

No. 730,391.

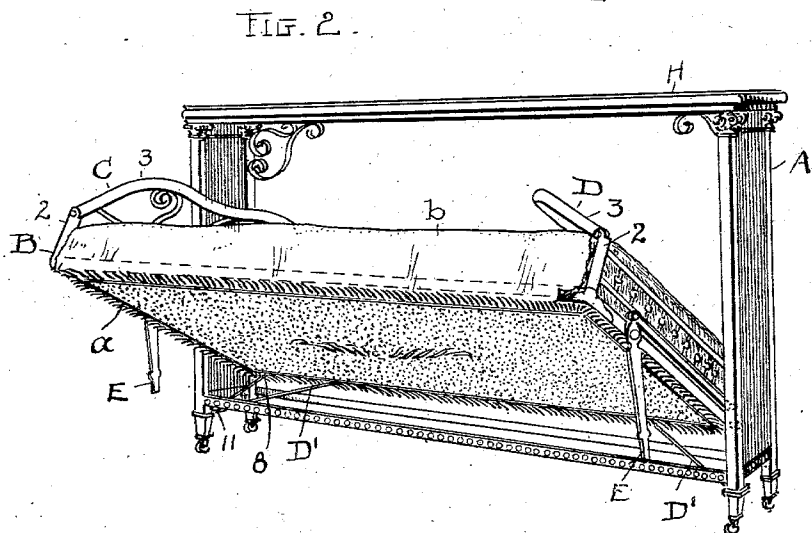
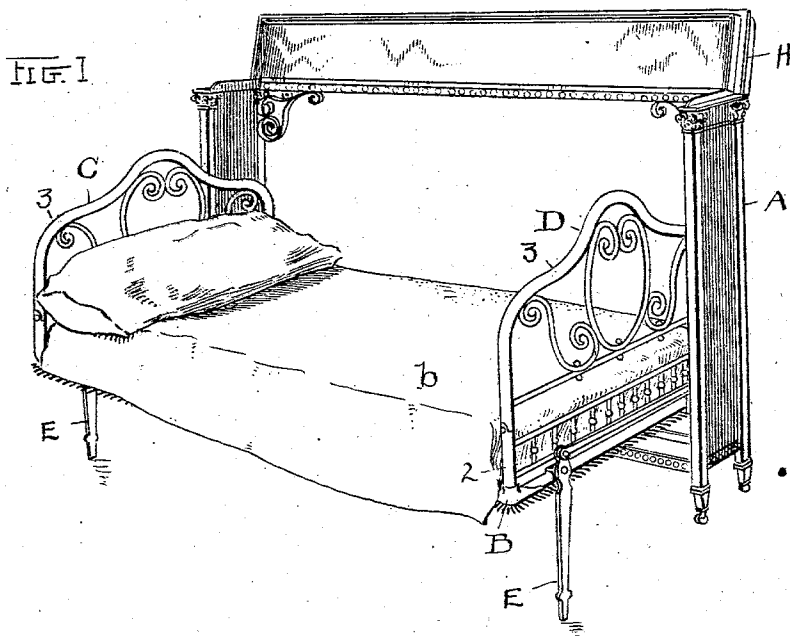
PATENTED JUNE 9, 1903.

D. T. OWEN.
FOLDING BED.

APPLICATION FILED MAR. 19, 1902.

2 SHEETS—SHEET 1.

NO MODEL.



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2 SHEETS—SHEET 2.

