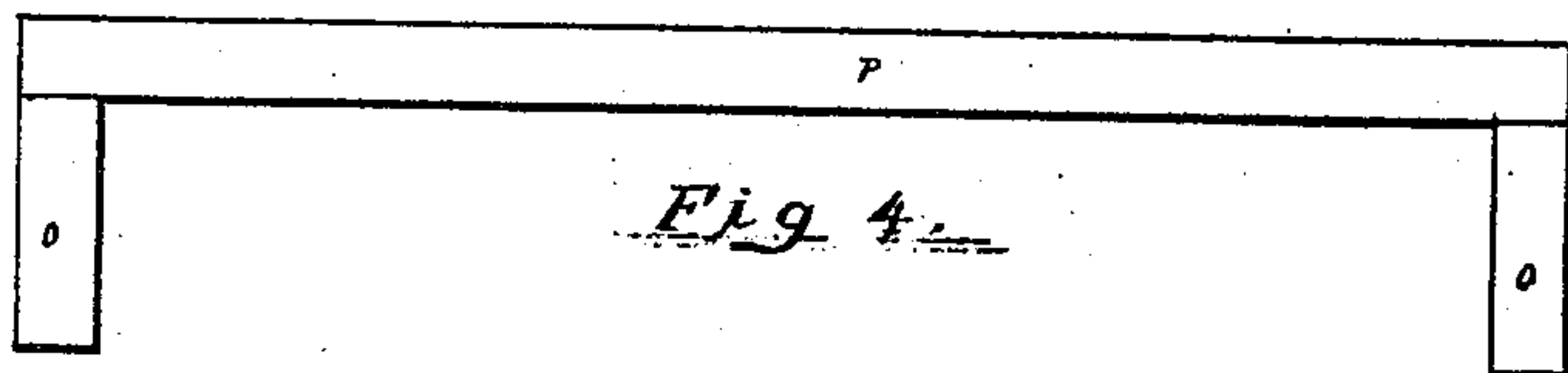
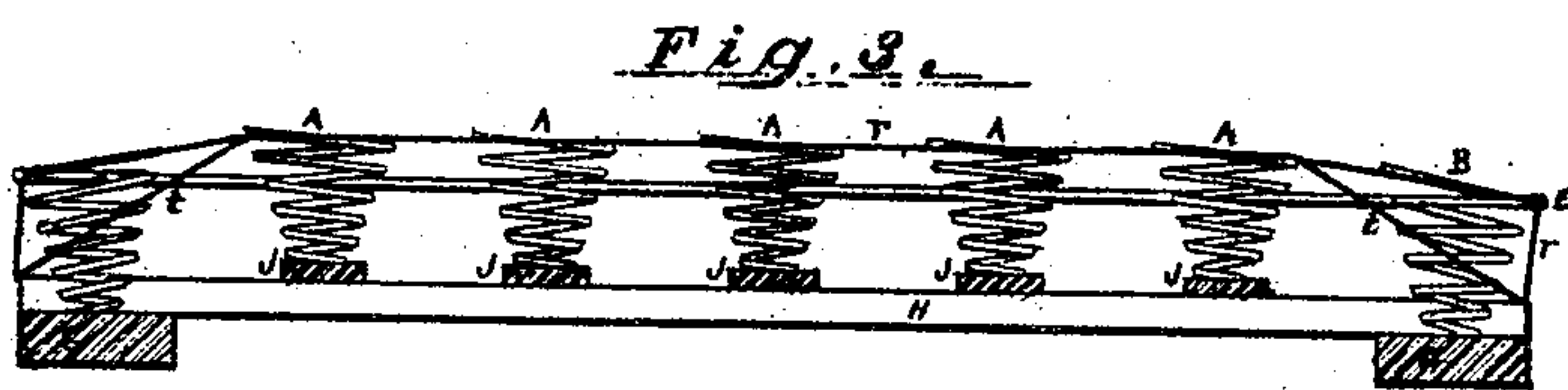
