

(No Model.)

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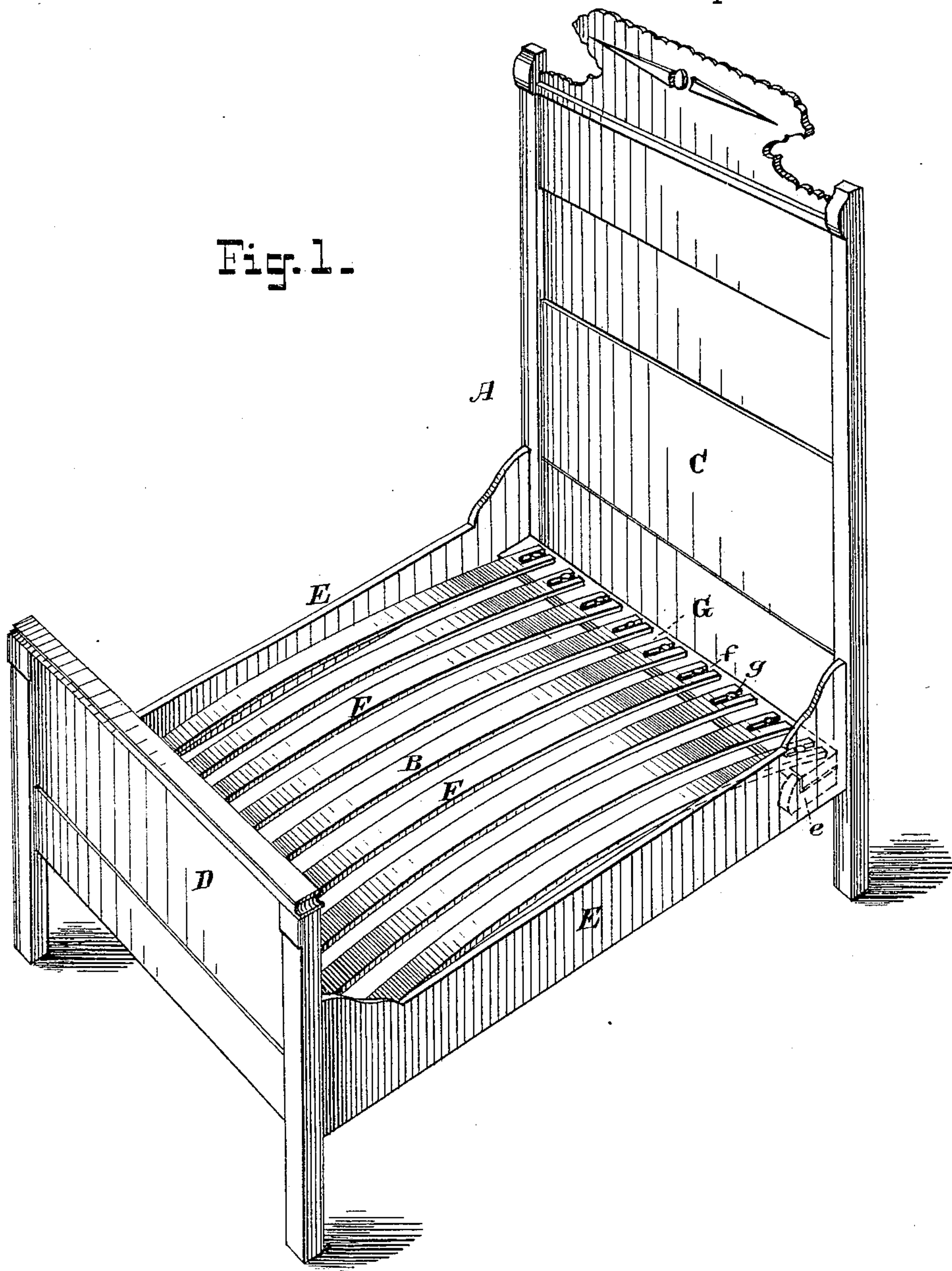
O. FLOHR.

BED, &c.

No. 389,292.

Patented Sept. 11. 1888.

Fig. 1.



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Paschal J. Ferrara

INVENTOR:

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(No Model.)

