

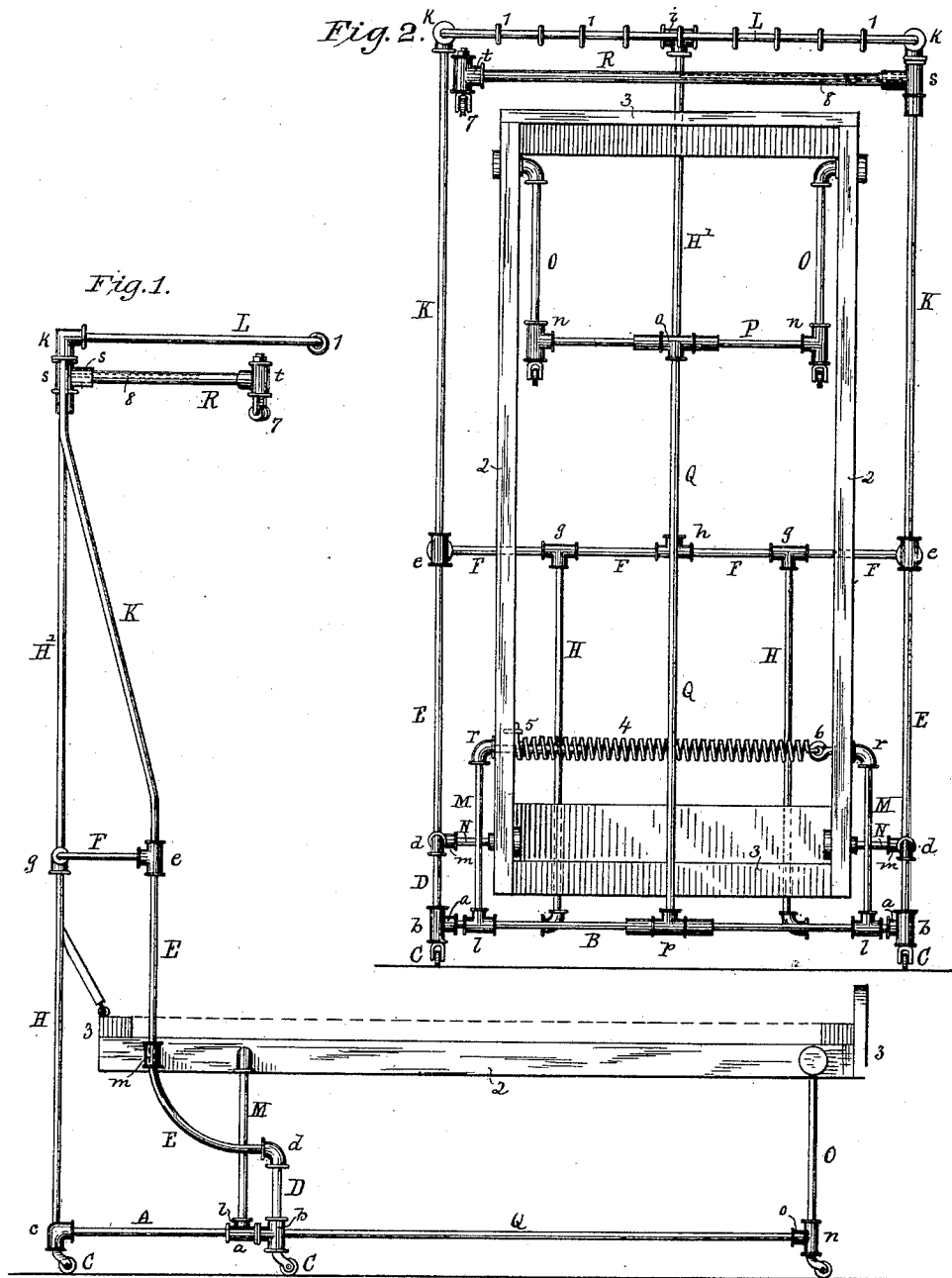
(No Model.)

2 Sheets—Sheet 1.

J. D. ENNES.
FOLDING BED.

No. 465,616.

Patented Dec. 22, 1891.



Witnesses

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Inventor

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his Attorneys

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Fig. 3.