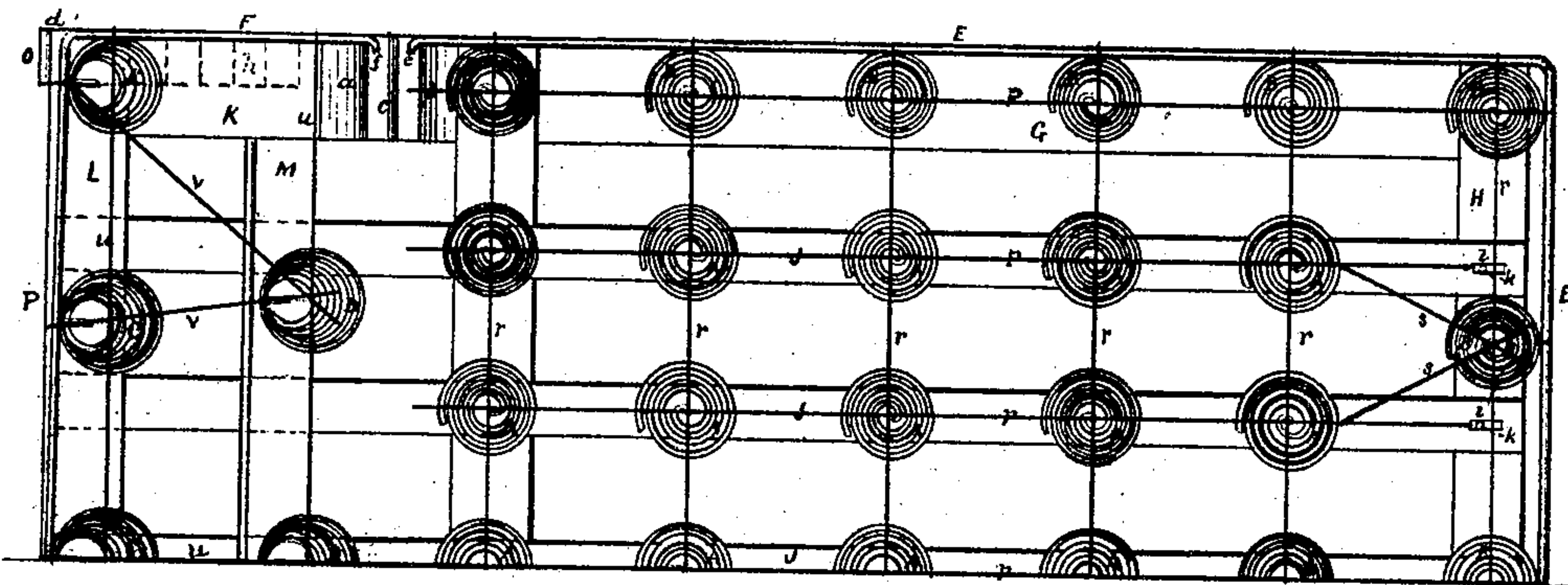
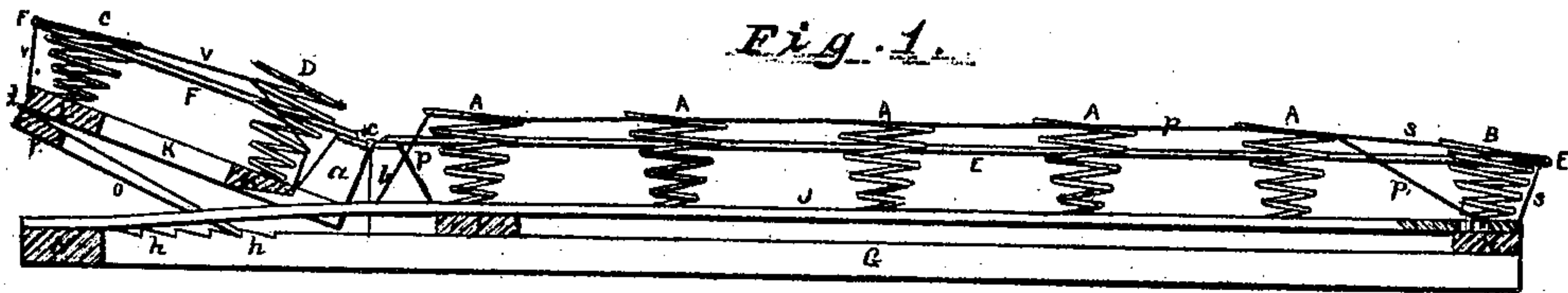


