

961,445.

W. W. HOPKINS.
DAVENPORT.
APPLICATION FILED OCT. 19, 1909.

Patented June 14, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

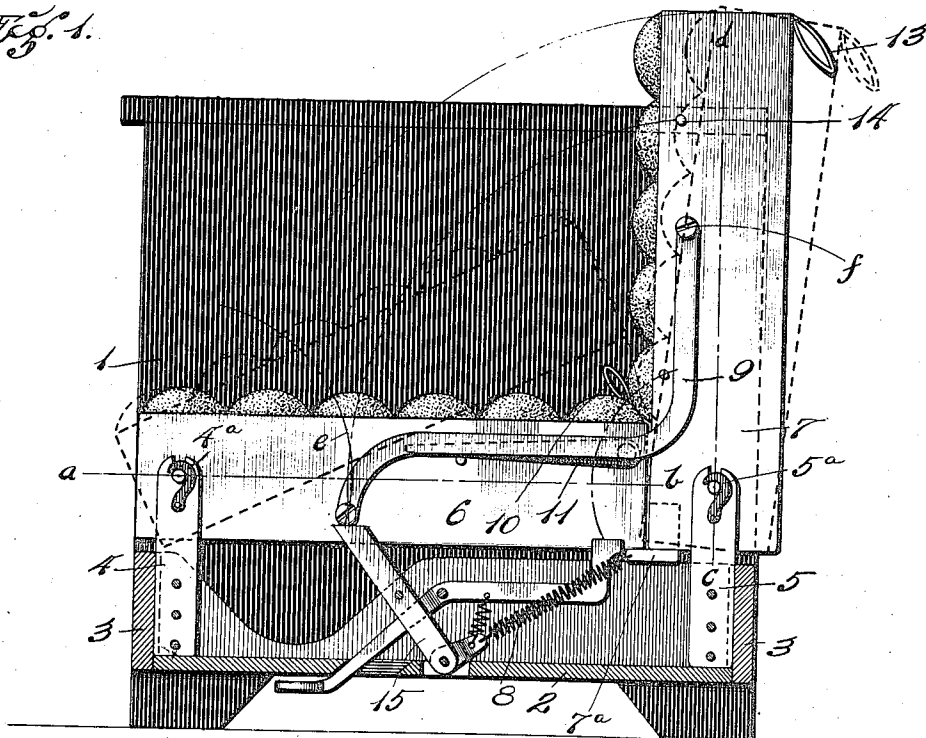
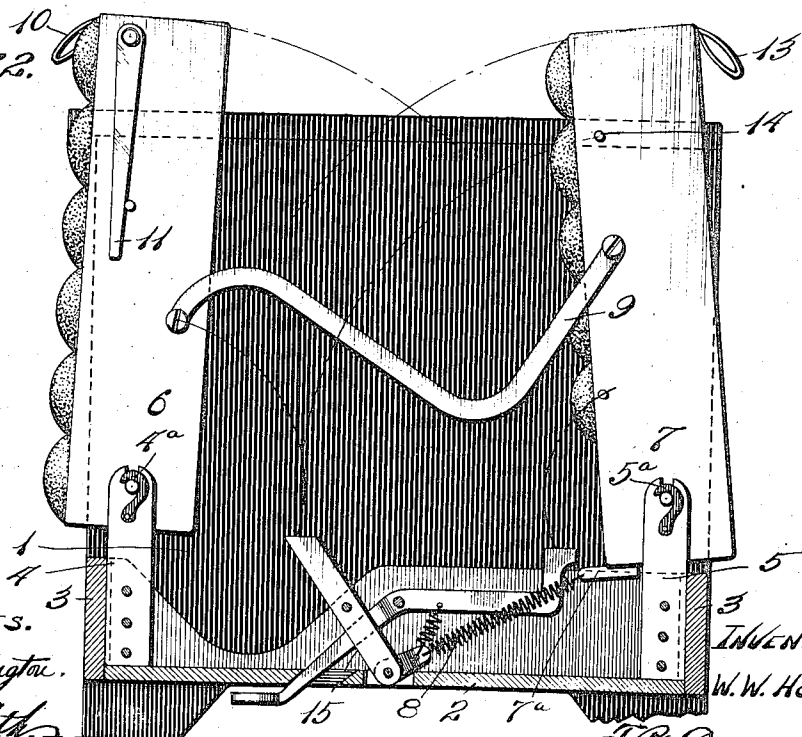


Fig. 2.



