

D. J. Cooper,

Truss.

No. 95,432.

Patented Oct. 5. 1869.

Fig. 1.

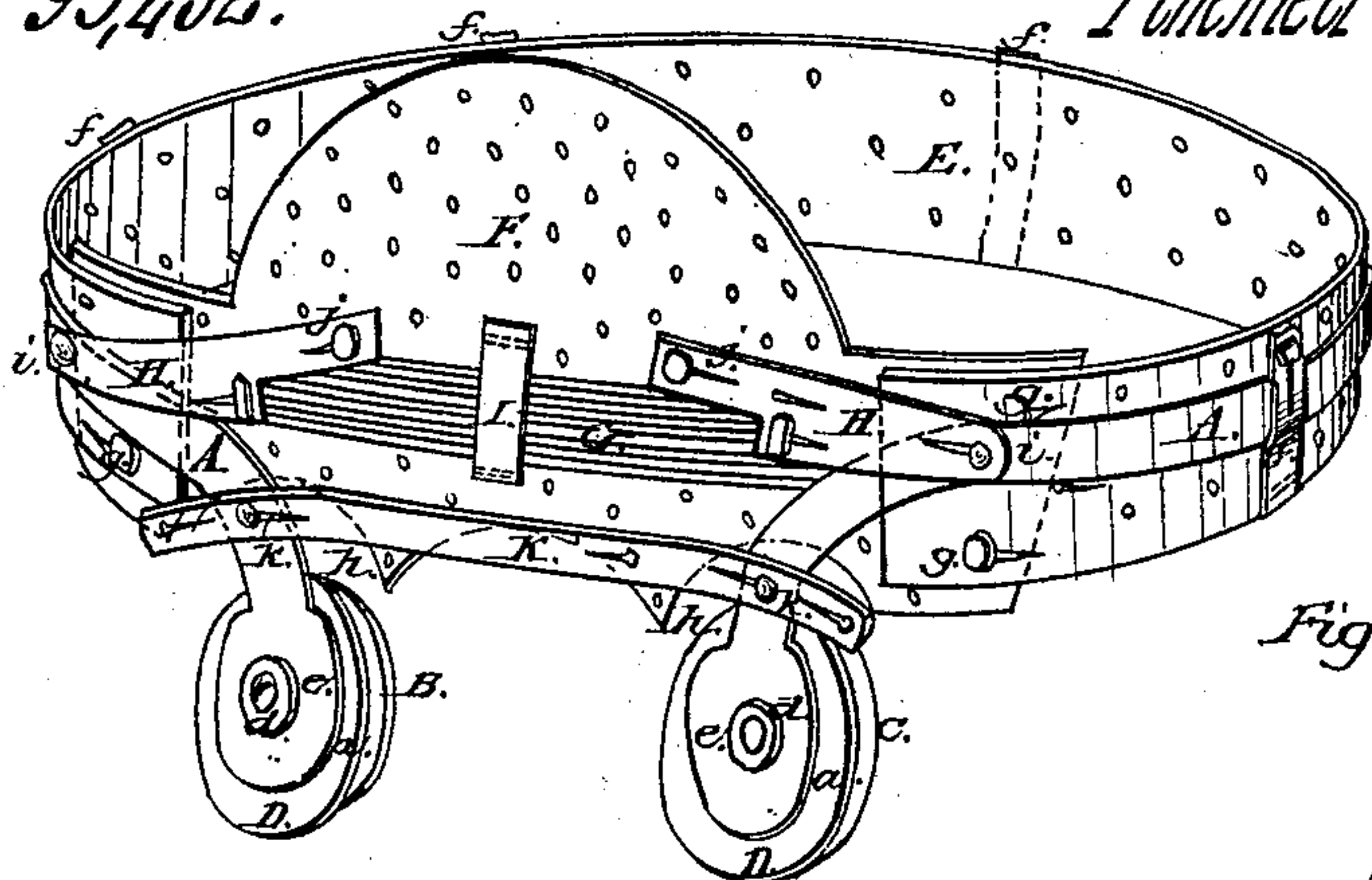


Fig. 7.