W. Haworth,

Bed Bottom.

No. 90,840.

Patented June 1, 1869.



Ruth K. Abbott
D. Hammond } WITNESSES

W^m Haworth INVENTOR.
BY Job Abbott ATTORNEY.

United States Patent Office.

WILLIAM HAWORTH, OF CANTON, OHIO.

Letters Patent No. 90,840, dated June 1, 1869.

IMPROVED SPRING-BED BOTTOM

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

To all whom it may concern :

Be it known that I, WILLIAM HAWORTH, of Canton, in the county of Stark, and State of Ohio, have invented new and useful Improvements in Spring-Beds; and I do hereby declare that the following is a full, clear, and exact description of my invention, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon, of which drawings—

Figure 1 is a sectional elevation of my improved spring-bed.

Figure 2 is a half plan of the same.

Figure 3 is a cross-section of the same.

Figure 4 is an elevation of the frame-pawl.

My invention relates to certain improvements in the construction of spring-beds.

The nature of my invention consists in the combination of an elastic-wire rim with a set of conical spiral springs, arranged with their smaller ends downwards, and resting upon a set of elastic slats, said spiral springs and elastic slats being so constructed as to unite their elastic movements in allowing a movement of the bed-surface, and said elastic rim forming a line of elastic resistance to the tension of the cords, uniting the tops of the spiral springs, whereby I obtain a very light, elastic, and cheap spring-bed.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The main frame of my bed is composed of the side-pieces G G and cross-pieces H N, which form a frame of a size a little less than that of the interior of the bedstead for which the bed is designed, and which rest on blocks, or cross-slats arranged in said bedstead in an ordinary manner.

The cross-bar I is secured to the side-pieces G G, as shown, and the elastic slats J J are laid over this cross-bar I, their upper ends being secured by nails, or screws to the upper frame-piece N, while their lower ends rest on the lower frame-piece H, where they are prevented from moving sideways, and, at the same time, are allowed an end motion to admit of their bending, by means of the pin k in frame-piece H, and slot l in the slats J, as shown in figs. 1 and 2.

On the frame-pieces G H G, are arranged, on the edge, springs B B, as shown, while the centre springs A A are secured to the elastic slats J J, as shown in figs. 1, 2, and 3.

These springs A B are of the conical form shown, instead of having the double conical form common to most spring-beds, and are placed with their small ends downward, thus bringing the weight of the person on to the large and most elastic part of the spring first, and insuring the easy action of the spring, without that noise caused by the coils of the spring coming down on the slats, which would occur in using a half

spring with the small end upward in this class of beds.

The elastic slats J J are so constructed with reference to the springs A A, as that they shall be of such cross-section as will allow of their springing freely whenever the weight of an ordinary person is brought to bear on the springs A A, from which it is readily seen that the elasticity of the bed is due, first, to the elasticity of the springs A, and second, to that of the slats J, and that, by this means, the same surface-elasticity for the bed can be had much cheaper than where the double conical-formed bed-springs are used, as the spring-slat J answers both as the equivalent of the lower half of the double conical spring, and also as the slat, or its equivalent, for support of spring, which was necessary in the old mode of constructing beds with double conical springs.

The elastic wire rim E extends around the top of the outside springs B B, and has its ends e secured to the blocks b on the frame-pieces G, as shown.

The cording p r s, which unites the several springs, is represented by red lines in figs. 1, 2, and 3, from which it is readily seen that the longitudinal cords p start from the slats J, near the cross-bar I, and from thence are knotted into the springs A A, down to the end of the bed, where they are united either to the slats J, or lower frame-piece H, or wire rim E, as found desirable.

The cords s s unite the springs A A and B, wire rim E, and frame-piece H, and the cords p serve as braces to aid in keeping the springs in their correct position.

The transverse cords r run from the frame-piece G to the top of side spring B, where they are knotted to hold the spring B and rim E together, and from there they are knotted into the springs A A across the bed, to the opposite spring B, where they unite said spring and rim B, and are then secured to frame-piece G, as seen in fig. 3.

