

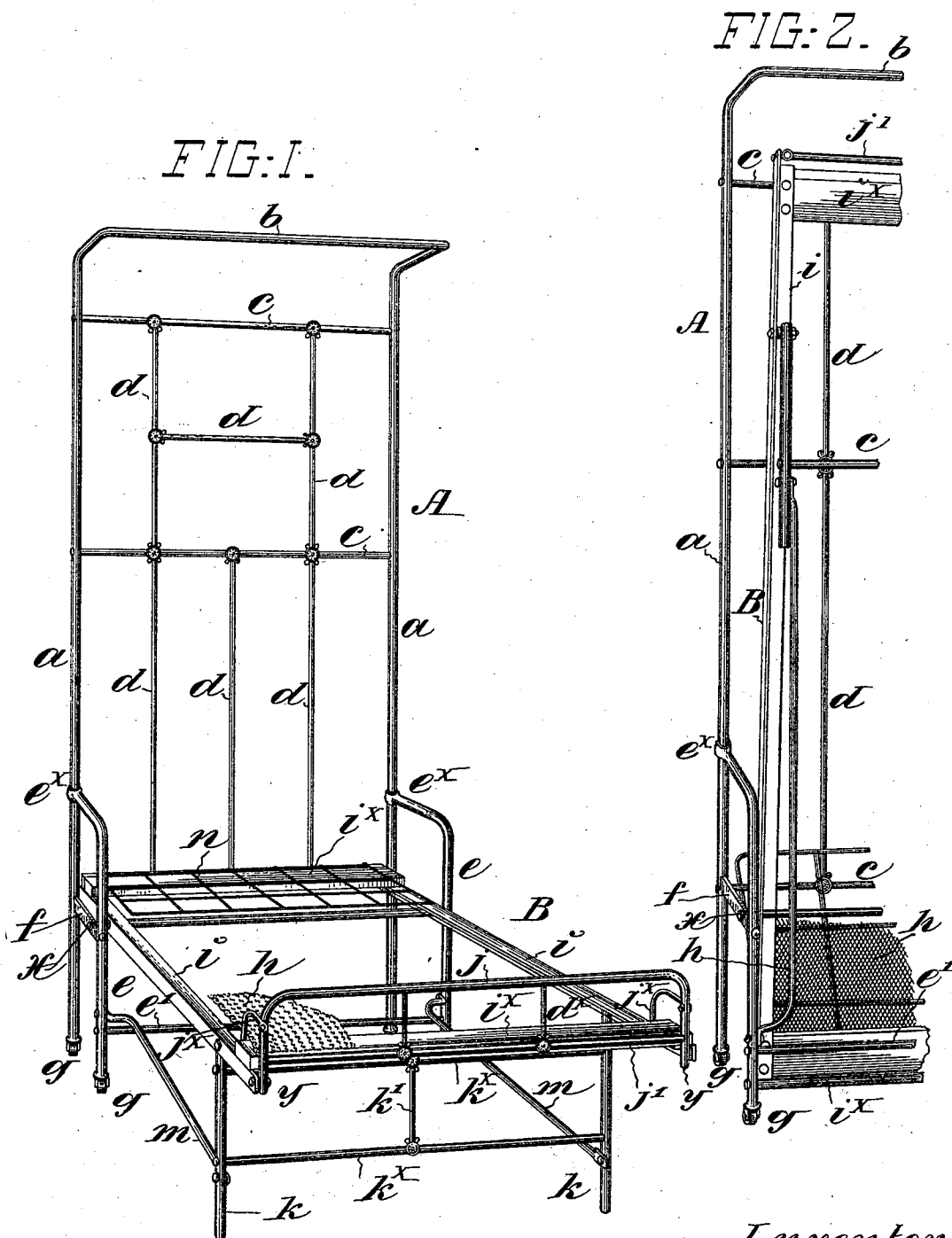
(No Model.)