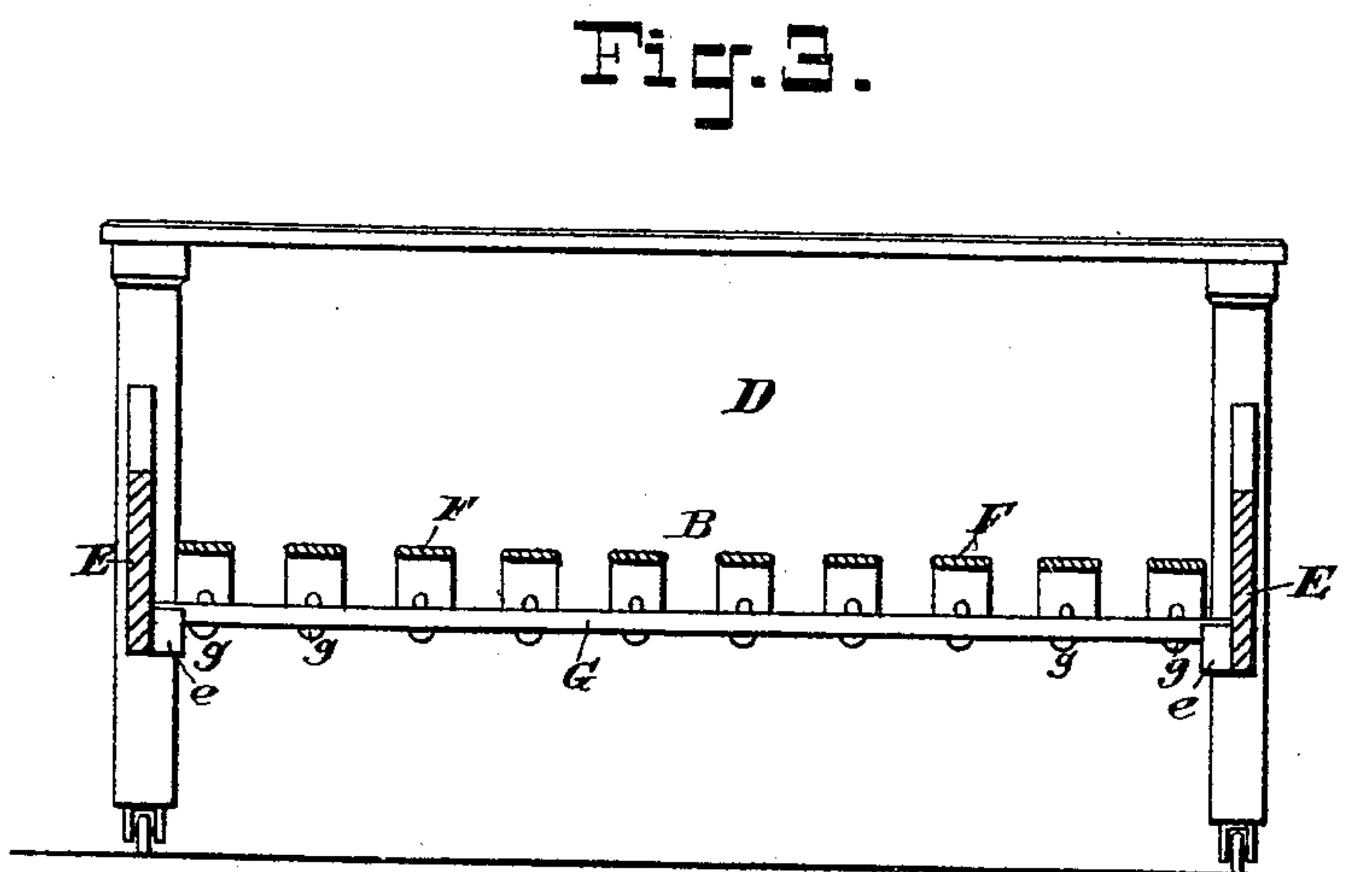
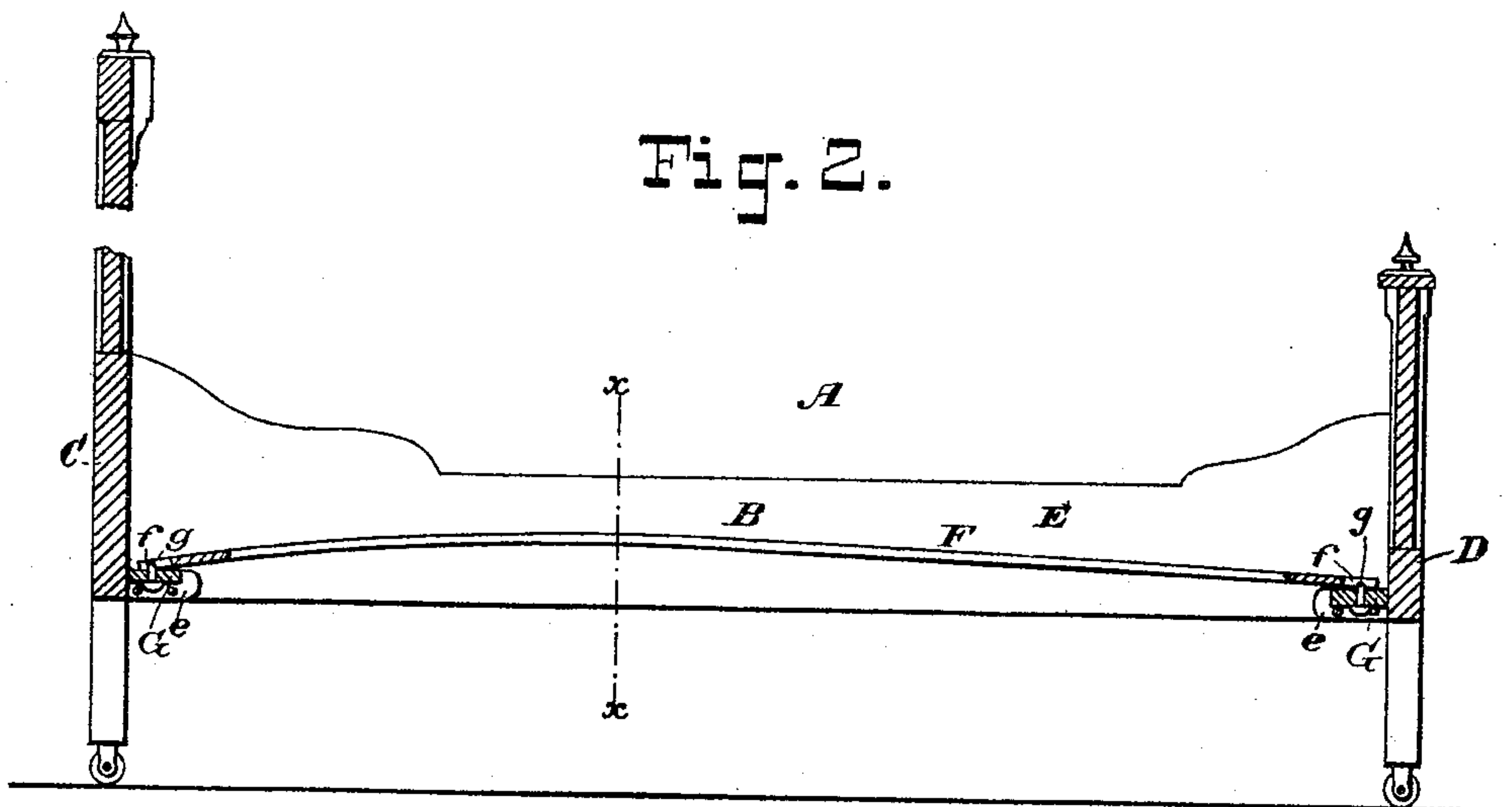
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No. 389,292.