The cords t t serve as braces to check the side movement of the springs B A A B.

It is readily seen that as the rim E is made of elastic wire, it will give easily, and allow the springs A A to play freely in any position, which would not be the case were the cords r r attached to a rigid rim, and that it allows a free motion to the side springs B, which makes the edge of the bed very elastic, and that the use of this rim E, of light wire, renders the whole bed much cheaper and lighter, as it dispenses with the necessity of any side upright box-pieces to the bed, and that this dispensing with the side box-pieces allows the springs A B to close up their whole length, if need be, thus obtaining the whole elastic height of the springs, and avoiding the length of spring necessary in the old forms of spring-beds.

The head part of my bed is composed of the side-pieces K K, and cross-pieces L and M, said cross-

piece M being bevelled off on the under side, as shown in fig. 1, so as to clear the slats J J, and allow the head part to come down to nearly a parallel position with respect to the bed-frame G G, when desired.

The blocks *a a* are secured to the frame-pieces K K, as shown, and the hinges *c c* pivot the head part to the block *b* on the main frame, as shown in figs. 1 and 2.

The edge springs C C and centre springs D D are of the same form as the springs A A and B, and arranged, with their small ends downward, on the pieces L and M, as shown.

The elastic wire rim F has its ends *f f* secured to the blocks *a a*, and is secured to the edge springs C C by the cords *u* and *v*, which are arranged, with respect to the springs C and D, and frame K L M K, as indicated by red lines in figs. 1 and 2.

The frame-pawl O P O is composed of the cross-bar P, which is hinged by hinges *d d* to the frame L, and the pawls O O, which engage with notches *h h*, cut in the main frame-pieces G G, from which it is readily seen that the head part can be supported at any desired angle, the peculiar utility of having the pawls O O united by a cross-bar, P, consisting in the fact, that by this arrangement, both pawls can be operated at the same time from one side of the bed, so that any desired adjustment of the head part can be easily effected.

When the head part is to be let down, the frame-pawl O P O is turned up under the frame-pieces K K, and serves as a support for the head part on the main frame G N G.

This bed may be covered with canvas, or other suitable material, if desired, the edges of said material being secured to the frame-pieces G H G and K L K, in an obvious manner; or, the mattress, or other bedding, may be laid directly on the tops of the springs, as may be found desirable.

It is evident that the same system of combining the edge springs and cords with an elastic wire rim may be applied to the construction of sofas, chairs, and

other articles constructed with spring-bottoms, and on which an elastic edge, whether straight or curved, would be desirable.

I do not claim as new the use of conical springs in the construction of spring-beds, whether the large or small ends are placed downward; nor do I claim the placing of conical springs on slats of less elasticity than that by which they are enabled to take the place of the lower half of the double conical spring in spring-bed construction; nor do I claim the use of an elastic wire rim, except in combination with conical spiral springs and elastic slats, constructed and arranged as herein described; but having thus fully described my invention,

What I claim therein as new, and desire to secure by Letters Patent, is—

1. The combination of the elastic wire rim E, conical springs B B, A A, spring-slats J J, and cords *p r*, the several parts being constructed, combined, and arranged substantially as and for the purpose herein specified.

2. The improved spring-bed, herein described, composed of the side frame-pieces G G, with notches *h h*, upper-end frame-piece N, with heads of slats J J secured thereto, cross-bar I, spring-slats J J with slots *l* therein, lower-end frame-piece H with pins *k k* therein, edge springs B B, centre springs A A, elastic wire rim E E E, cording *p p, r r, t t*, elevating hinge-blocks *a a, b b*, hinges *c c*, head-frame K L M K with springs C C, D D, elastic rim F F, cording *u v*, and frame-pawl O P O with axial hinges *d d*, the several parts being constructed, combined, and arranged in the manner and for the purposes herein specified.

As evidence that I claim the foregoing, I have hereunto set my hand, in the presence of two witnesses, this 18th day of January, A. D. 1869:

WM. HAWORTH.

Witnesses:

RUTH K. ABBOTT,
JOB ABBOTT.