WITNESSES.

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2 SHEETS—SHEET 2.

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Fig. 3.

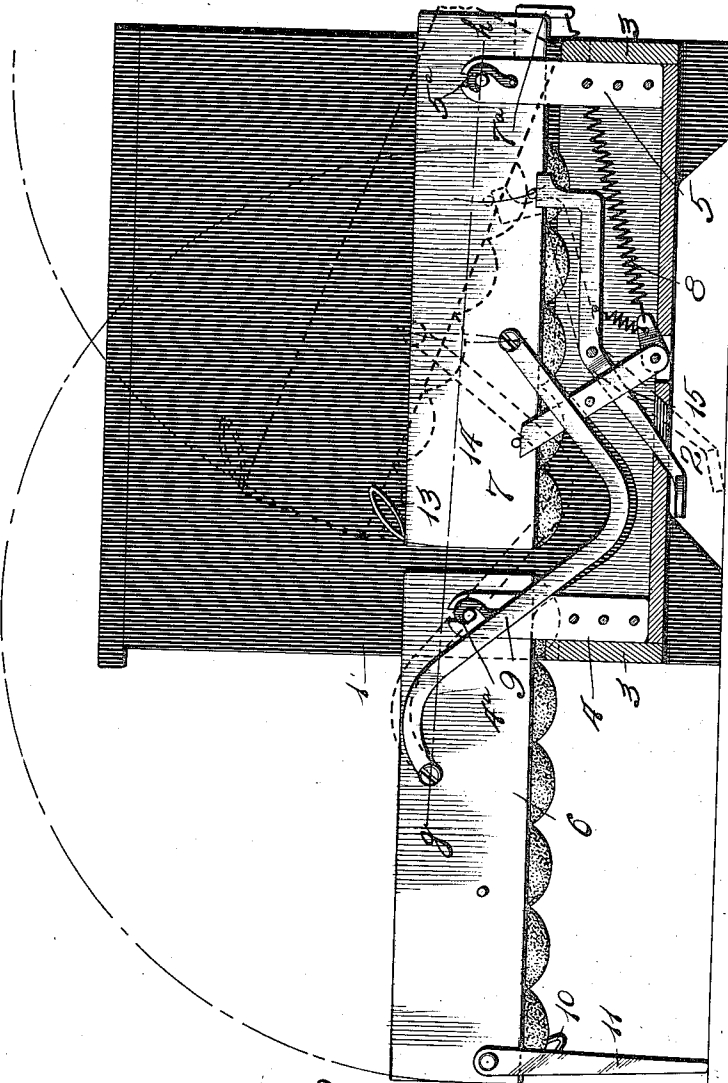
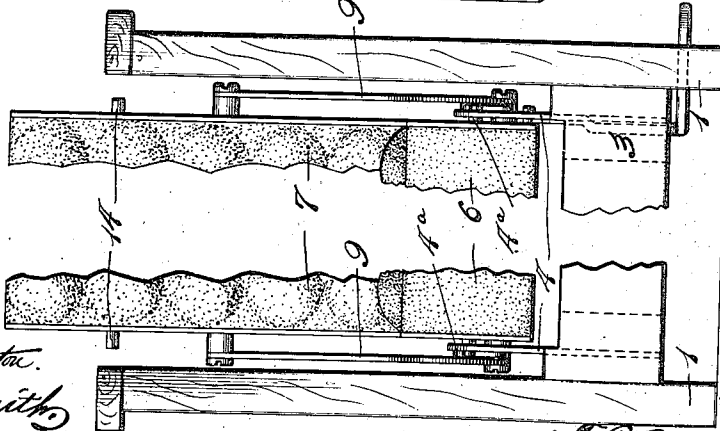


Fig. 4.



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UNITED STATES PATENT OFFICE.

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DAVENPORT.

961,445.

Specification of Letters Patent. Patented June 14, 1910.

Application filed October 19, 1909. Serial No. 523,509.