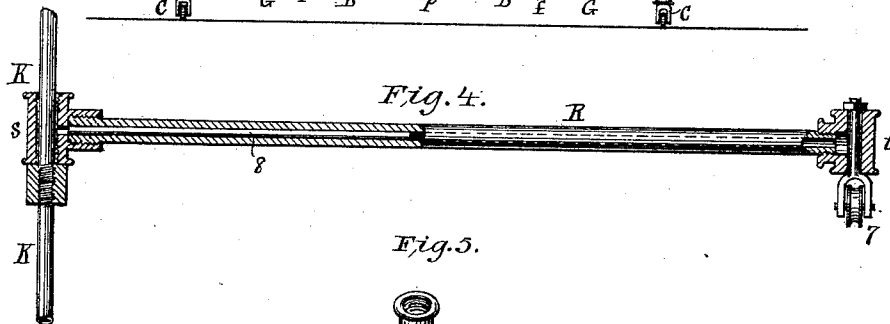
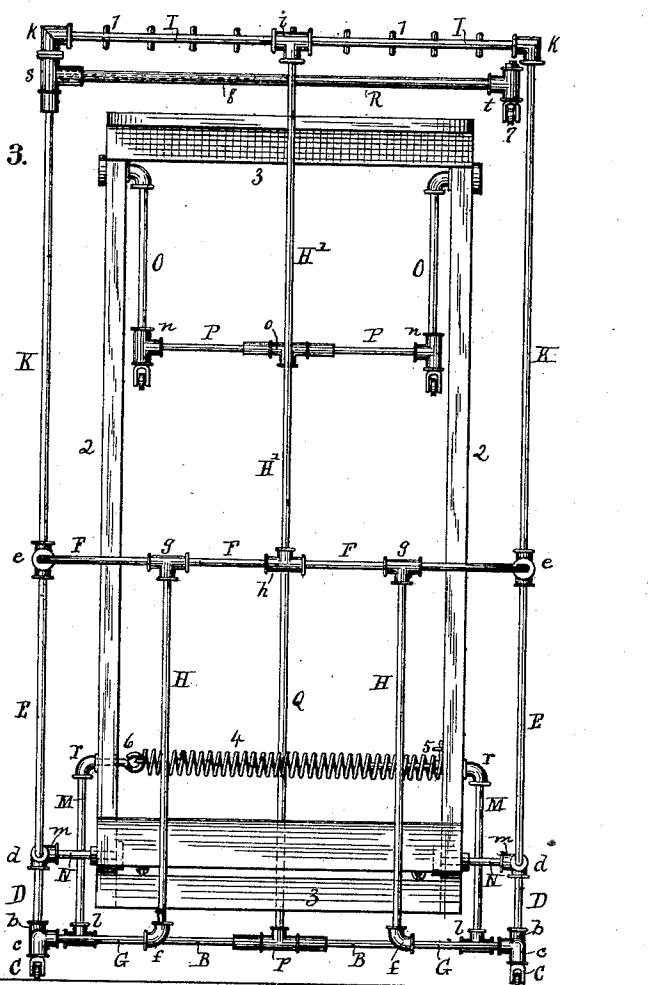
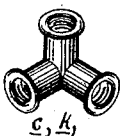


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN D. ENNES, OF NORFOLK, VIRGINIA.

FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 465,616, dated December 22, 1891.

Application filed August 22, 1888. Serial No. 283,469. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. ENNES, of Norfolk, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Folding Beds, of which

The improved bed, which constitutes the present invention, belongs to that class of folding beds wherein the bed is folded up to a vertical position when it is not in use, and in which vertical position it may be concealed by suitable drapery hung upon the framework to which the bed is hinged.

The present invention has for its object the improvement and simplification of the construction of beds of this class, and is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the bed and its supporting-frame, the bed being shown in its lowered position. Fig. 2 is a front view of the bed when folded up. Fig. 3 is a rear view of the bed when folded up. Figs. 4 and 5 are views of the bed in detail.

The vertical supporting-frame of the bed is made entirely of metallic tubing, preferably gas-pipe, united by gas-pipe fittings, and the bed proper, with the exception of the side and end rails, which are of wood, is also made of such tubing. The bottom of the supporting-frame is composed of two horizontal side tubes A A, connected by T-fittings a with a connecting cross-tube B. Each tube A at its front end enters a T-fitting b, and at its rear end enters a three-way fitting c of the character shown in detail in Fig. 5. Journaled in the fittings b c are casters C C, which permit the movement of the frame about the room.

Screwed into the fitting b on each side is a short vertical tube D, which screws into a U-fitting d, into the other side of which screws a curved tube E. This tube is curved at its lower end through a quadrant, and its upper end extends vertically to approximately half the height of the frame, where it enters a T-fitting e. The two fittings e e on either side are connected by a horizontal tube F, which is bent back, so that it extends across the frame at the rear thereof, so as not to interfere with the folding of the bed. This tube F is further braced and supported by being

connected with the fittings c in the rear ends of the tubes A.

Extending crosswise of the frame from each fitting c is a short horizontal tube G, which enters a U-fitting f, from which extends a vertical tube H, which is connected with the bent tube F by a T-fitting g.

Connected to the center of the bent tube F by a T-fitting h is a vertical tube H', which extends to the top of the frame, where it is connected to the center of a crosswise-extending horizontal tube I by a T-fitting i. This tube I fits at each end into a three-way fitting k, such as is shown in detail in Fig. 5, and each fitting k is connected to one of the fittings e by a bent tube K. These bent tubes K support the upper horizontal tube at its ends and brace and render firm and strong the entire frame.

Connected at the opposite ends to the fittings k k is a horizontal curved canopy-tube L, which extends far enough front to stand in front of any part of the bed when folded.