2 Sheets—Sheet 1.

A. D. HOUSTON.
FOLDING METAL BED.

No. 518,996.

Patented May 1, 1894.



Witnesses:

J. W. Whiman
Peter A. Ross

Inventor:

Adelbert D. Houston

by Henry Comstock

His Attorney

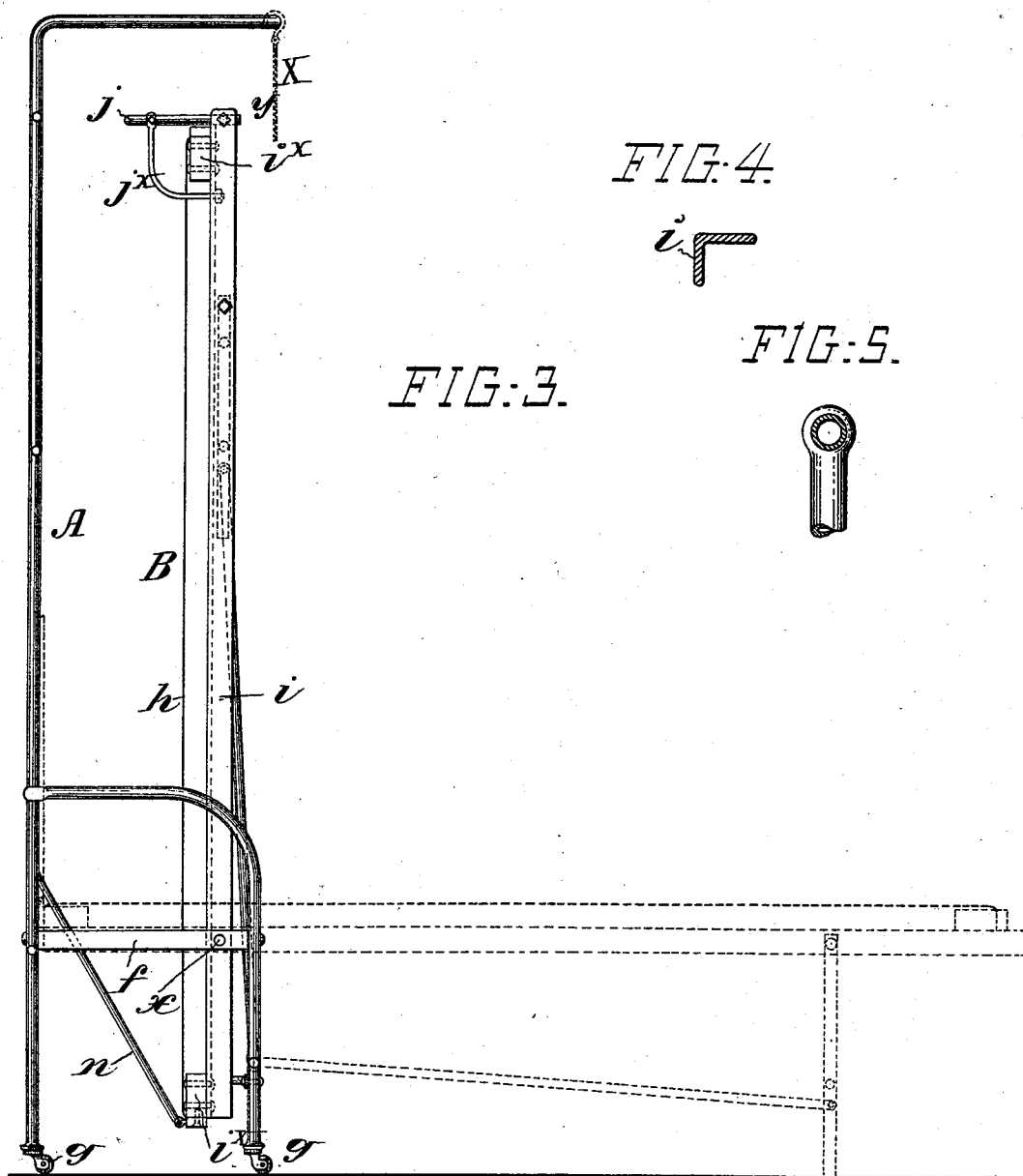
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UNITED STATES PATENT OFFICE.