To all whom it may concern:

Be it known that I, WILLIAM W. HOPKINS, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Davenport, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevational view of my improved davenport, the near side wall being removed to more clearly show the construction of the moving parts. Fig. 2 is a similar view showing the parts in changed positions. Fig. 3 is a similar view showing the parts in still another position. Fig. 4 is a front elevational view showing the parts in the position illustrated in Fig. 1, the middle portion of the davenport being broken away.

This invention relates to a new and useful improvement in folding davenports of that character wherein the seat portion can be folded over and the back portion folded down, so that a bed may be formed, said portions being positively connected together, and constituting what is known as a "one movement" reversible davenport. The under side of the seat portion and the rear side of the back portion are provided with mattresses, such for instance, as woven wire mattresses, so that when the parts are moved into position to form a bed, the mattresses will be uppermost. The opposite faces of the seat and back portions are upholstered in the usual way, so that when the parts are in the position shown in Fig. 1, and the device used as a davenport, the upholstered portions will be in use.

In the drawing there are two end walls 1, connected by a bottom wall 2, and front and back rails 3, said bottom wall and rails forming a trough or box in which bed-clothes, pillows and the like may be kept. The end walls may be connected by a back wall or tie-rod if desired, but this is not essential.

4 and 5 are bearing plates secured to the end frame into which are trunnioned the seat and back frames 6 and 7 respectively, the trunnions being held in position by hooks 4^a and 5^a as shown, said hooks preventing the trunnions being lifted out of

the bearing plates when the parts are in the position to form a davenport as shown in Fig. 1. The free edge of the seat portion is supported by a projection 7^a extending from the back frame. To this projection is secured a spring 8 for counterbalancing the back when the same is swung down upon a bed.

9 is an L-shaped link pivotally connected to the end plates of the seat and back frames, there being a link at each end of the davenport.

In describing the operation of this link, I will assume that the dotted line *a—b* indicates the axial line of the seat portion, while the line *c—d* indicates the axial line of the back portion. The pivotal point of connection of the link 9 to the seat portion, is below the axial line *a—b* as shown in Fig. 1, so that when the strap 10 connected with the free edge of the seat portion is grasped to lift the seat as shown by dotted line in Fig. 1, said pivotal point moves in the arc of a circle indicated by the line *e*, and as the pivotal point of connection of the link 9 to the back portion moves in the arc of a circle indicated by the line *f*, the back portion is caused to be tilted to the rear as shown by the dotted lines. This is a desirable feature of my invention and follows from the fixed relation of the pivotal points of link 9 to each other. By tilting the back portion rearwardly, the upholstering thereon is not rubbed by the upward movement of the free edge of the seat portion. In the opposite movement of the parts, when the seat is being restored home, the back portion is tilted rearwardly to admit of the downward movement of the seat, and when the seat is home, the link 9 draws it forwardly so as to cause the upholstering to fit over the seat snugly. The link 9 holds the back firmly in its vertical position. In addition to the action of the link 9, the free edge of the seat engages the stops 7^a and tends to tilt the back portion forwardly.

When the seat portion is lifted to the position in Fig. 2, access is had to the box thereunder, which, as before described, may be used for the storage of bed-clothes, pillows, etc., when not in use. Further movement of the seat portion causes the parts to assume the position shown in Fig. 3 in which position, a pivoted leg 11 swings downwardly to support the free edge of the

seat. When the seat portion reaches a horizontal position, that is, when the leg 11 is on the floor, the pivotal point of link 9 to the seat portion becomes a fixed point or fulcrum. The trunnion or pivotal point of support of the back portion is also fixed.

The pivotal point of connection of link 9 to the back portion is movable, and in order to prevent the back portion from "slamming" down, and also to lock the seat and back portions in the same horizontal plane, the link 9 is placed slightly under strain in the final movement of the back portion to its lowermost position.

The dotted lines in Fig. 3 show the position occupied by the back portion when the seat portion is extended outwardly, and rests upon its leg 11. In this position the dotted line *g-h* indicates the line of centers between the two fixed fulcrums to-wit; the pivotal point of connection between the link 9 and the seat portion, and pivotal point of the back portion.