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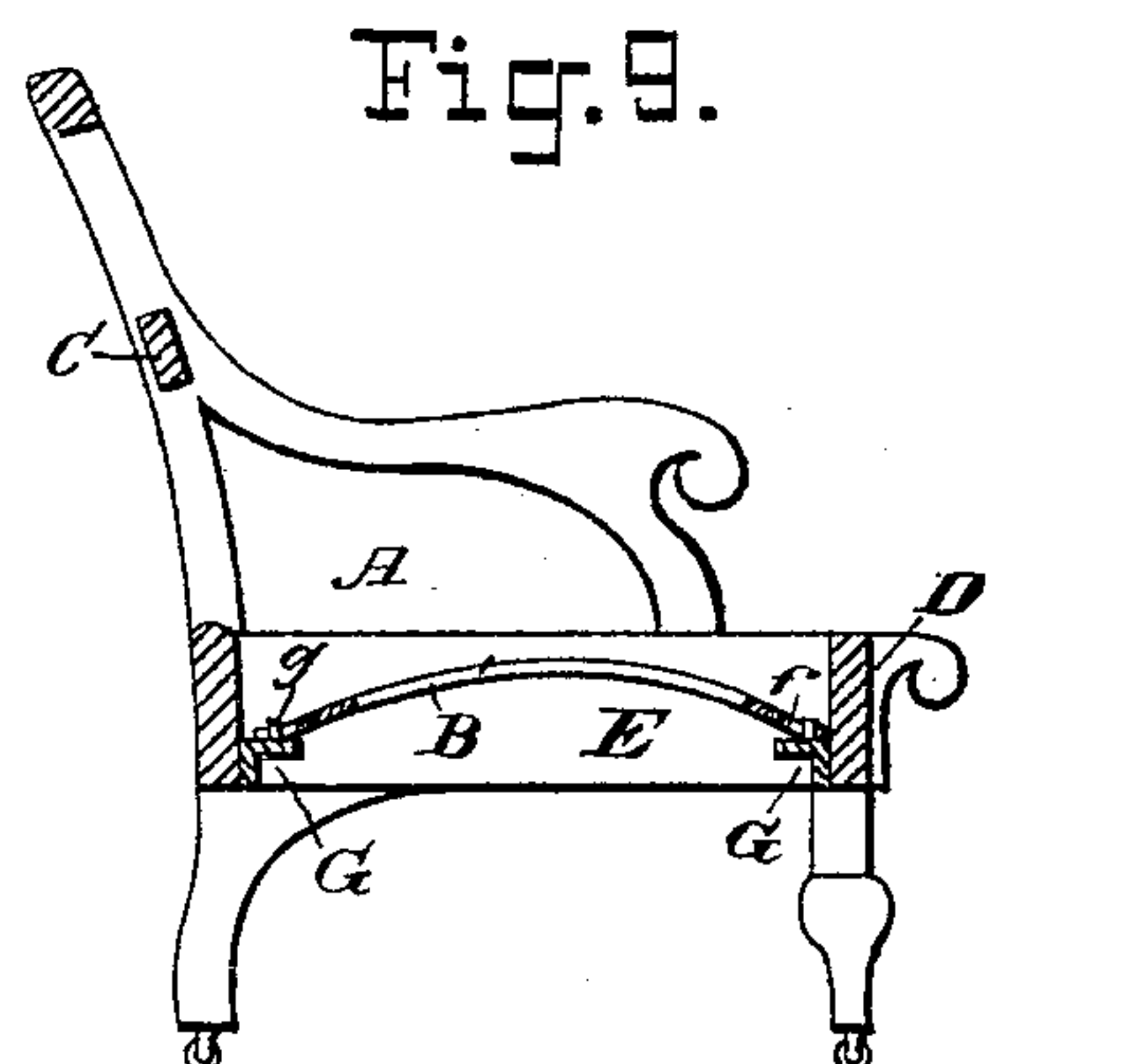
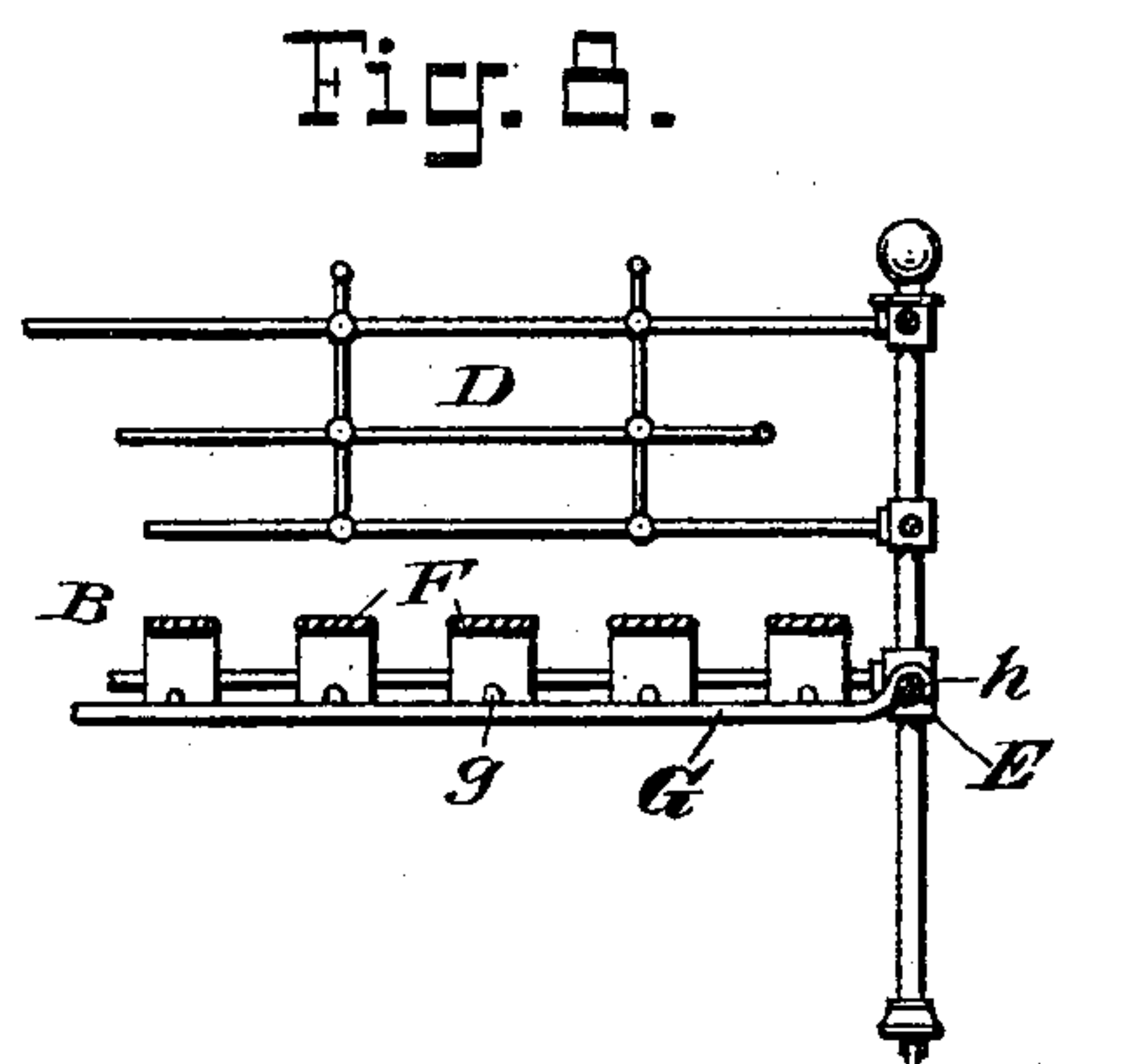