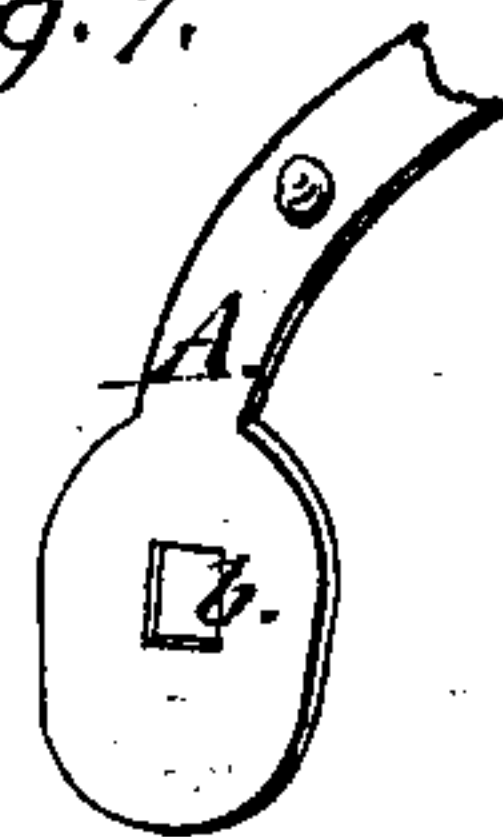


Fig. 2.

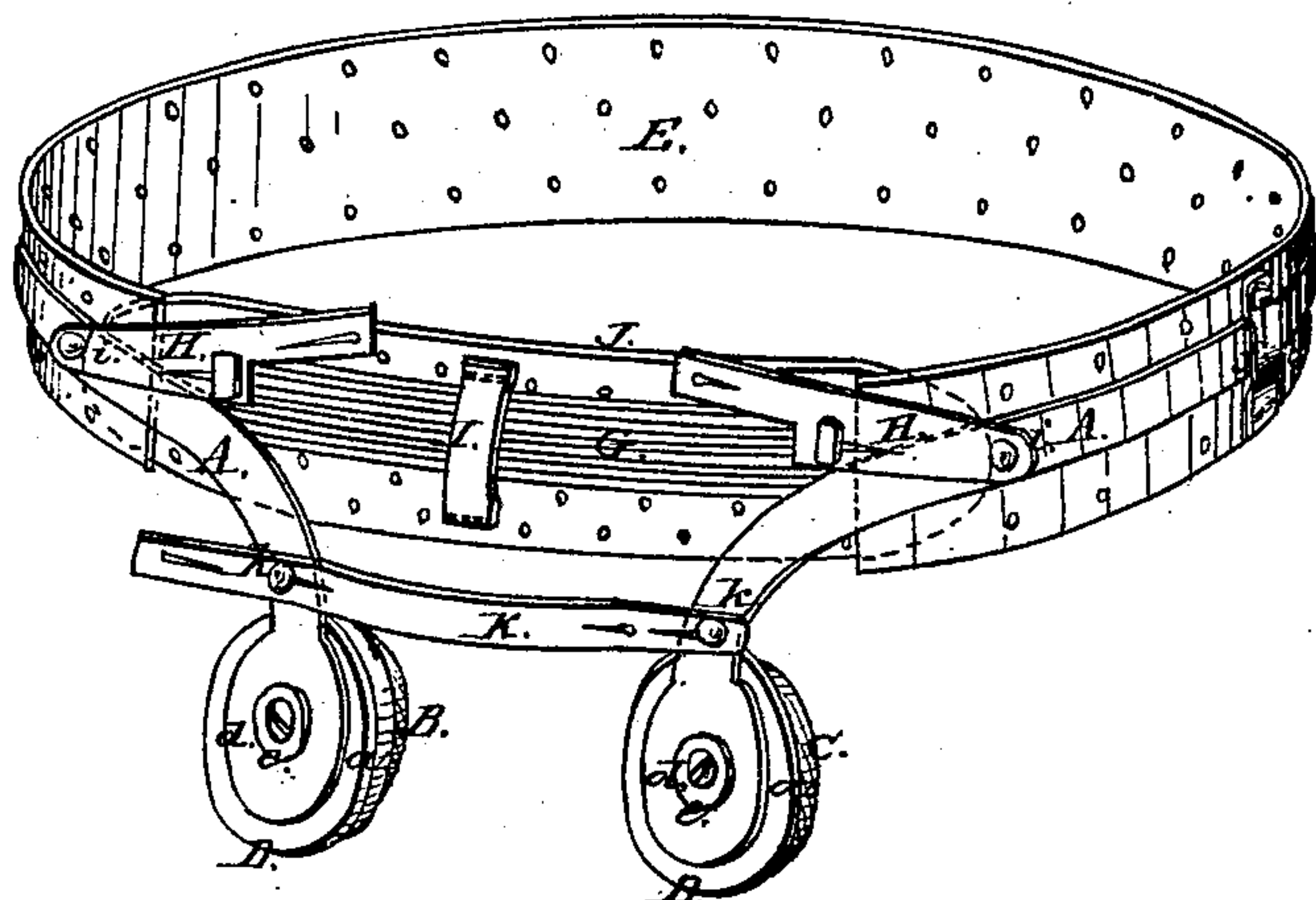


Fig. 3.