FIG. 3

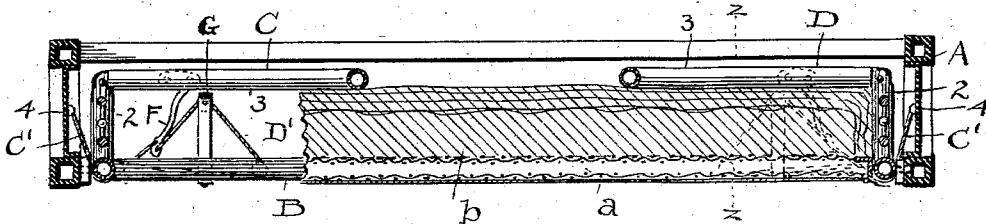


FIG. 4

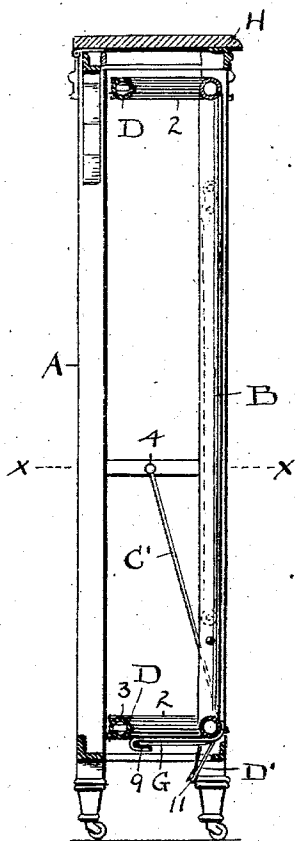
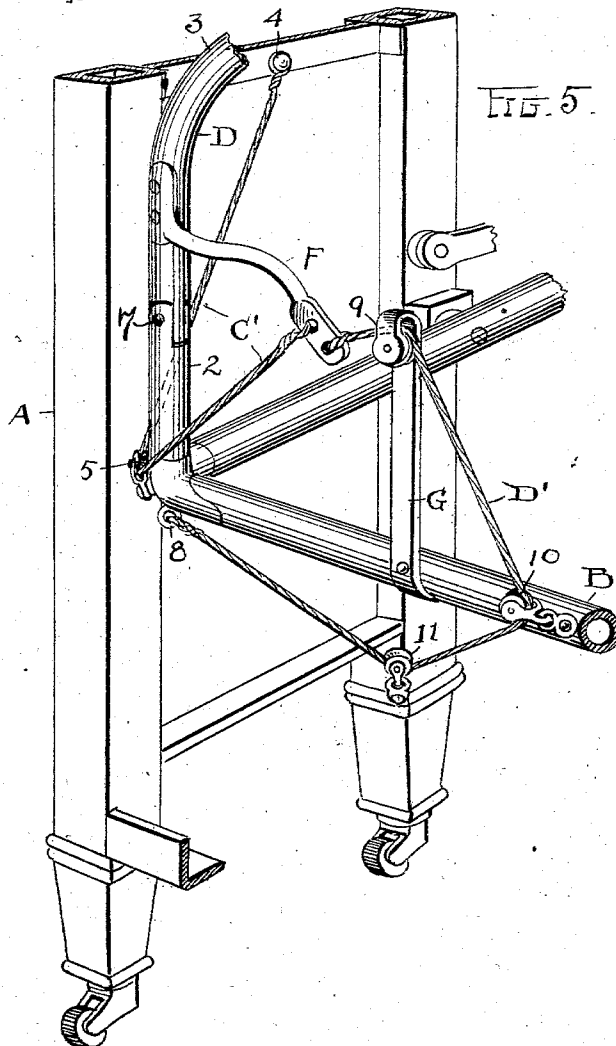


FIG. 5



ATTEST

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DAVID T. OWEN, OF CLEVELAND, OHIO.

FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 730,391, dated June 9, 1903.

Original application filed August 22, 1901, Serial No. 72,872. Divided and this application filed March 19, 1902. Serial No. 98,907. (No model.)

To all whom it may concern:

Be it known that I, DAVID T. OWEN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Folding Beds; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to folding beds; and the invention consists in a bed having a folding mattress-frame and head and foot frames or sections and of a main frame, preferably of cabinet form, into which the other frames or parts are adapted to be folded, all substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a bed embodying my invention, the same being open for use. Fig. 2 is a perspective view of the bed with the mattress in a semifolded position. Fig. 3 is a plan view on line *x x*, Fig. 4, showing especially the relation of the parts to each other when in folded position. Fig. 4 is a vertical sectional elevation of the bed, corresponding to line *z z*, Fig. 3, and with the mattress seen in Fig. 3 omitted. Fig. 5 is a perspective elevation, considerably enlarged, of one end of the bed frame or cabinet, a corner of the mattress-frame, and a corner of one of the end or head and foot frames and showing the means for automatically raising and lowering the head and foot frames when the mattress-frame is raised and lowered, all as hereinafter fully described.