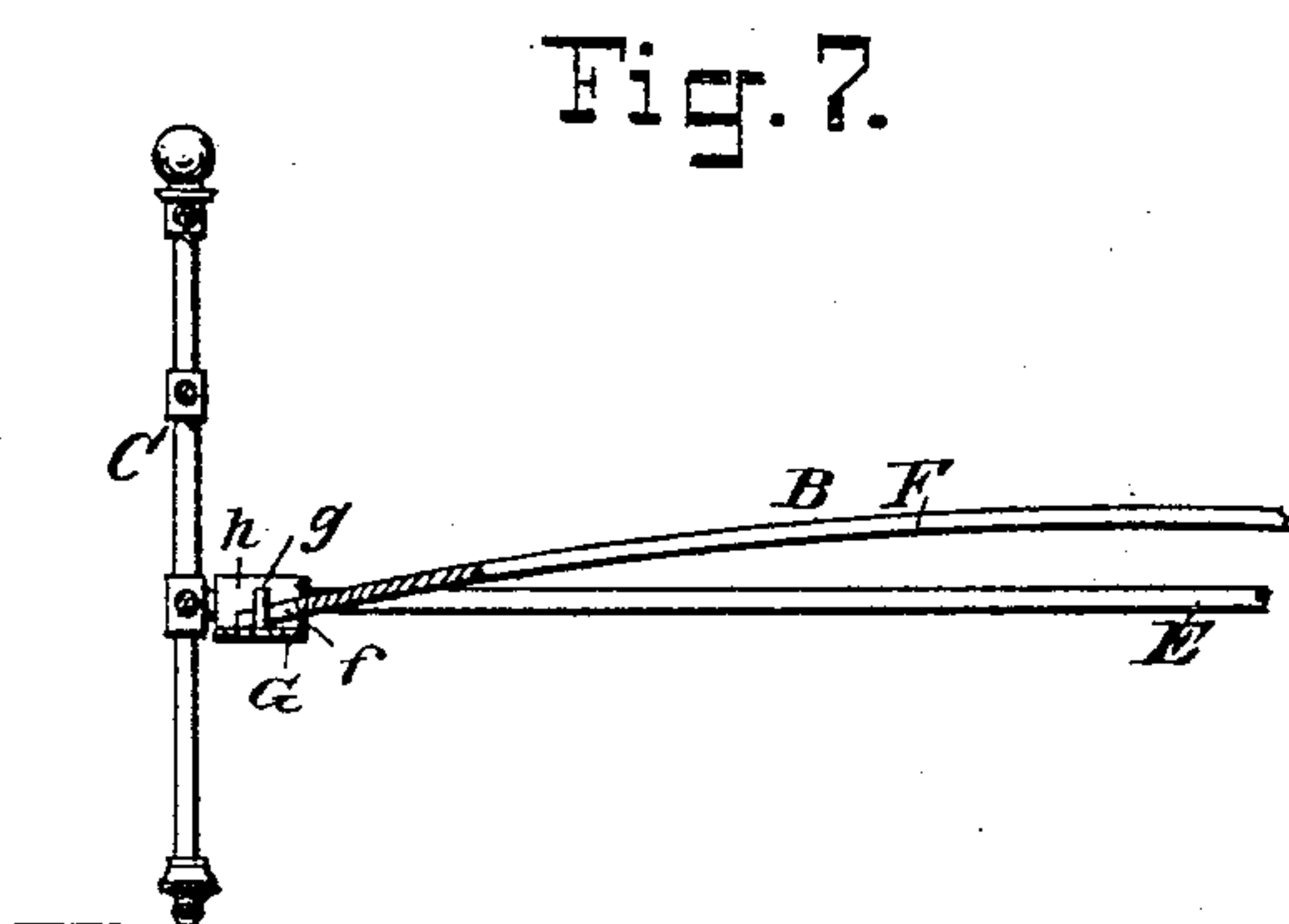
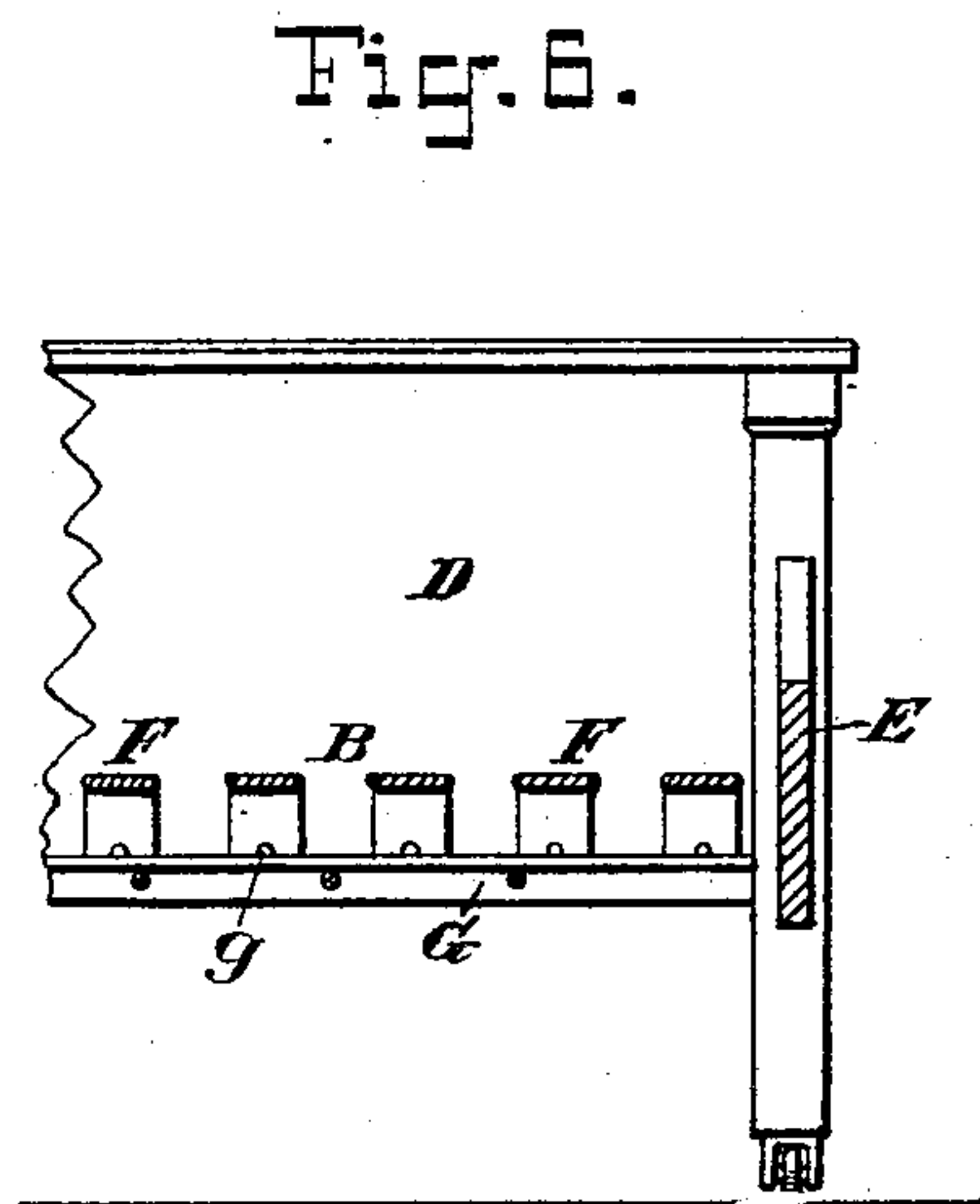