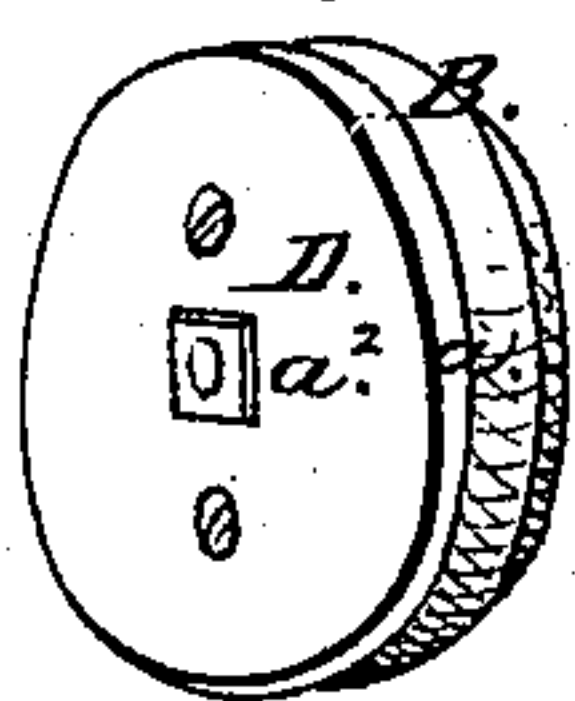


Fig. 4.

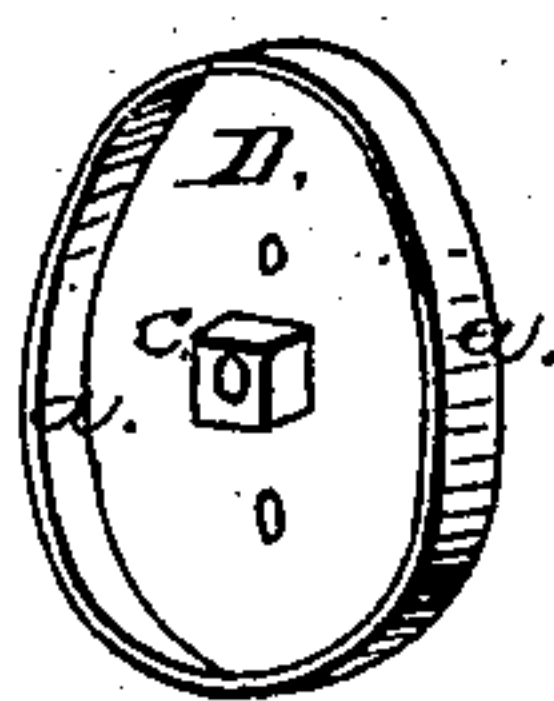


Fig. 5.

