2 is a central longitudinal section thereof. Fig. 3 is a central transverse section. Figs. 4, 5, and 6 represent in three modifications various ways of connecting the side and end rails of the bed-bottom and supporting the same on the side rails of a bed-frame.

The bed-frame is composed of the side rails A A' and the end rails B B'.

The bed-bottom comprises, preferably, a plurality of separate and independent sections. In Figs. 1 and 2 three sections are shown—C, D, and E. The bed-bottom or each of its sections, in case there are a plurality, comprises side rails *a a'* and end rails *b b'*, united together to form a rigid frame and a suitable bed-bottom fabric. The end rails of sections C and D are secured to their side rails so as to project beyond the side rails A A' of the bed-frame and support the sections, and the end rails are preferably depressed, as shown, so as to clear the bed-bottom fabric when depressed. There are various ways of connecting the side and end rails of the bed-bottom, as shown in the drawings.

In Figs. 1, 2, and 3 the side rails are made of angle-iron and come inside of and close to the side rails A A' of the bed-frame, the ends of the end rails being threaded and passing through apertures in the side rails and held in place by nuts *c* on the inner side of the side rails. If desired, nuts may also be screwed on the end rails against the outside of the side rails. By this arrangement the side rails may be adjusted transversely

to give the desired tension to the bed-bottom fabric.

In Fig. 4 the side rail is a flat bar of iron, and the side and end rails of the bed-bottom are adjustably connected in the same way as shown in Fig. 3, except that there is employed an outer nut *c'*, which serves to prevent the side rails from tilting under the tension of the bed-bottom fabric.

In Fig. 5 the side rail is an angle-iron which fits over the corresponding side rail of the bed-frame. The end rails in this case have their ends riveted upon the side rails of the bed-bottom.

In Fig. 6, which illustrates the preferred manner of connecting the side and end rails of the bed-bottom, the side rails are angle-irons and the threaded ends of the end rails pass through apertures in the side rails and are held adjustably in place by nuts *c c'*, spacing-pieces *d* being sleeved on the end rails between the nuts *c* and the side rails.

The bed-bottom fabric is flexible, and may be composed of any suitable material, such as canvas, woven wire, netting, &c., although a fabric composed of connected links, as shown in Fig. 1, is preferred. The fabric is provided with opposite transversely-yielding springs attached to the side rails. There are no springs connected to the end rails. This causes the fabric to stretch transversely only when pressure is put upon it, and when the body of a person reclines upon the fabric the various pairs of opposite springs may yield to a different extent, so that the fabric fits the different curves or inequalities of the recumbent body and thereby directly supports it at all contacting points and greatly increases the comfort of the bed. When the bed-bottom fabric is composed of connected links, it is best to employ opposite coiled springs *e e'*.

Heretofore bed-bottom fabrics have usually been connected to the end rails by springs so that the fabric yields lengthwise or from head to foot. With this arrangement it will be seen that only the most prominent parts of the body reclining on the fabric come in contact with and are directly supported by the fabric. A fabric supported in this way is lacking in comfort and will in time occasion bed-sores. It has also been proposed to

employ springs for the fabric at the end and also at the sides, but in these cases the same objections are present as when only end springs are used, but perhaps to a less extent, the end springs operating to nullify to a great extent the function of the side springs. It is only when transversely-yielding springs alone are employed, as in this invention, that the fabric will accommodate itself to the various curves and inequalities of the reclining body, so as to positively support it at all contacting points.

In its best form the bed-bottom is made in two or more separate and independent sections, making it easier to handle, and one of these sections, generally the foot-section, is so arranged and constructed that it may be easily shifted on the supporting bed-frame, so that the occupant can sit up in bed and rest his feet upon the floor. The construction whereby this is accomplished is embodied in the foot-section E. (Shown in Figs. 1 and 2.) This section E has one of its end rails, as *b*, projecting over the rails *A A'*, as in the other sections, but the end rail *b'* does not so project. The section is pivotally supported at points between its ends on the bed-frame in any suitable manner, as by trunnions or pivots *f f'*, secured to the rails *a a'* and resting on the rails *A A'*. These trunnions may have friction-rollers, if desired. The inner end of the section is supported by suitable means in such a way that when desired the support for the inner end of the section may be withdrawn and the section tilted on the trunnions *f f'* into an upright position and slid or rolled back on the rails *A A'* toward the foot of the bed, leaving the space formerly occupied by the section open for the feet of the occupant of the bed, who thus may be able to sit up with comfort and occupy a commode underneath the bed or a bed-pan and without inconvenience and discomfort.