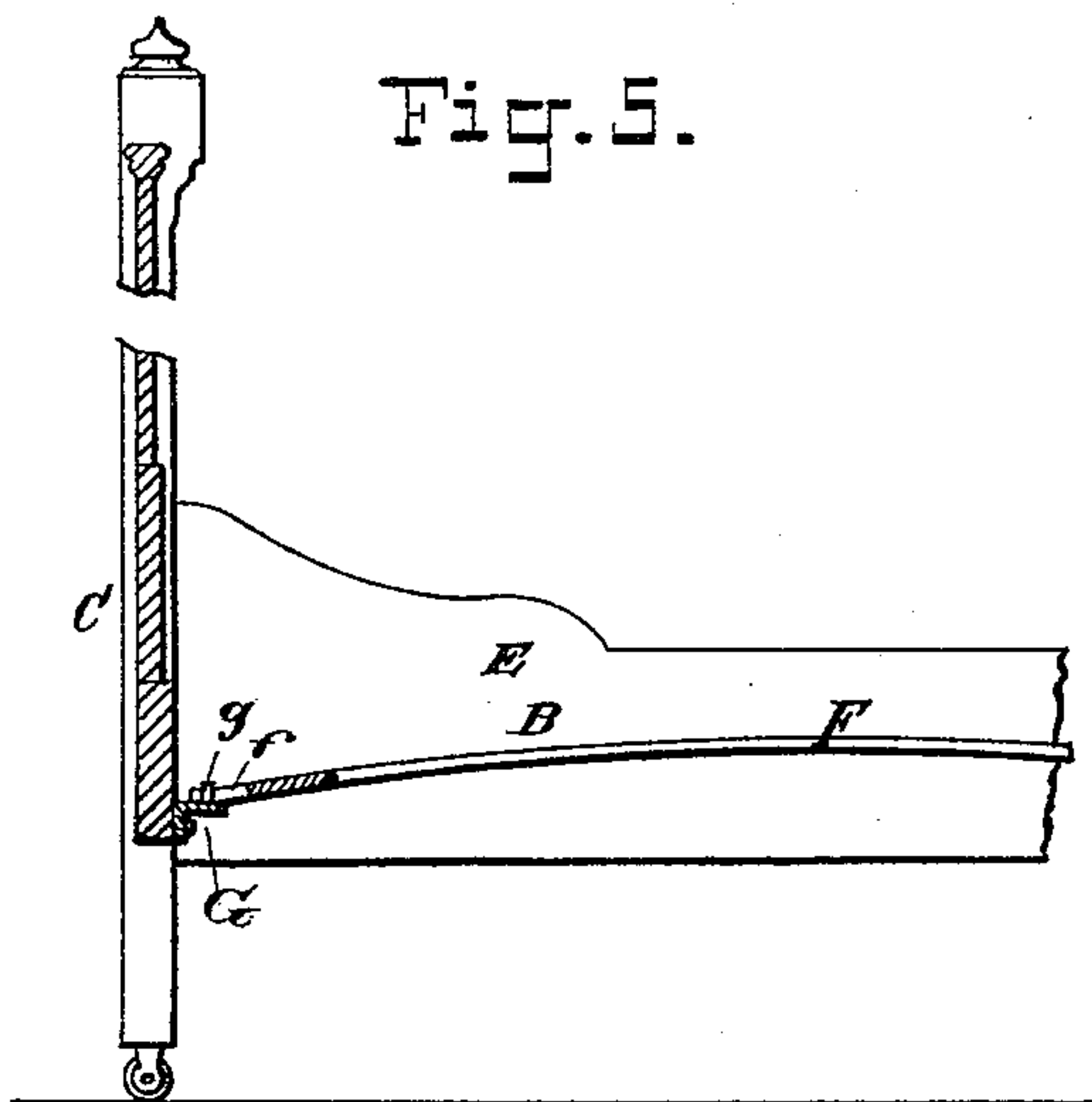
3 Sheets—Sheet 3.

