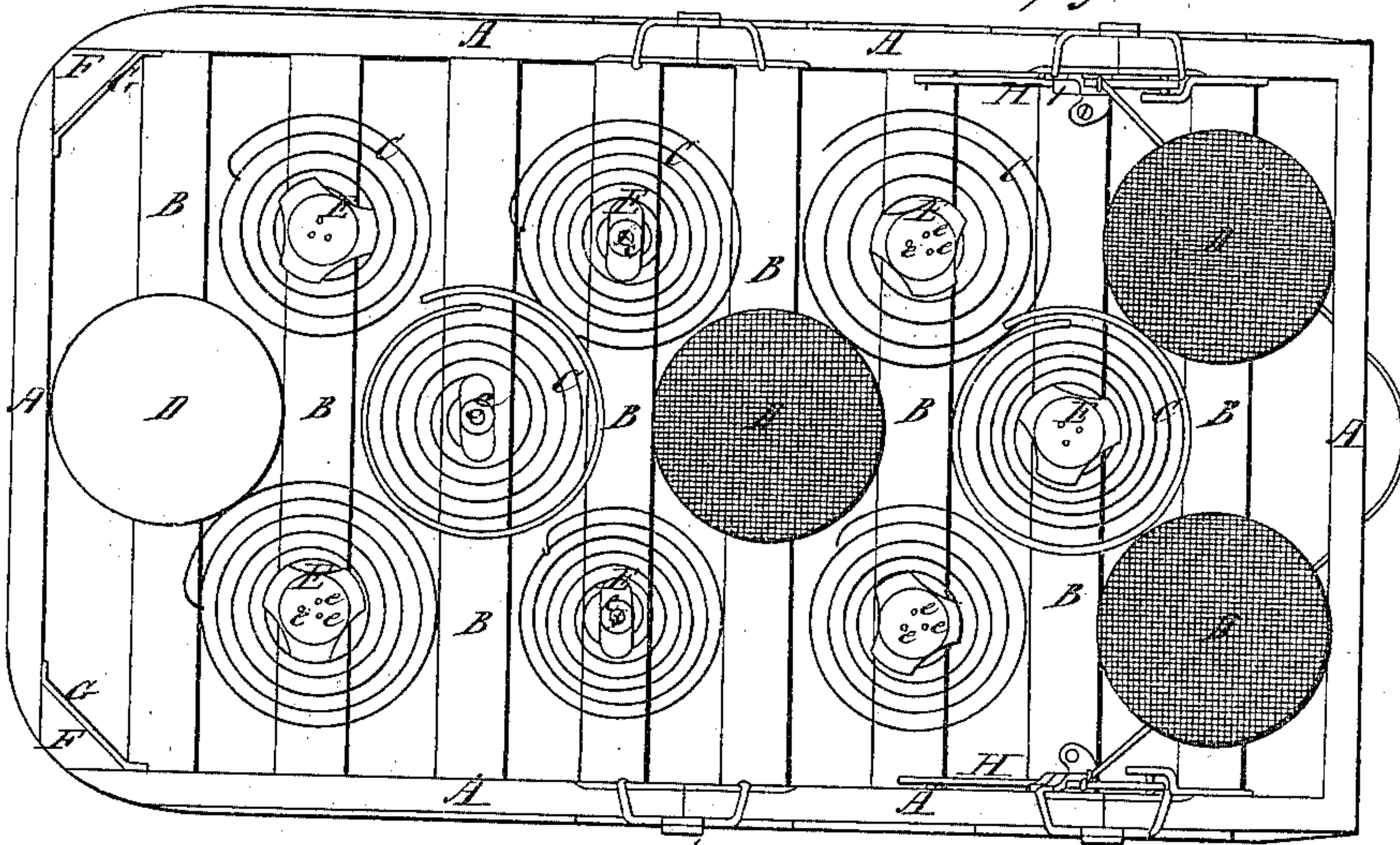


*S. P. Hittle.*  
*Bed Bottom.*

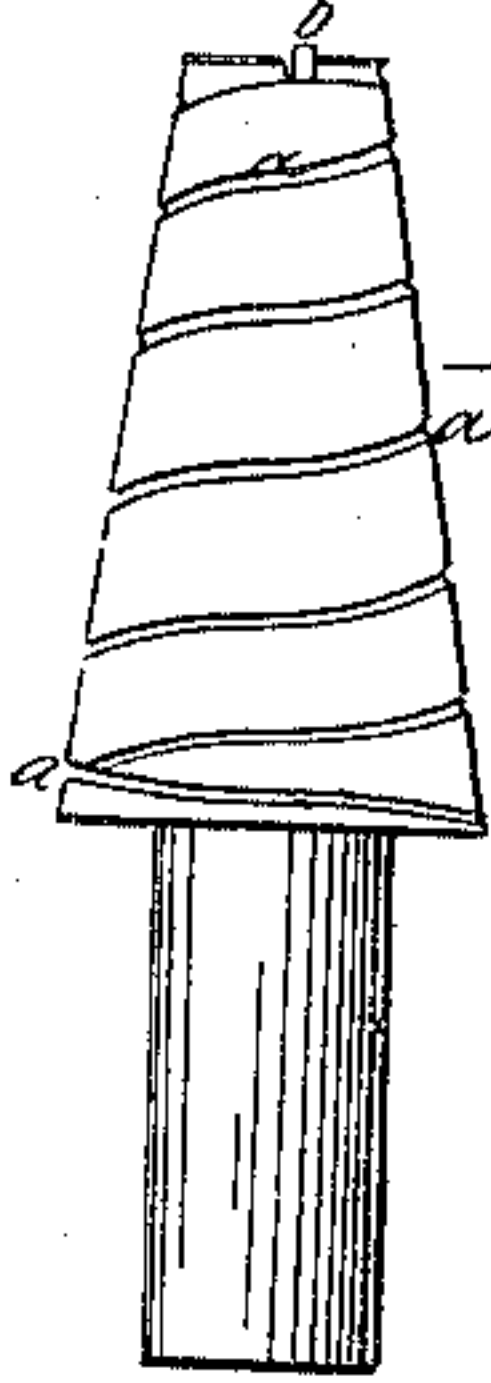
*No. 97,521.*

*Patented Dec. 7, 1869.*

*Fig. 1.*



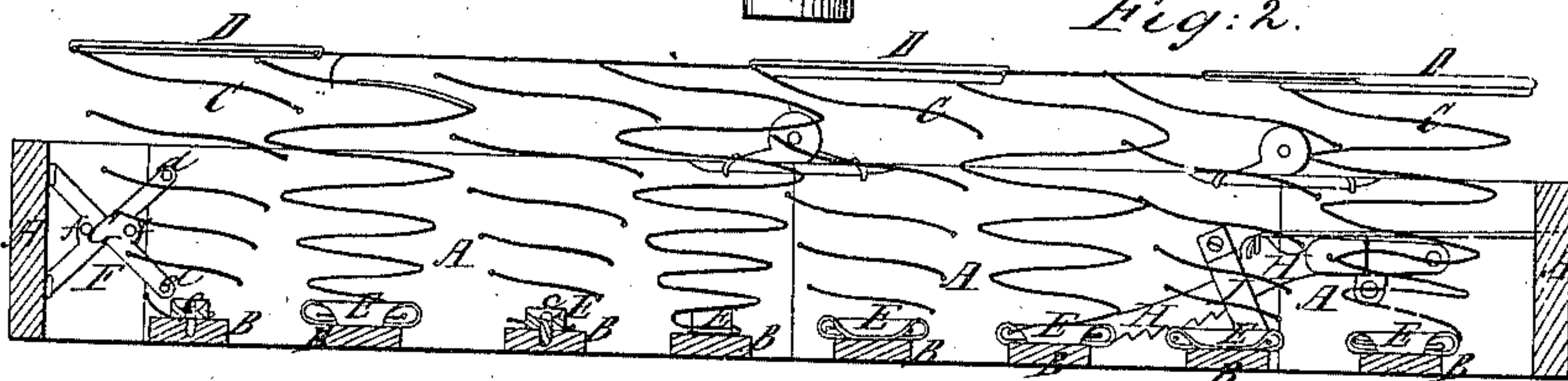
*Fig. 3.*



*Fig. 4.*



*Fig. 2.*



*Witnesses*

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*Inventor*

*Samuel P. Hittle*  
*By Thos. P. How*  
*Atty*  
*per J. B. J. L.*



# United States Patent Office.

SAMUEL P. KITTLE, OF NEWARK, NEW JERSEY.

Letters Patent No. 97,521, dated December 7, 1869.

## IMPROVED SPRING-BED.

The Schedule referred to in these Letters Patent and making part of the same.

Specification of certain Improvements in Spring-Beds, &c., and in an instrument used in the construction of the same, invented by SAMUEL P. KITTLE, of Newark, in the county of Essex, and State of New Jersey.

### *Nature and Objects of the said Invention.*

One of the principal features of this invention has relation to the manner of constructing the coiled springs, which support the upper portion of the bed, and to the manner of attaching and securing the said springs to the slats of the frame or bedstead, in such a manner, that while, by such attachment, they shall be rendered firm and secure, they shall also be capable of being removed from the said slats with ease and facility.

Another feature of this invention has relation to the manner of securing the corners of the frame of the bed, and consists in the device for that purpose, which is hereinafter described.

### *Description of the Accompanying Drawings.*

Figure 1 is a plan of a spring-bed, showing the principal features of my said improvements.