The means shown in the drawings for supporting the inner end of the section E comprise a bar *F*, having its ends bent to form levers or cranks *g g'* and passing through the rails *A A'*. One end of the bar is provided with a handle *h*, pivoted thereto and adapted to engage in its normal position a pin *h'* on the bed-frame. When the handle is caught under the pin, the cams or cranks *g g'* come under the side rails of the section and firmly support it in a horizontal position. When the handle is disengaged from the pin *h'*, the bar *F* drops down, so that the cams or cranks *g g'* are withdrawn and the section is free to turn to an upright position on its trunnions *f f'*. By this arrangement the occupant of the bed himself may release the section E. The means for supporting the inner end of the section E could of course be changed in various ways, and I do not wish to be restricted to the particular means shown. Moreover, the cams or cranks *g g'* could be located at the foot end of the section E and the rails *b b'* reversed, so that the foot end

would tilt downward instead of upward, as shown.

While I have shown and described what I now consider to be the best embodiment of the several features of the invention, of course various changes could be made by any one skilled in the art without departing from the spirit of the invention.

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

1. A bed-bottom comprising side rails, end rails depressed along their middle portions and having their ends secured to the side rails to form a rigid frame, the end rails arranged to project beyond the side rails to form supports for the bed-bottom on a bed-frame, and a suitable bed-bottom fabric secured to and supported by the side rails, and free from supporting connection with the end rails substantially as set forth.

2. A bed-bottom consisting of a plurality of independent sections each comprising two side rails, end rails depressed along their middle portions and having their ends secured to the side rails to form a rigid frame, the end rails arranged to project beyond the side rails to form supports for the bed-bottom on a bed-frame, and a suitable bed-bottom fabric secured to the side rails, substantially as set forth.

3. A bed-bottom comprising side rails and end rails united to form a rigid frame, and a bed-bottom fabric having transversely-yielding springs said fabric connected with and supported by the side rails of the bed-bottom and free from supporting connection with the end rails whereby the bed-bottom fabric when under pressure expands transversely only and without restraint at its ends and thereby readily adapts itself to the longitudinal curves or inequalities of the recumbent body, substantially as set forth.

4. A bed-bottom comprising side rails and end rails united to form a rigid frame, and a bed-bottom fabric formed of connected links having transversely-yielding springs connected with and supported by the side rails of the bed-bottom and free from supporting connection with the end rails whereby the bed-bottom fabric when under pressure, expands transversely only and without restraint at its ends and thereby readily adapts itself to the longitudinal curves or inequalities of the recumbent body, substantially as set forth.

5. In a bed, the combination of a bed-bottom comprising a plurality of separate and independent sections, one of said sections pivotally supported at points between its ends by the side rails of the bed so that said section may be tilted from a horizontal to an upright position, whereby an opening is made in the bed-bottom through which the occupant may pass his feet substantially as set forth.

6. A bed-bottom comprising a plurality of separate and independent sections each consisting of side and end rails and a suitable

bed-bottom fabric, one of said sections being provided at points between its ends with pivotal supports adapted to rest and travel upon the side rails of a bed whereby said section 5 may be turned from a horizontal to an upright position and moved along the side rails of a bed, so as to make an opening in the bed-bottom through which the occupant may pass his feet substantially as set forth.

10 7. In a bed, the combination of a bed-bottom comprising a plurality of separate and independent sections, one of said sections pivotally supported at points between its ends by the side rails of the bed so that said section 15 may be tilted from a horizontal to an upright position thereby making an opening in the bed-bottom through which the occupant may pass his feet, and means for securely holding said section in a horizontal position, 20 said means comprising a lever or crank adapted to be thrown into and out of engagement with the end of the said section, substantially as set forth.

25 8. In a bed the combination of a bed-bottom consisting of a plurality of separate and independent sections, one of said sections comprising side and end rails and a suitable bed-bottom fabric, one of said end rails projecting beyond the side rails of the bed-frame 30 to support one end of the section, said section being pivotally supported by the side

rails of the bed so as to travel thereon, and a bar supported on the side rails of the bed and having cams or cranks adapted to support the other end of said section, substantially as set forth. 35

9. A bed-bottom comprising side rails and end rails connected together to form a rigid frame, the end rails having threaded ends passing through and projecting beyond the 40 side rails to form supports for the bed-bottom, and nuts for adjustably securing the end rails in place, substantially as set forth.

10. A bed-bottom comprising end and side rails united to form a rigid frame, the end 45 rails being depressed along their middle portions and having threaded ends passing through and projecting beyond the side rails to form supports therefor, nuts for adjustably securing the end rails in place and a bed-bot- 50 tom fabric made of connected links and having transverse coiled springs at its sides only connected to the side rails of the bed, substantially as set forth.

In testimony whereof I have signed my 55 name to this specification in the presence of two subscribing witnesses.

ALEXANDER MCKNIGHT.

Witnesses:

NICHOLAS M. GOODLETT, Jr.,  
EDWIN SEGER.