A represents the main frame, which preferably is of cabinet form, so as to render it an attractive article of furniture in itself; but this frame may be a mere skeleton structure of any suitably kind or material and provided with any suitable fixings as taste may suggest, and thus, if desired, a comparatively cheap bed may be made. In any event, however, the said frame is of a capacity or size adapted to receive the mattress *b* and mattress-frame B in folded position, and, if desired, it might have a sufficient depth from side to side to accommodate a bed on each side, in which case the two beds would fold together from each side. As here shown,

however, the bed is single in style and supposed to be for a single person. If it were double, the main frame A would necessarily be correspondingly higher.

The mattress-frame is pivoted at its ends within the ends of the main frame, so as to fold back into the said main frame and allow a curtain to be drawn down in front of it, if one be used, or the bottom of the mattress may be upholstered or finished, as here shown at *a*, to present an attractive if not ornamental appearance when the bed is raised, and thus serve the purpose of a curtain in concealing the real character of the bed from view.

C and D represent the head and foot frames, respectively, or what I term the "end" frames of the bed. These are sectional, each comprising a fixed lower portion or section 2, rigid with the mattress-frame, and an upper section or portion 3, pivoted on the section 2 and adapted to fold flat down upon or against the top of the bed. The said sections or portions 2 of each end have an elevation corresponding substantially to the elevation of the mattress and the bedding thereon, while the portions 3 of said frames are pivoted to fold down upon the bed at right angles to the parts 2, as clearly shown in Fig. 3 and partially in Fig. 2.

Two distinct purposes are served by this construction. The first is that the end frames are thus adapted to be folded to get them out of the way for folding the bed within the cabinet, and the second is to provide means for keeping the bedding in place when the bed is folded. It will be understood that in this special style of bed the bed is made up before folding. It need not be aired, as is the case with other beds which have closed cabinets, because the back of the main frame or cabinet A is open and there is an air-space between the wall and the inner side of the bed, which exposes the bedding to all the ventilation it requires. Hence this bed is made up at once and folded away for the day, so that when it is turned down to be occupied it is ready for occupancy like any other bed, excepting possibly the pillows, which are not usually folded in with the cover, but can be stowed back of the middle of the bed. By this construction and arrangement of parts

the end frames C and D in addition to their ordinary function serve the very valuable purpose of holding the bedding in place by pressing closely against the same and overlapping it from both ends relatively, as seen in Fig. 3. In this structure also I provide for the automatic folding and unfolding of the said end frames through the folding and unfolding of the mattress-frame, so that one has simply to draw down or raise up the mattress-frame, and the end frames automatically follow to their right positions without personal handling or attention of any kind. The front legs E of the bed likewise are automatically folded and unfolded, as will appear. Now having reference especially to the means whereby this automatic operation is effected, reference is had to Fig. 5, wherein the parts are shown in unfolded or open position, corresponding substantially to what is seen in Fig. 1, and inasmuch as the means at both ends of the bed are similar a description of one end will serve for both. For the present the chief elements in these means are two ropes, cords, or strands C' and D' of any suitable material and construction. One of these works to fold the end frame 3 when the mattress-frame is raised and the other to open or raise it when the mattress-frame is lowered. Thus cord C' is fixed at one end to main frame A at 4 and, passing over a sheave 5 on the corner of mattress-frame B, has its other end engaged with the extremity of arm F, which is rigid with the end frame 3 above its pivot 7 a suitable distance and projects inward at an angle, substantially as shown. Now when the frame B is raised for folding and turns on its pivot so that its corner, with sheave 5, descends there must be a downward pull also on arm F, because the other end of cord C' is fixed, and this drawing upon arm F necessarily brings down frame 3 to a folded position.