O. FLOHR.

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No. 389,292.

Patented Sept. 11, 1888.



WITNESSES:

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UNITED STATES PATENT OFFICE.

OTTO FLOHR, OF NEWARK, NEW JERSEY.

BED, &c.

SPECIFICATION forming part of Letters Patent No. 389,292, dated September 11, 1888.

Application filed March 8, 1887. Serial No. 230,107. (No model.)

To all whom it may concern:

Be it known that I, OTTO FLOHR, a citizen of the United States, residing at Newark, in the county of Essex, State of New Jersey, have
5 invented certain new and useful Improvements in Beds and other Furniture, of which the following is a specification.

This invention relates to spring bed-bottoms, and has for its object to provide a spring-
10 bed of cheap, simple, and durable construction, which shall be free from the disadvantages inherent in most spring-beds as heretofore constructed.

My invention applies also to chair and sofa
15 bottoms.

To this end I construct a spring bed-bottom of elastic wooden slats, which are cut from the timber with an upward curve or camber, (in contradistinction to being bent to a curve
20 after being cut,) and which are made of such thickness throughout that while affording a considerable degree of elasticity they will not yield so much under the weight of the occupant in use as to be quite straightened out or
25 flattened, so that under any ordinary conditions the middle of the slat will never be caused to sag below its ends. Thus I provide a bed in which the occupant cannot sink into a hollow, as in spring-beds heretofore made.

30 Figure 1 of the accompanying drawings is a perspective view of a bed constructed according to my invention in its preferred form. Fig. 2 is a longitudinal mid-section thereof. Fig. 3 is a vertical transverse section thereof;
35 and Fig. 4 shows one of the spring-slats removed, in plan and side elevation. Figs. 5 and 6 illustrate a modified construction, the former view being a fragmentary longitudinal section and the latter a fragmentary trans-
40 verse section of the bed. Figs. 7 and 8 illustrate my invention as applied to a metallic bedstead, the two views being respectively fragmentary longitudinal and transverse sections, answering, respectively, to Figs. 5 and
45 6. Fig. 9 illustrates a modified construction.

Referring to the several figures, let A designate the bedstead as a whole, and B the spring-bed or bed-bottom. Let C designate the head-board of the bedstead, D the foot-board, and
50 E the side boards or rails thereof. The bedstead may be of any known or suitable con-

struction, its precise construction being immaterial to my invention.

