

No. 671,843.

Patented Apr. 9, 1901.

L. W. WELCH.
SUPPORT FOR BED BOTTOMS.

(Application filed Aug. 4, 1900.)

(No Model.)

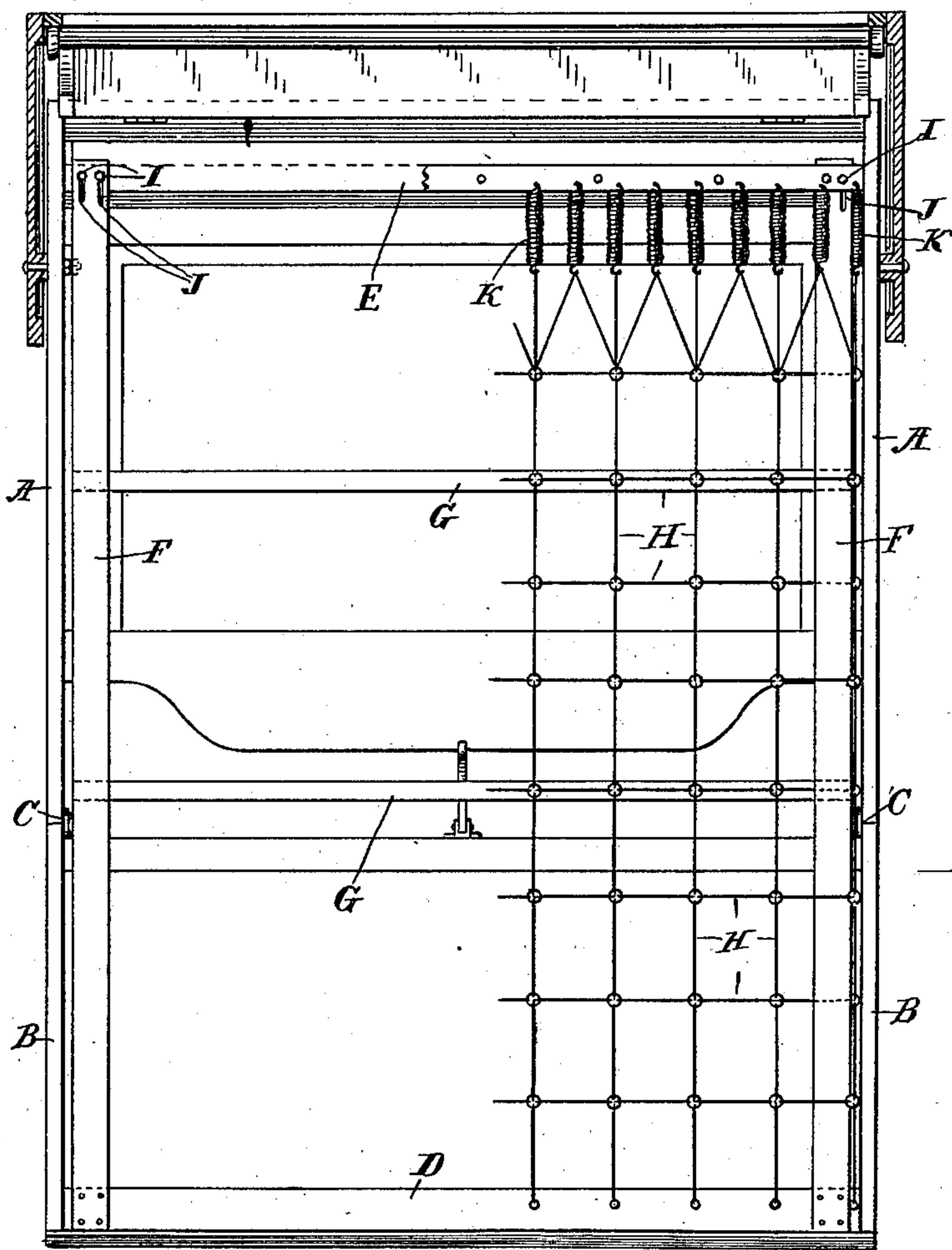


Fig. 3.