Upon the tube L are strung curtain-rings 1 1, to which may be attached curtains or other drapery to conceal the bed when not in use. There being no obstruction on the tube L, all of the rings may be slid to the back portions thereof, so that the curtains may be pushed back entirely out of the way when it is desired to lower the bed.

The bed proper comprises a rectangular wooden frame consisting of side rails 2 2 and end rails 3 3. This rectangular frame is pivotally connected with and supported by the vertical supporting-frame in the following manner. On each side the rectangular frame is pivotally connected by a tubular leg M, which screws at its lower end into a T-fitting l, which turns freely on the front cross-tube B of the vertical supporting-frame. Also, on each side of the rectangular frame a short horizontal tube N is swiveled to the side rail 2 and fits at its outer end into a T-fitting m, which embraces the quadrantal portion of the tube E of the supporting-frame. This fitting m is reamed out so as to form a runner, which slides easily on the tube E when the bed is lifted. The bed when lifted turns on the upper end of the leg-tubes M, the axis on which the bed turns being thus the center of the

quadrantal portions of the tubes E. The bed when lowered is supported at its forward end by the tubular legs O O, which are journaled at their upper ends to the inner sides of the side rails 2 2. The lower ends of these legs enter T-fittings *n*, which are connected by a cross-tube P. Journaled to the center of this tube P by a T-fitting *o*, turning freely on the tube P, is a tube Q, which at its opposite end is journaled to the center of the tube B by a T-fitting *p*, which turns freely on the tube B. This tube Q, thus connected, not only holds the front legs firmly in position when the bed is lowered, but it also automatically holds the front legs when the bed is raised.

Beds of this character, especially when furnished with mattresses and other bedclothes, offer a considerable weight to be raised.

The present invention comprises means for assisting in lifting the bed. To this end a torsional coiled spring 4 is used. This coiled spring is attached at one end at 5 directly to one of the side rails 2; but at the opposite end it is attached to an eye 6, the shank of which passes through the side wall 2 and enters a U-fitting T on the upper end of the tubular legs M on that side. The shank of this eye 6 constitutes the axis on which the bed turns when raised or lowered, so that the spring at this point is not affected by the movement of the bed. On the opposite end, however, the spring is attached to the bed-frame, so that when the bed is raised or lowered the spring, being arranged along the axis on which the bed turns, is turned. The spring is so coiled that this movement will cause the spring to be coiled more tightly when the bed is lowered, thus giving the spring tension, which will assist in lifting the bed.

R is a tube of a length nearly equal to the width of the supporting-frame, which is journaled at one end by a T-fitting *s* to one of the upper vertical side tubes K, on which the fitting *s* turns freely, as shown in Fig. 4. This tube is adapted to be swung out over the bed, when the same is lowered, in order to support a mosquito-canopy. The mosquito-canopy will be supported by a pulley 7, supported by a T-fitting *t* on the free end of the swinging-canopy tube R. The swinging canopy-tube R is strengthened at its inner end by a small rod 8 within it, as shown in Fig. 4.

The folding bed thus formed is composed entirely of metallic tubing, giving it the maximum strength with the minimum weight. It is cheaply and quickly made, all the parts being of materials which are standard goods on the market, and it can be readily taken

apart for transportation, and being preferably made of ordinary gas piping and fittings, any person familiar with putting together such articles will readily understand the details in the construction of this improved bed. When in use, there are no concealed and inclosed corners to harbor vermin, but the whole frame is easily accessible for the purpose of cleaning.

I claim as my invention—

1. The supporting-frame having curved tubes E on either side, in combination with the bed connected with said supporting-frame by legs M, said bed turning upon the upper ends of said legs and said bed having tubular runners *m*, which slide on the curved portions of said tube E, substantially as set forth.

2. The vertical supporting-frame for a folding bed, composed of the combination of the side horizontal tubes A A, connected by the cross-tube B, the vertical tubes D, connected to said tubes A A, the curved vertically-extending tubes E, connected to said tubes D, the rearwardly-curved horizontal tube F, connected at opposite ends to said tubes E, the short horizontal cross-tubes G G, connected to the said tubes A A at the rear of the frame, the vertical tubes H H, connecting said tubes G G to said tube F in the rear of the frame, the vertical tube H' at the rear of the frame, connected to the said tube F, the cross-tube I at the top and rear of the frame, connected to said tube H', and the tubes K, connected at their lower ends to said tubes E and bent backward and connected at their upper ends to said tube I, substantially as set forth.

3. The supporting-frame comprising horizontal lower cross-tube B and curved vertically-extending tubes E E, in combination with the bed-frame, the rear legs M M, swiveled at their upper ends to the bed-frame and at their lower ends to said cross-tube B, runners *m m*, swiveled to the bed-frame and sliding on the curved portions of the tubes E E, the front legs O O, swiveled to the bed-frame, the cross-tube P, connected to said legs O O, and the tube Q, journaled at opposite ends to the tube P, and the tube B, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN D. ENNES.

Witnesses:

JOHN NEELY,
A. A. HAUKE.