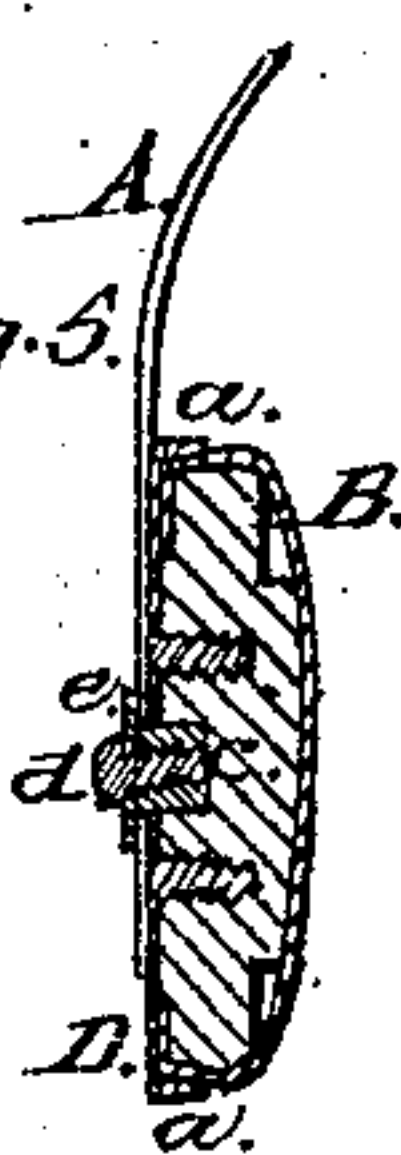
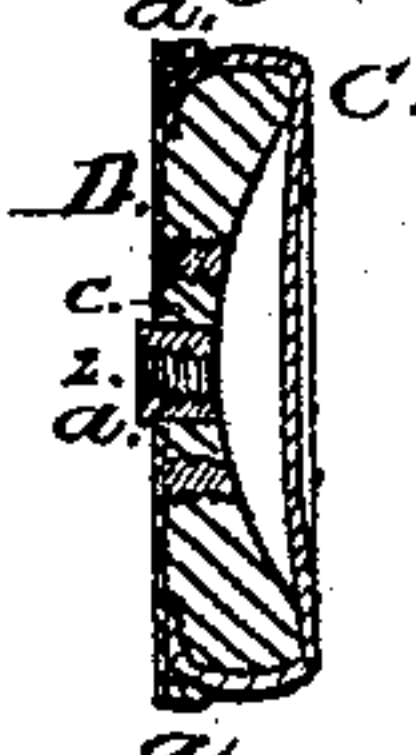


Fig. 6.



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United States Patent Office.

DAVID J. COOPER, OF NEW ORLEANS, LOUISIANA.

Letters Patent No. 95,432, dated October 5, 1869.

IMPROVED TRUSS AND SUPPORTER.

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, DAVID J. COOPER, M. D., of New Orleans, in the parish of Orleans, and State of Louisiana, have invented certain new and useful Improvements in Hernia-Trusses; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 represents a view in perspective of a truss, with an abdominal supporter attached thereto, the several parts occupying the positions they do when in use.

Figure 2 represents a similar view of the truss, with the abdominal supporter removed.

Figure 3 represents a view in perspective of the outside of the pad-plate detached from the spring.

Figure 4 represents a view in perspective of the inner side of the cup-plate for holding the pad.

Figure 5 represents a vertical section through the convex-pad, showing its connection with the spring.

Figure 6 represents a vertical section through the concave-pad.

Figure 7 represents one end of the spring, showing the square opening therein.

In the accompanying drawings, the spring A is of a single or continuous piece, curved downward at its ends, and each end provided with a pad.

The curved ends of the spring are such as to bring the pads directly opposite to and on a line with each other.

These pads, however, are not of the same form, one, B, having a projecting oval-shaped surface of an area less than that of the base of the pad, for the purpose of entering the cavity produced by the rupture, and preventing the intestine from passing out of the inguinal ring, and for forming a recess around the pad next the skin, for the circulation of air.

These pads may be made of cork or gutta-percha, of any desired size, and secured to plates D of a form corresponding to that of the pad, the inner side of which is recessed or chambered so as to form an encircling flange, *a*, within which the base of the pad is fitted and secured so as to unite the two firmly together, as shown in fig. 4.

The outer surface of this chambered plate D is provided with a square projection, *a*², which fits into a correspondingly-formed opening, *b*, fig. 7, in the end of the spring A, so that when the two are clamped together, it is impossible for the pad to turn.

This projection *a*² extends also from the inner side of the plate, as shown at *c*, in figs. 4, 5, and 6, and a female screw-thread is cut in said projection, into which the shank of a screw, *d*, passes, and a washer, *e*, is intervened between the head of the screw *d* and the outer side of the spring, to cover the end of the locking-projection *a*², and to form a seat for the screw-head *d* upon the outer side of the plate.

Both pads are constructed in this manner; and it will be seen that while the parts are of such construction as to admit of being readily put together and separated, they also admit of the pads being turned and secured directly at right angles to their former position, and as ruptures frequently require a longer or shorter pad, this right-angled adjustment allows the pad to be shortened one-half, and of being held securely crosswise of the rupture, which, in many cases, is highly desirable, and can only be determined by the wearer.

The securing of the pad to a chambered plate possesses many advantages over securing it directly to a flat back plate, as it admits of changing the pad and securing in the same seat one of different material, the flange or enclosing rim *a* being made to bite closely around the base of the pad.

The curved ends of the spring would be liable to spread apart and shift the pads from their proper positions.