Figure 2 is a vertical longitudinal section of the same.

Figure 3 is a side elevation of the former for making the springs.

Figure 4 is a vertical section of one of the buttons, by which the springs are secured in place.

### *General Description.*

A A is the frame of the bed, and B B are the slats which support the springs. In most respects, these are constructed in the usual manner, and the side pieces of the frame are represented in the drawing as being hinged near the head of the bed, so as to allow the head portion of the bed to be elevated, and also as hinged at a point at or near the middle, to allow said frame to be folded up for handling or transportation.

C C are the springs, which are what are known as conical or cup-springs, spirally coiled in the form of a truncated cone, the smaller end of the coil resting upon and being secured to the slats B. These springs are formed or laid with a circular turn at the bottom or small end, at right angles to the access of the spring, instead of being made in a spiral form; and the top of the spring, I also prefer to make in nearly the same form. This is done upon a former, shown in fig. 3, having a groove, *a a*, formed around it, for the reception and guidance of the wire in the formation of the spring, which groove, at the small end of the former, makes a complete turn around the former, at right angles to the former, instead of spirally, as on the middle portion of the former.

*b* is a pin, to secure the end of the wire preparatory to the commencement of the formation of the spring. The said spring is formed at the top, nearly in the same way as at the bottom, and for this purpose the groove is carried around the large end of the former at nearly right angles.

In some cases, when the springs are not to be covered, I prefer to turn down the ends of the springs at the top, and attach them to the coil below, by a loop formed in the wire, as shown in figs. 1 and 2. But to more fully protect the mattress or bedding, which may be placed on the tops of the springs, I make covers D, having their edges gathered in, so as to either embrace or surround the wire, and thus form caps upon the springs, which shall protect the mattress or bedding which may be placed upon them. These covers D may be, and should be so made that they can be taken off from the tops of the springs and packed for transportation, and again replaced when the parts are put together.

The springs, constructed as I have described, can also be packed, one within another, and thus made to occupy but very little space when packed for transportation.

I attach these springs to the slats by means of the buttons E, which are attached, by screws or nails, or any other convenient means, to the slats. In the drawings, a portion of these buttons is represented as being very considerably in the form of an ordinary door-button, having, however, a central portion or hub, very nearly fitting within the lower coil of the spring, sufficient space being left between the end portions and the slats to admit the lower coil of the spring under them, and around the central hub, above mentioned. These buttons are represented in the drawings as being secured to the slats by a single screw, *c*, each extending through the centre of the button and into the slat.