The cord or rope D' likewise is fixed at one end to the free end of arm F and at the other at 8 to the corner of frame B and passes over sheaves 9, 10, and 11 between these ends. Sheave 9 is on a standard G, standing upright from the rear of frame B near its corner, while sheave 10 also is on the rear rail of frame B and sheave 11 on main frame A at a low point at or toward its front portion. With this arrangement of cord and sheaves when both the frames are folded, as in Figs. 3 and 4, and arm F is down—say substantially by the side of the corner part 2 of the end frame—the lowering of the mattress-frame will exert a pull outward on cord D' over sheave 9, and thus raise the frame 3 to upright position. This is one of the different and equivalent ways in which the end frames 3 may be automatically controlled by or through the raising and lowering of frame B, and my invention is understood to be as comprehensive as all such equivalent constructions. It will be noticed also that the top H of the cabinet or main frame A is hinged to

throw back, as seen in Fig. 1, which is convenient for some purposes, especially when the bed is occupied. It will be noticed also that the mattress-frame pivots 7 in the main frame come some distance from the rear edge of the mattress-frame, so that the portion of the said frame between its pivots turns down while the front portion of the frame turns up in folding. This gives the downward pull required to fold the end frames inward when the mattress-frame folds, as herein described.

The front legs E are pivoted on the ends of the mattress-frame, and above their pivots a rod or bar connects them with the main frame A, and thereby they are automatically folded or unfolded, as desired. These or equivalent means may be used.

In some cases it may be desirable to employ a sectional end frame at only one end of the bed instead of at both.

The subject-matter of a single head or foot section automatically folded or unfolded when the folding frame is raised or lowered is not claimed herein, but is set forth and claimed in my concurrent and original application, Serial No. 72,872, filed August 22, A. D. 1901.

What I claim is—

1. In a folding bed, a suitable main frame, a mattress-frame pivotally supported at both ends on said main frame and end frames pivotally supported on said mattress-frame, and mechanism operatively connecting said frames and constructed to fold the end frames against the top of the bed through the folding of the mattress-frame, substantially as set forth.

2. The bed-frame, a mattress-frame pivoted to fold therein, end frames pivotally supported on the ends of the mattress-frame, and means for drawing the said end frames against the top of the bed when the mattress-frame is folded, said means comprising cords operatively connecting the mattress-frame with the end frames, substantially as described.

3. In folding beds, a main frame, and a mattress-frame pivoted to turn sidewise in said main frame, in combination with end frames and mechanism for automatically folding said end frames over the top of the bed when the mattress-frame is rotated to vertical position, whereby the bedding is held in place, substantially as set forth.

4. The bed-frame and the mattress-frame pivoted therein, and sections of the end frames rigid with the mattress-frame, in combination with pivoted top sections of the said end frames and mechanism connecting them operatively with the mattress-frame, whereby when the mattress-frame is folded said top sections of the end frames are automatically folded, substantially as described.

5. The bed-frame and the mattress-frame pivoted therein, uprights rigid with the mattress-frame and a part pivoted on said uprights and adapted to fold upon the top of

the bed, and cords and sheaves on the mattress-frame operatively connected with said part and arranged to draw it down upon the bed when the mattress-frame is folded, substantially as described.

5 6. The bed-frame and the mattress-frame pivoted therein, in combination with a pivoted end frame-section, an inwardly-projecting arm on said section and cords connected
10 therewith and with the mattress-frame to fold and unfold said section by raising and lowering the mattress-frame, substantially as described.

15 7. The main frame and the mattress-frame pivoted therein at its ends and arranged to swing down inward from its pivots, in combination with an end frame-section pivoted to swing over the mattress-frame, and means to draw said end frame-section down, said means

comprising an arm on said section, and a set 20 of cords supported on sheaves on the mattress-frame and connected at one end with the said arm, substantially as described.

8. In folding beds, a main frame, a mattress-frame pivoted in said main frame to 25 turn sidewise therein, head and foot frames pivoted on said mattress-frame, and independent mechanism connecting each of said head and foot frames with the mattress-frame and constructed to fold said frames upon the bed 30 when the mattress-frame is folded, substantially as described.

Witness my hand to the foregoing specification this 25th day of February, 1902.

DAVID T. OWEN.

Witnesses:

R. B. MOSER,

F. C. McMILLIN.