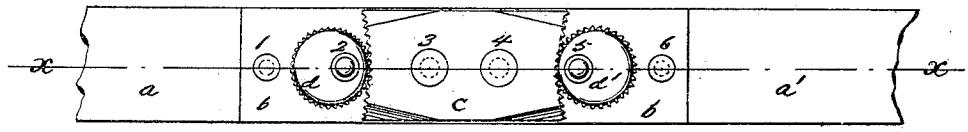
W. POMEROY.

Improvement in Truss-Springs.

No. 131,560. Patented Sep. 24, 1872.

Fig. 1



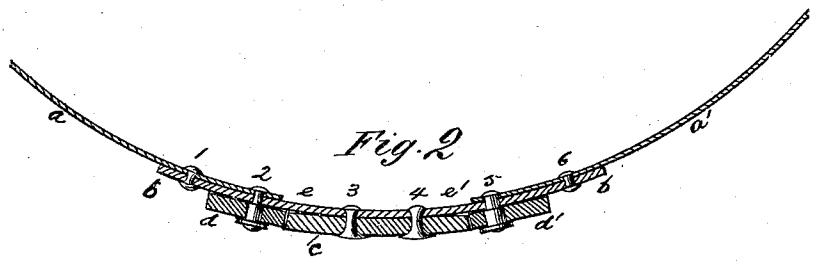


Fig. 2

Fig. 3

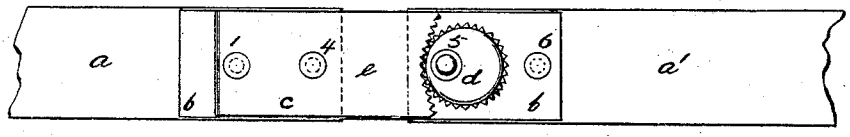
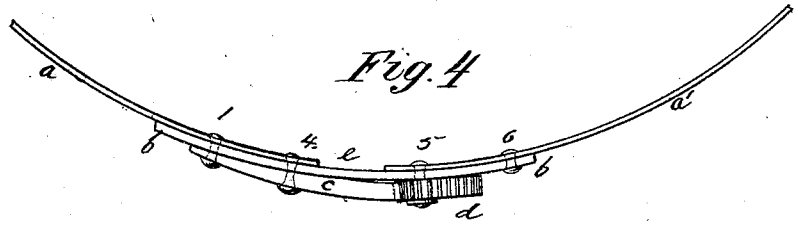


Fig. 4



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM POMEROY, OF NEW YORK, N. Y.

IMPROVEMENT IN TRUSS-SPRINGS.

Specification forming part of Letters Patent No. **131,560**, dated September 24, 1872.

To all whom it may concern:

Be it known that I, WILLIAM POMEROY, of the city, county, and State of New York, have invented an Improvement in the Construction of Springs for Trusses and other surgical appliances, of which the following is a specification:

My invention relates to the adjustment of the pressure of the spring of a truss or other surgical appliance so that more or less force may be brought to bear at the end of the spring by increasing or diminishing its curvature, and setting it at any required curve without affecting its general elasticity and power of resisting a strain, by the same means enabling it to be fitted to persons of different shapes.

Endeavors have been made to effect this adjustment by making the springs soft enough to allow of their being bent, in which case, however, the elasticity of the spring is to a great extent lost, and its resisting power often diminished beyond the degree necessary to make it useful. A hinge near the middle of the curve, with some mechanism to prevent it from opening outward when adjusted to any particular curve of the spring, has also been used, and such a combination is the subject of a patent granted to me September 17, 1867, No. 69,020, part of which combination I make use of in the present invention. I have found, however, in practice, that the hinge is objectionable, requiring careful construction with expensive tools by a skilled mechanic to insure its strength and accurate working; also, giving to the spring the appearance of being broken and of weakness at that point, which excites a prejudice against it in the mind of the purchaser; also, when the truss is removed from the body the parts of the spring fall together, and the mechanism on the back of the spring is liable to become deranged from its proper adjustment. In the case of the eccentric wheel used in the patent referred to, if it chance to be a little loose on its pivot, then, when released from contact with the block, by the falling together of the parts of the spring it is very liable to be moved around and the proper adjustment is lost, impairing the usefulness of the instrument. If it should be desired to bend the spring at more than one point, and two or more hinges be used, all the above objections are aggravated and the contrivance becomes bungling and expensive.

To overcome these objections and simplify and cheapen the construction of the spring are the objects of this invention, which consists in the application of a shoulder and adjustable bearing to the outer surface of a spring, which is made sufficiently flexible at the point or points of such application to bend without danger of breaking.

In the accompanying drawing, Figure 1 is a plan view of a portion of the spring, showing the mode of construction when it is desired to bend the spring at two points near to each other. Fig. 2 is a section of the same through the line *x x* of Fig. 1. Figs. 3 and 4 are similar plan and sectional views, showing the construction when the spring is to be bent at one point only.

Similar parts in the several views are designated by like letters and figures.

For the purpose in view the spring may be formed in two parts, *a a'*, connected at the portion of the curve where the adjustment is to be effected, which will ordinarily be at or near the middle by a short piece of metal sufficiently flexible and tough to allow of its being bent without danger of breaking, but at the same time rigid enough to retain its shape and require considerable force to bend it. Untempered steel, hard brass, and various compositions of copper, zinc, and other metals well known in the arts may be used for this purpose. The block *c* is securely riveted to the middle of this short piece, which is itself riveted at each end to the other parts of the spring, thus connecting them, and, together with them, forming a continuous spring capable of being bent at the spaces *e e'* between the rivets numbered 2 and 3 and between those numbered 4 and 5. The block *c* is made slightly concave at each end, and provided with notches to fit the serrated edges of the eccentrics *d d'*, which are pivoted on the rivets 2 and 5, the whole being so arranged that when the spring is opened out to the largest curve desired the eccentrics shall bear with their shortest radiuses against the ends of the block. If, now, the spring is bent at the spaces *e e'* the eccentrics may be turned so as to present a longer radius toward the block or shoulder, preventing the return of the spring to its former curve. The

serrated edges of the block and eccentric fitting into each other prevent the latter from turning on its pivot, and when set for any curve the rigidity of the connecting-strip *b* precludes any liability of the wheel being released from the shoulder and turned by accident from its adjustment, as might be the case were a hinge used at this point.

I prefer to provide for bending the spring at two or more points, as the regularity of the curve can thus be better maintained; but if it is desired to bend it at one place only, the eccentric may be applied at one end of the block, the other end being riveted, together with the connecting-strip *b*, directly to the other arm of the spring, as shown in Figs. 3 and 4.

It is to be observed that the connecting-strip should be fastened on the outer surface or back of the spring, and not on the inside, and should be curved to correspond with the general curve of the spring. If the spring is sufficiently flexible it may be made in one piece, and the block and wheels riveted directly to it at the proper points. A spring of material less rigid than tempered steel may often be thus used to advantage, as the space occupied by the block and wheels will be so much stiffened that such a spring may thus be used in cases for which otherwise it would not be available.

I claim as my invention—

As a surgical appliance, a spring sufficiently flexible at one or more points to be bent and provided at such point or points with a block and eccentric by which it may be held at the curve to which it is set, substantially as shown, and for the purpose set forth.

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Witnesses:

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