ADELBERT D. HOUSTON, OF BROOKLYN, NEW YORK.

FOLDING METAL BED.

SPECIFICATION forming part of Letters Patent No. 518,996, dated May 1, 1894.

Application filed September 16, 1893. Serial No. 485,696. (No model.)

To all whom it may concern:

Be it known that I, ADELBERT D. HOUSTON, a citizen of the United States, and a resident of the city of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Folding Metal Beds, of which the following is a specification.

My invention relates to folding beds constructed wholly, or substantially so, of metal bars or tubing.

The invention will be fully described hereinafter with reference to the accompanying drawings and its novel features carefully defined in the claims.

In the said drawings—Figure 1 is a perspective view of a bed embodying my invention and representing the bed-frame as down, or unfolded. Fig. 2 is a fragmentary perspective view, on a somewhat larger scale, showing the bed-frame folded. Fig. 3 is a side view of the bed, showing the frame in full lines, as folded into the standard, and in dotted lines, as unfolded. Fig. 4 is an enlarged, transverse section of the side-rail of the bed-frame.

The bed is represented in Fig. 1 as rather narrow, in order to economize space; but it will be understood that it may be of the usual width or widths.

The standard, A, is made of metal bars or tubing, and preferably of iron tubing for the sake of lightness and cheapness. It comprises an elevated frame, consisting of two uprights or standards, *a, a*, connected at their tops by a canopy frame, *b*, which projects forward and is formed integrally with the standards by means of right-angled bends in the tubing, as clearly shown. The standards are also connected by ties, *c, c, c*, and the spaces filled by rods or slender tubes, *d*. Where these rods join and intersect the ties ornamental sockets are employed. At its lower part, in front, the standard has legs *e, e*, which are bent into the form of knees at their upper parts and secured to the respective standards at *e^x, e^x*. The legs are connected, respectively, to the standards by flat bars, *f, f*, to form pivot-bearings for the bed-frame B. The standard is provided with casters, *g*.

The bed-frame proper, B, is similar to a woven wire bed-spring, and as herein shown it consists of a stout frame pivotally mounted

in the bars, *f*, at, *x*, and the ordinary woven wire fabric, *h*, strained over said frame. In Figs. 1 and 2 I have shown fragments of this fabric, and in Fig. 3 it is represented in edge view by a single line. The frame on which the woven wire *h*, is strained is formed of two metal side-rails, *i, i*, of angular cross-section, as seen in Fig. 4, and of two end-rails, *i^x*, of wood.

On the foot of the bed-frame, B, is fixed a foot-piece, comprising as its elements a piece of tubing, *j*, which extends across the bed-frame and has its extremities bent down and secured to the ends of the side-rails, *i*, of the frame at *y*. The upright parts of the tubing are braced by knees, *j^x*, of bent rods, secured at one end to the tubing, and at the other end to the side-rails, *i*, of the frame. A transverse bar of tubing, *j'*, extends across between the uprights of the tube, *j*, and the space between the tubes is crossed by rods or slender tubes, *d^x*, similar to the rods, *d*, in the standard. When unfolded or down, as in Fig. 1, the bed-frame is supported on folding legs, *k, k*, pivotally attached or hinged to the respective pendent flanges on the side-rails, *i*, of the frame, and connected by two transverse ties, *k^x*; these ties are connected or tied at the middle by a rod, *k'*. The legs, *k*, and their ties will be of metal tubing. The hinged legs are adapted to be folded and unfolded automatically, when the bed-frame is operated, by means of rods, *m, m*, hinged to the respective folding legs *k*, at one end, and to the respective legs, *e*, of the standard, at the other end.