To prevent this, I secure the curved ends together by a strap, K, crossing horizontally from one to the other, and united to the springs by buttons *k*, and provided with holes, to adjust it and hold the pads the proper distance apart.

The spring A is liable to press into the back and hips of the wearer, as frequent observation has shown. I therefore use, in connection with the spring, a back and hip-supporting strap, E, somewhat wider than the spring, made of leather, or any suitable material, which fits around the body and supports the spring in position, and the two are held together by means of loops, *f*, secured to the strap at suitable distances apart.

In order to prevent the undue heating of the body by the supporting-strap, it is perforated throughout its length with small ventilating-holes.

This supporting-strap also serves for the attachment of an abdominal supporter, F, fig. 1, of peculiar form. It is secured to each end of the supporting-strap E by buttons *g*.

The lower edge of this abdominal supporter is cut so as to form arched recesses *h*, to allow the pads B C to fit snugly beneath the said supporter against the ruptured parts, while its upper portion is of semicircular form, to fit against and support the abdomen.

This abdominal supporter is made of stout leather, and is entirely perforated to admit of free ventilation to the parts in contact therewith; and in order to effect its connection with the spring A, as well as with the back-supporting strap E, and, to hold it snugly as a support to the abdomen, I arrange an elastic band, G, across its outer side, so as to connect directly with the horizontal portions of the spring, by means of short straps, H, buttoned directly to the springs at *i*, and to the ends of said band G, while the band itself is held in proper position by a loop, I, on the front side

of the supporter, thus obtaining, in connection with a non-elastic perforated abdominal supporter, an elastic ligature, so that the effect of this elastic tie is to serve not only as a double security, in connection with the lower non-elastic strap K, to hold the ends of the spring together, but to form a yielding support to the abdominal supporter; and, in order to further maintain the spring and pads in proper position with the abdominal supporter, I connect the same straps which unite the ends of the elastic supporter G directly to the inelastic abdominal supporter by bifurcating the said connecting straps H, or extending one end of the same strap beyond the other, so that the longer ends j shall be connected by buttons directly to the abdominal supporter, while the short ends unite the elastic ligature, thus producing an easily-fitting connection between the spring and the abdominal supporter, and holding the several parts so that they will always maintain their proper relative positions to each other.

The supporting and protecting-strap being of a greater width than that of the spring, the latter may be made much narrower than heretofore, while the strap has all the advantages of a wide spring.

The supporting-strap also avoids the necessity of covering the steel spring with chamois-skin, and thus lessens the cost of the truss, while the steel spring may be protected from rust or corrosion by being coated with varnish or paint suitable for the purpose.

The ends of the back and hip-supporting and protecting-strap are provided with a number of holes for adjusting it properly to the body.

The same buttons, k, which serve as the attachment for the connecting-strap of the curved ends of the spring, may also serve as supports for a testicle-supporter of any proper construction, because in different cases of hernia it frequently happens that one or both of the testicles drop or sag down, and by this means they may be supported from the truss itself by silk cords leading therefrom.

I propose also to make the base of the pads with a series of encircling ventilating-holes in the edge thereof, obliquely outside the encircling rim of the cup.

It frequently happens that an abdominal supporter proper is not desired to be used in connection with the truss. In that case, I use a connecting-strap or supporter, J, so as to unite the ends of the spring and form a support for the elastic bracing-strap G, as shown in fig. 2 of the drawings.

Instead of using the common round-head button, with the metallic eye soldered thereto, I use one with a cylindrical shank, having an eye formed therein, and a flat oblong head, having two straight sides, so that it can be easily made to enter the hole in the leather without cutting it, and rendering it otherwise easy to button and unbutton.

The drawings represent the pads as being covered, but they are intended to be made and used without being covered.

I am aware that a ventilated body-strap has been used, but not as a shield and support beneath the spring, and therefore do not claim broadly such a strap.

Having thus described my improvements,

I claim—

1. A ventilated supporting and protecting-strap, arranged beneath the spring of a truss, substantially as before described.

2. Making the connections between the ventilated supporting-band and abdominal supporter, by means of the compound connections G and H, substantially as before described.

3. The combination of a continuous spring-truss, the ventilated supporting and protecting-strap E, the perforated abdominal supporter F, with the compound connecting-straps G H and the inelastic strap K, substantially as before described.

In testimony whereof, I have hereunto signed my name.

DAVID J. COOPER, M. D.

Witnesses:

D. H. COOPER,

A. E. H. JOHNSON.