Another form of button, represented in the drawings, is made with three projections or portions, extending outward over the lower coil of the spring when in place, and those buttons are represented as being secured to the slats by three small nails, *e e e*.

When the springs and buttons are constructed as I have described, the buttons may be first attached to the slats, and the springs afterward attached, by running the lower coil of each spring around under the outwardly-projecting portions or ends of the button, which is to secure it in place, and may be removed by a retrograde movement of the same nature, whenever it may be desirable to remove the springs for transportation, or it may be desirable to remove a defective spring and supply its place by another.

When the construction of the buttons which I have last described is adopted, they are best made of sheet-



metal, and the extreme ends of the outwardly-projecting portions may be returned under that portion of said projections which is nearer the centre, so as to form a sort of loop for the reception of the wire, as shown.

Either of the buttons I have described secures the springs firmly in place.

The lower coil of the spring may also be made slightly oblong or oval in its form, so that when it is put in place, and turned around into a certain position, it shall bind with greater tenacity upon the button, if it should be found by practice that in any case the springs show a liability to work loose, from the casualties of use. I have also contemplated making these springs with a complete horizontal turn at the bottom, as before described, and turning the end of the wire radially inward and across the centre of the coil, or nearly so, and then securing them by a disk secured to the slats, which disk shall fit, or nearly fit within the lower coil of the spring, and shall also have a groove across its entire surface, to receive the radial end, above mentioned, between it and the slat. Or instead of a disk, a straight piece of metal, about the length of the diameter of the lower coil of the spring, may answer the purpose.

In constructing the frame A, I secure the corners thereof in part by angle-blocks F and braces G, which latter are secured to the frame by the nails or screws *d*, as shown, and are also secured to the angle-blocks F by means of two or more points, screws, or nails *f f*, to each brace, as shown. I prefer screws for both these purposes.

It is important that there should be, at least, two of the points, screws, or nails *f f*, extending through or from each brace G, into the angle-block F, as the block is liable to turn on a single screw, when only one is used for that purpose.

A graduated ratchet, H, is attached to the head portion or section of the frame, to enable the user to raise the head of the bed, when desired, and this ratchet H is so arranged as to fall upon and rest against the stop or catch I for that purpose, a rebate being formed in said catch I, which allows the ratchet H to pass between a portion of it and the frame, as

shown, which not only secures the said ratchet in position, but also gives greater strength to the frame.

To further strengthen the frame at this point, I make the catch I with an elbow or foot-piece, which rests upon the slat below, as shown, and secure this catch and brace I by a screw at the top, extending into the frame, and another screw or nail or point at the bottom, extending into the slat, as shown.

It is obvious that some of these improvements may be used without the others, if desired, and especially the springs and buttons described, which may be packed in small compass and shipped at trifling cost to any part of the country, to be applied, by any person of ordinary intelligence, to the slats of a common slatted bedstead, and they may be also accompanied by the covers D, or not, as desired, which latter may be sent separated from the springs, and also packed in a very small compass, or they may be even packed within the springs. And it is obvious that a portion, at least, of these improvements is equally applicable to sofas, lounges, &c., and may be regarded as coming within the scope of this invention.

#### Claims.

I claim, as my invention—

1. A spiral spring, C, made in the form of a truncated cone, the large end of which is adapted to receive a flexible cover or bed, and the small end a securing-button, in combination with said cover or bed and a securing-button, as and for the purpose specified.
2. The combination, with the frame A, of the angle-blocks F and the braces G, when said braces are secured to the angle-blocks by two or more points or screws, so as to prevent the angle-block from turning upon the brace, as hereinbefore set forth.
3. The construction of the catch I, in such a manner that it shall not only form a stop for the ratchet H, but shall also serve as a brace to support the frame against lateral pressure, as hereinbefore set forth.

S. P. KITTLE.

Witnesses:

I. H. HOW,  
W. A. DONNELLY.