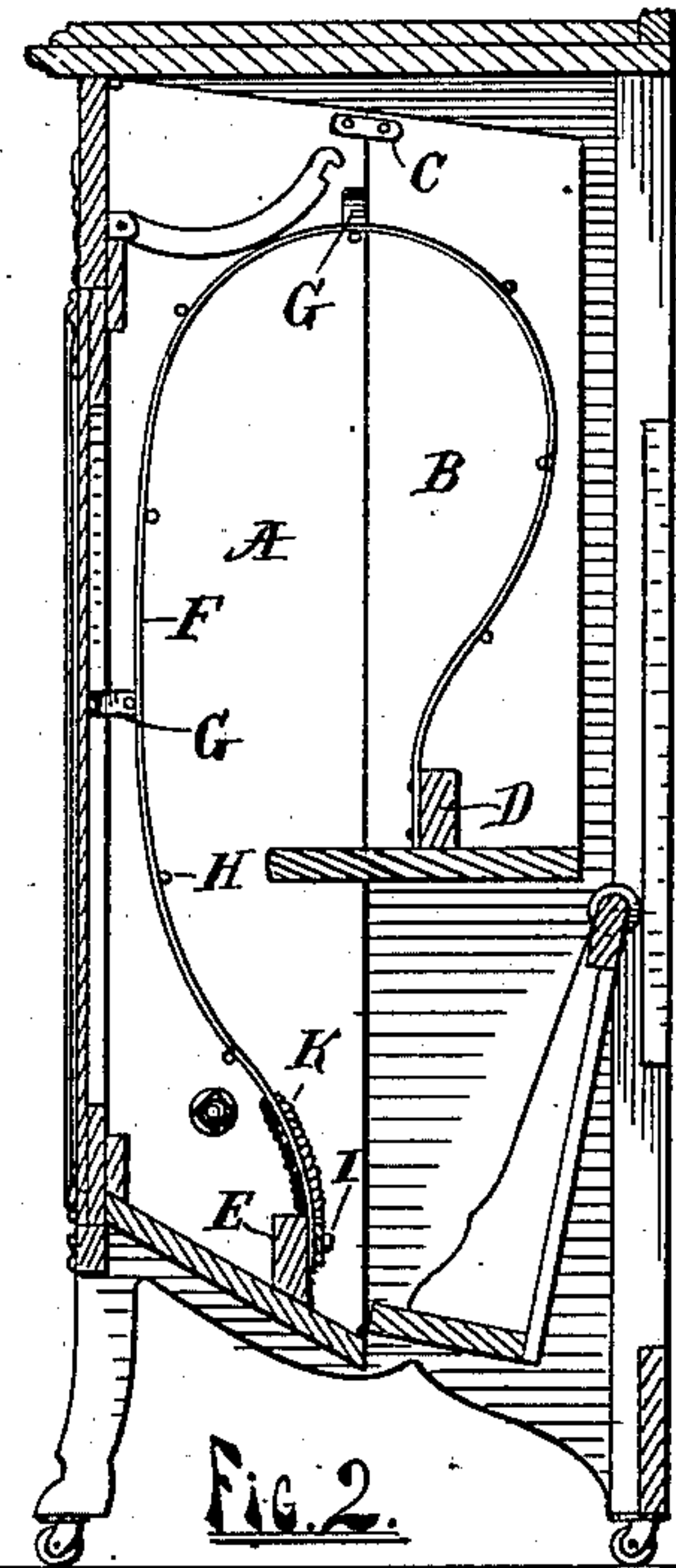


Fig. 2.