The spring bed-bottom B consists of a series of longitudinal spring slats, F F, with their
55 opposite ends resting on ledges or cross-bars G G at the head and foot of the bed. In my preferred construction, as shown in Figs. 1 to 4, these ledges consist of cross bars or slats extending horizontally across from one of the
60 side rails, E, to the other, and with their ends resting in sockets in cleats or brackets e e, fastened to the side rails. Thus the cross bars or slats G G may be lifted out at will in order
65 to take the bed to pieces.

The spring-slats F F are made of some tough
elastic wood—such as ash, oak, maple, or hickory—and are curved upwardly in their middle portions, so that when pressed down
70 by the weight of the occupant of the bed they will be somewhat straightened, approximating, more or less, a flat horizontal position; but this thickness is such throughout that the middle portion will not be pressed below the
75 ends by the weight of the occupant of the bed, so that the slats shall not sag. Their point of greatest upward projection or convexity should be somewhat nearer the head than the foot, being preferably in the position denoted by
80 the dotted line x x in Figs. 2 and 4. This is in order that the maximum elasticity and resistance of the spring-slats may be in position to receive the maximum weight when in use. The spring-slats are sawed out with a camber
85 of the proper curve, so that the natural grain of the wood is not disturbed and its elasticity is not impaired. The surplus of strength and elasticity of the slats when made of wood of the proper kind and of suitable thickness is
90 such that the slight weakening due to the saw-cut partially crossing the grain of the wood is of no consequence, or the slats may be cut from selected wood, the grain of which has already approximately the proper curve. The
95 slats may be made of varying thickness, if preferred, provided that the thickness is sufficient to prevent the middle of the slat sagging below its ends. I have found by practical
100 tests that an ash slat thus made, of the length of the bed, four inches wide and five-eighths inch thick, and having a camber of two and one-half inches, requires over six hundred

pounds pressure on its convex side to flatten it. In actual use a bed-bottom made of such slats will yield about an inch under the weight of an ordinary person and will never be quite flattened. The slats are sufficiently elastic to make a comfortable bed, but do not yield so much as to let the occupant sink into a hollow, as is the case with most spring bed-bottoms.

The ends of the slats rest upon the ledges or bars G G in such manner that they move thereon, or at least on one of them, as the slats straighten more or less under the superincumbent pressure. They require at the same time to be so fastened or guided that they are not liable to become displaced. Guides or connections for this purpose may be constructed or applied in various ways. The construction shown, and which I prefer, consists of slots or notches *f f*, entering the ends of the slats, and engaged by pins or projections *g g*, fixed to the ledges or bars G G. By this simple means the slats are guided laterally without in the least interfering with their free movement in longitudinal direction. The pins *g g* may be wooden pins, driven into the bar G, or they may be screws entered therein from beneath, or they may be otherwise applied.

The spring-bed constructed according to my invention is reduced to the utmost simplicity of parts, is easily taken apart and put together, is easily cleaned, and in use affords as great a degree of elasticity as is desirable or essential for comfort. The several spring-slats yield independently of one another, which is practically advantageous.

Figs. 5 and 6 show a modified construction, wherein the ledges G G are made of angle-iron screwed or otherwise fastened to the head and foot boards of the bedstead.

In applying my invention to a metallic bedstead I make the cross-bars or ledges G G of metal and bend their ends upward and outward to form hooks, one of which is shown at *h* in Fig. 8, and which hook over the side rails, E, of the bedstead close to the head and foot boards or frames thereof.

I am aware that spring bed-bottoms have been made with comparatively rigid slats resting upon springs at their ends or elsewhere, and also that flexible longitudinal slats or strips have been used strained by spring-pressure, and deflected downward by the superincumbent weight when the bed is used. I make no claim to any such construction. It is essential to my invention that the elasticity shall reside in the slats themselves, and that the latter shall be made with a natural upward curve or camber, so that when relieved of pressure the natural grain of the wood is not distorted, and when pressed down in use they straighten out more or less, thereby forcing the grain of the wood into a downward curve as the slats themselves approach a straight line.

Fig. 9 shows my invention as applied to a chair, the view being a transverse section. In this use the ends of the slats rest on the bars G, which are fastened to the opposite frames of the chair.

In applying my invention to sofas the best results are obtained by arranging the slats longitudinally and fastening the bars G to the end frames.

What I claim as my invention, and desire to secure by Letters Patent, is—

A spring-bottom for beds or other furniture, consisting of slats of elastic wood cut from the timber with a camber or upward swell (in contradistinction to being bent after cutting out) and of such thickness throughout that the middle will resist being pressed below the ends by the weight of the occupant of the bed, whereby all sagging of the slats is avoided, combined with supports for the opposite ends of said slats, substantially as set forth.

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

OTTO FLOHR.

Witnesses:

GEORGE H. FRASER,
PASCHAL J. FERRARA.