Swinging from the first mentioned fixed fulcrum, the movable pivotal points of connection between link 9 and the back portion, tends to move in the arc of a circle indicated by the line *i*, while the same movable pivotal point swinging in the arc of a circle *j*, described from the second mentioned pivotal point to-wit; the pivotal point of the back portion. The rigidity of the end frame of the back portion will cause the pivotal point to move in the arc of a circle described by the line *j*, while the link 9 will be strained in its effort to follow the line *i*, the link 9 thus acting as a spring and being under compression until the line *g-h* is passed, when the spring in link 9 restores the link to normal, and tends to hold the back portion down. This "snap" of the toggle is preferably caused by a yielding link 9, but it is obvious that lost motion could be provided at the pivotal points in which event link 9 could be rigid. When the parts are worn, lost motion thereof, will detract from the spring action of link 9. In the position of the parts shown in Fig. 3 it is impossible to raise the seat portion by lifting it at the free edge thereof, because to do so would place the link 9 in compression—the arcs of movement described, from the pivotal point of the seat and the pivotal point of connection between link 9 and the back portion, being different. It is therefore necessary to lift the front edge of the back portion by means of a strap 13 breaking the toggle joint which has acted as a lock to hold the seat and back frames in horizontal alinement.

When the back portion lies in its horizontal position, the spring 8 is under tension, and acts as a counterbalance. The free edge of the back portion is supported in its horizontal position by the pin 14, which rests

on the top of a post 15, as shown in Fig. 3. This post 15 also coöperates with the end of link 9 when the seat portion assumes its horizontal position.

16 indicates a lever pivotally mounted on the end framing of the davenport, there being preferably a lever at each end of the davenport, the lower end of said lever projecting outwardly slightly beyond the end of the davenport, and the upper end terminating under a pin 16^a on the end frame of the back portion when in its horizontal position. A spring 16^b holds the lower end of the lever up. This lever enables the operator to break the toggle and lift the back portion upwardly to the position shown by dotted lines in Fig. 3, without necessitating the use of the straps 13. When the back portion is raised to the position shown in dotted lines, where it is sustained by the links 9, the operator can then lift the back portion to its vertical position by reversing the seat portion. Thus it is unnecessary by the use of the lever 16 to attach the back portion in changing from a bed to a davenport.

I claim:

1. In a davenport, a supporting frame, seat and back portions pivotally mounted therein, and a link connected to the back portion in front of its center line, and to said seat portion below its center line, when the parts are in position to form a davenport, whereby said seat and back portions are alternately placed in control of each other in changing from a davenport to a bed and vice versa.

2. In a davenport, a supporting frame, seat and back portions pivotally supported thereby, and a link connecting said portions in such manner that when the seat portion is lifted to be swung upwardly and outwardly, the back portion is caused to be tilted rearwardly, and then swung forwardly by said link.

3. In a davenport, a supporting frame, seat and back portions pivotally mounted therein, means for supporting the free edge of said seat portion when in its outer position, means for supporting the free edge of said back portion when in its horizontal position, and a link pivotally connected to said seat and back portions at relatively fixed pivotal points, the point of attachment of said link to said back portion being below the line of centers of the pivotal points of said seat and back portions when said parts are in horizontal alinement.

4. In a davenport, the combination of the supporting frame, back and seat portions pivotally arranged therein, a link connecting said portions, whereby when the parts are in a position to form a davenport, the rear edge of the seat may be lifted and swung forwardly and outwardly, the piv-

otal points of connection of said link being
so located that the back portion is caused to
tilt backwardly before swinging forwardly
to a horizontal position, and counterbal-
5 ancing devices for said parts.

5. In a "one movement" reversible daven-
port, a supporting frame, seat and back por-
tions pivotally mounted therein, and a link
connecting said portions whereby in moving
10 the parts to form a bed, the seat constitutes
the operating medium for the back portion,
tilting the same rearwardly before moving it
forwardly, and when moving said parts to
form a davenport, the back portion consti-
15 tutes the operating medium for the seat.

6. In a davenport, pivotally mounted seat
and back portions, a link connecting said
portions and serving to lock them in hori-
zontal alinement, and a foot lever coöperat-
ing with the back portion to raise it to a 20
position where it can be operated by the
seat portion through the medium of said
link.

In testimony whereof I hereunto affix my
signature in the presence of two witnesses, 25
this 16th day of October, 1909.

WILLIAM W. HOPKINS.

Witnesses:

M. P. SMITH,
ALMA GEBHART.