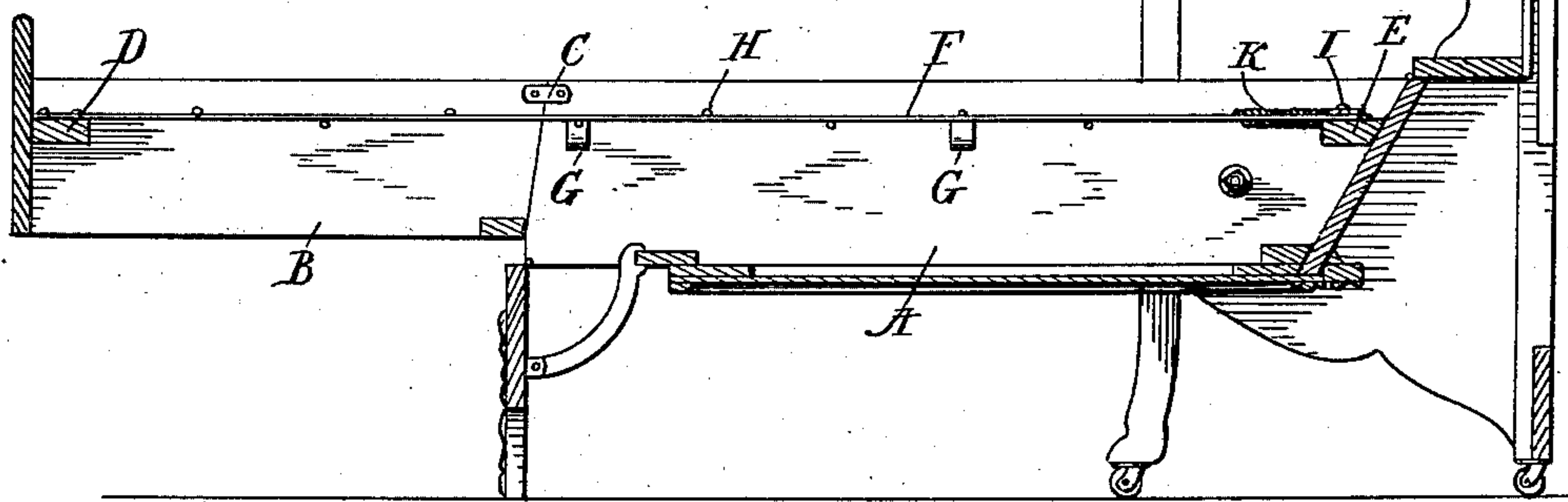


Fig. 1.

Witnesses

George H. Olney
Palmer A. Jones.

Inventor

Lyman W. Welch

By

Luther V. Moulton

Attorney

UNITED STATES PATENT OFFICE.

LYMAN W. WELCH, OF GRAND RAPIDS, MICHIGAN.

SUPPORT FOR BED-BOTTOMS.

SPECIFICATION forming part of Letters Patent No. 671,843, dated April 9, 1901.

Application filed August 4, 1900. Serial No. 25,862. (No model.)

To all whom it may concern:

Be it known that I, LYMAN W. WELCH, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Supports for Bed-Bottoms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improved support for the bed-bottoms used in folding beds, and more particularly to such supports to be used in folding beds having the folding section divided transversely and hinged to fold upon itself before folding or turning up into the case; and its object is to provide means whereby the bed will be well supported at the upper part when so folded and turned up into the case and also flexibly supported when opened out for use and to provide the device with certain new and useful features, hereinafter more fully described, and particularly pointed out in the claims.