When the bed-frame is folded into the standard, as seen in Figs. 2 and 3, it is held in that position by the rods, *m*, which form a toggle with the legs, *k*. The lower ends of the rods, *m*, being pivoted to the legs, *e*, the said rods stand at an angle when the bed-frame is folded or turned up, and serve as braces, their upper ends pressing the folding legs, *k*, back against the top flanges of the respective side-rails, *i*, and the bed-frame cannot be pulled down except by first grasping and swinging out the legs, *k*. The bed-frame is prevented from being folded too far beyond the perpendicular by any suitable stop. As herein shown the bed-frame below the pivot, *x*, (in Fig. 3) strikes the bent tie-

bar or tube, *e'*, which extends across between the legs, *e*. The canopy frame, *b*, projects far enough to form a support from which to suspend a curtain, or curtains to screen the bed when folded. In Fig. 3 I have shown a part of such a curtain, *X*, in dotted lines. This curtain, which may be suspended from the canopy bar by hooks, in a known way, forms no part of the bed, and it will be, or may be removed when the bed is in use.

When the bedding is on the bed-frame and the latter is folded into the standard, the bedding will occupy the space between the upright standard and the upright frame, and it will be prevented from falling or working down by a head-piece, *n*, hinged at one end to the head-rail of the bed-frame and resting, when the bed is folded, with its free end against the upright rods, *d*, of the standard. In Fig. 1 this head-piece, *n*, is represented as folded down on the bed-frame, but when the bedding is to be put on, it must be turned up to a vertical position, as indicated by dotted lines in Fig. 3. This head-piece will be of metal rods, and in the form of a grid, by preference, and it will be of such width that when the bed is folded it will stand in an inclined position, as clearly shown, and form a sort of pocket to receive the bedding.

It is important that the attachment of the tube forming the front legs *e* to the uprights *a* of the standard shall be very firm in order to give rigidity to the structure of the standard, and to effect this I forge an eye in the end of the tube and weld it fast about the upright *a* as seen at *e^x* in the principal figures, and in the detached view, Fig. 5. The flat bars, *f*, have tenons at their ends which pass through the uprights and are riveted down thereon. In addition to the welding of the eyes at *e^x* about the uprights *a*, they may be riveted thereto. I consider this rigid construction of the frame essential to the durability and proper continued operation of the bed.

I do not claim herein broadly the use of metal tubing to form parts of a folding bed, nor do I claim broadly, in a folding bed, means

for automatically folding the legs of the bed-frame, when the bed is folded up.

Having thus described my invention, I claim—

1. In a folding bed, the combination with the standard having tubular uprights *a*, forming rear corner posts or legs, of the tubular front legs *e*, arranged in front of the said rear corner posts or legs of the standard and having their upper ends bent rearwardly and provided with eyes surrounding and welded fast to said uprights *a*, ties or braces *f*, connecting said uprights *a* and legs *e* near their lower ends, and the bed frame pivotally mounted in said standard, substantially as set forth.

2. In a folding-bed, the combination with the standard having tubular uprights *a*, forming rear legs, of the tubular front legs *e*, having their upper ends bent rearwardly and rigidly secured to said uprights *a*, the ties or braces *f*, connected to the lower portions of said uprights and legs, and the bed-frame pivotally secured in said braces, substantially as set forth.

3. In a folding bed, the combination with the standard having tubular uprights *a* forming rear corner posts or legs, said uprights being connected by suitable cross rods and having their upper ends bent forward and connected to form a canopy support, of the tubular front legs *e* connected at their lower ends by suitable cross rods, and having their upper ends bent rearwardly and provided with eyes surrounding and welded fast to the lower portions of said uprights of the standard, ties or braces connecting said uprights *a* and legs *e* near their lower end, and the bed frame pivoted in said braces, substantially as set forth.

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

ADELBERT D. HOUSTON.

Witnesses:

HENRY CONNETT,
JAMES K. DUFFY.