In the forms of folding beds to which my invention pertains it is desirable to use wire or similar mattress or bed supports of small thickness or depth and of comparatively little weight. The form of mattress or mattress-support shown in the accompanying drawings is specially well fitted for the purpose. This is the well-known linked form, being composed of steel-wire links connected to each other by perforated plates. This form is flexible vertically, but is inelastic in its plane, having springs at one end, as shown. As its members cannot stretch, it cannot sag in location and requires no coiled springs underneath it any point and so occupies little space in thickness. The difficulty, however, which has heretofore prevented the use of this and like forms of metallic mattresses lies in its incapacity to sustain itself when the bed is folded. It is then liable to collapse. It does not require support when the bed is extended nor reinforcement in any direction, but only support when folded. This I have supplied effectually by means of elastic strips, preferably of steel, one set of which gives it longitudinal and another lateral support against collapse when folded. The longitu-

dinal strips are held in the bed-sections and are without special function when the bed is extended, but form an arch when the bed is folded and hold the bed-bottom out in a distended form, so that it and the bedclothing are held in proper position for again opening. In like manner the lateral strips prevent lateral collapse of the bed-bottom.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of a device embodying my invention as applied to a folding bed of the class referred to; Fig. 2, the same as it appears when folded, and Fig. 3 a plan view of the folding section with parts broken away and the case in horizontal section.

Like letters refer to like parts in all of the figures.

A and B represent the body and foot portions of the folding section of a bed hinged together at C, in which style of bed my device is adapted to be used. The exact construction of this bed is not material, however, as my device is adapted for use in conjunction with any bed the folding section of which is divided transversely and hinged to fold upon itself.

D and E are cross-bars at the respective ends of the folding section, to which bars the bed-bottom H is usually attached.

My device consists in providing strips F of elastic material, preferably thin strips of tempered steel, such as is used in band-saws. I prefer to use one at each side, but more or less may be used as convenient. These strips F are fixed at one end preferably by attaching the same to the bar D and at the other end are slidably attached to the bar E in any convenient way, preferably by means of suitable pins, screws, or bolts I passing through longitudinal slots J in the strips F, whereby the strips will yield to the longitudinal elongation of the bed-bottom when in use and will not buckle up as the bottom contracts when relieved of the load.

G G are transverse strips of somewhat stiffer material than the strips F and are secured at their respective ends to the edges of the bed or to the strips F and curved to form arches. These strips G may be attached to the bottom H intermediate of their length.

Also, if desired, these strips G G serve to strain the bottom transversely when the bed is open and also to support the same when the bed is closed, as in Fig. 2.

5 The strips F when the bed is closed assume the form substantially as shown and constitute sustaining-arches to support the bed-bottom and bed. The strips G also form transverse arches and assist by supporting the bed
10 and bracing the arches transversely.

In Figs. 1 and 2 it will be observed that the bed-bottom being composed of wire links H, connected by disks, is easily flexible, this form being well known, and is made yield-
15 ing by means of coiled springs K at one end. The bottom is thus extended between the cross-bars D and E, to which also the flat steel springs are connected, as above described. I have shown a convenient plan of one on
20 each side. The transverse bracing or supporting springs are shown at G.

From the foregoing description the operation of my device will be readily understood.

Having thus fully described my invention,
25 what I claim, and desire to secure by Letters Patent, is—

1. In a folding bed having hinged sections folding on each other, and in combination, a
30 flexible and longitudinally elastic bed-bottom, and elastic strips connected with said

bed-bottom supporting said bottom when folded, substantially as described.

2. In a folding bed and in combination, a flexible bed-bottom, sections folding on them-
selves and supporting said bed-bottom, sup- 35 ports at the ends of said sections to which said bed-bottom is fixed at its ends, and spring-strips having their ends connected to said supports, the connection at one end be-
ing a sliding connection, substantially as de- 40 scribed.

3. In a folding bed having hinged sections folding on each other and in combination, a flexible bed-bottom, elastic longitudinal
strips, and an elastic transverse strip, extend- 45 ing and supporting the said flexible bottom when the same is folded, substantially as described.

4. In a bed having sections folding on each other and in combination a flexible bed-bot- 50 tom and elastic longitudinal and transverse strips connected with said bed-bottom acting vertically and supporting the said bottom when folded, substantially as described.

In testimony whereof I affix my signature 55 in presence of two witnesses.

LYMAN W. WELCH.

Witnesses:

PALMER A. JONES,
GEORGE HOLLWAY.