No. 677,879. Patented July 9, 1901.

# W. A. MIDDAUGH.

## HERNIAL TRUSS.

(Application filed May 19, 1900.)

(No Model.)

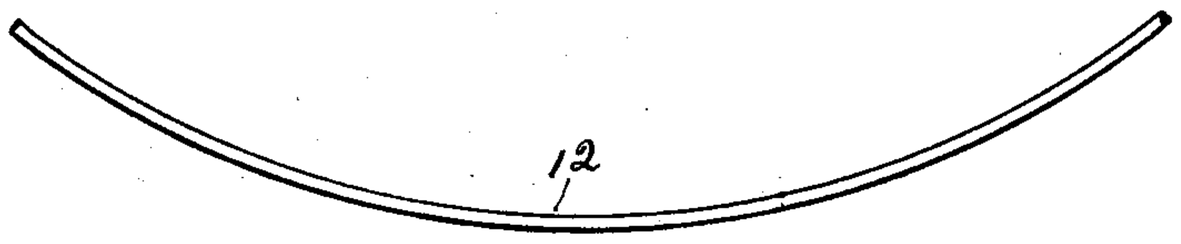


Fig. 2.

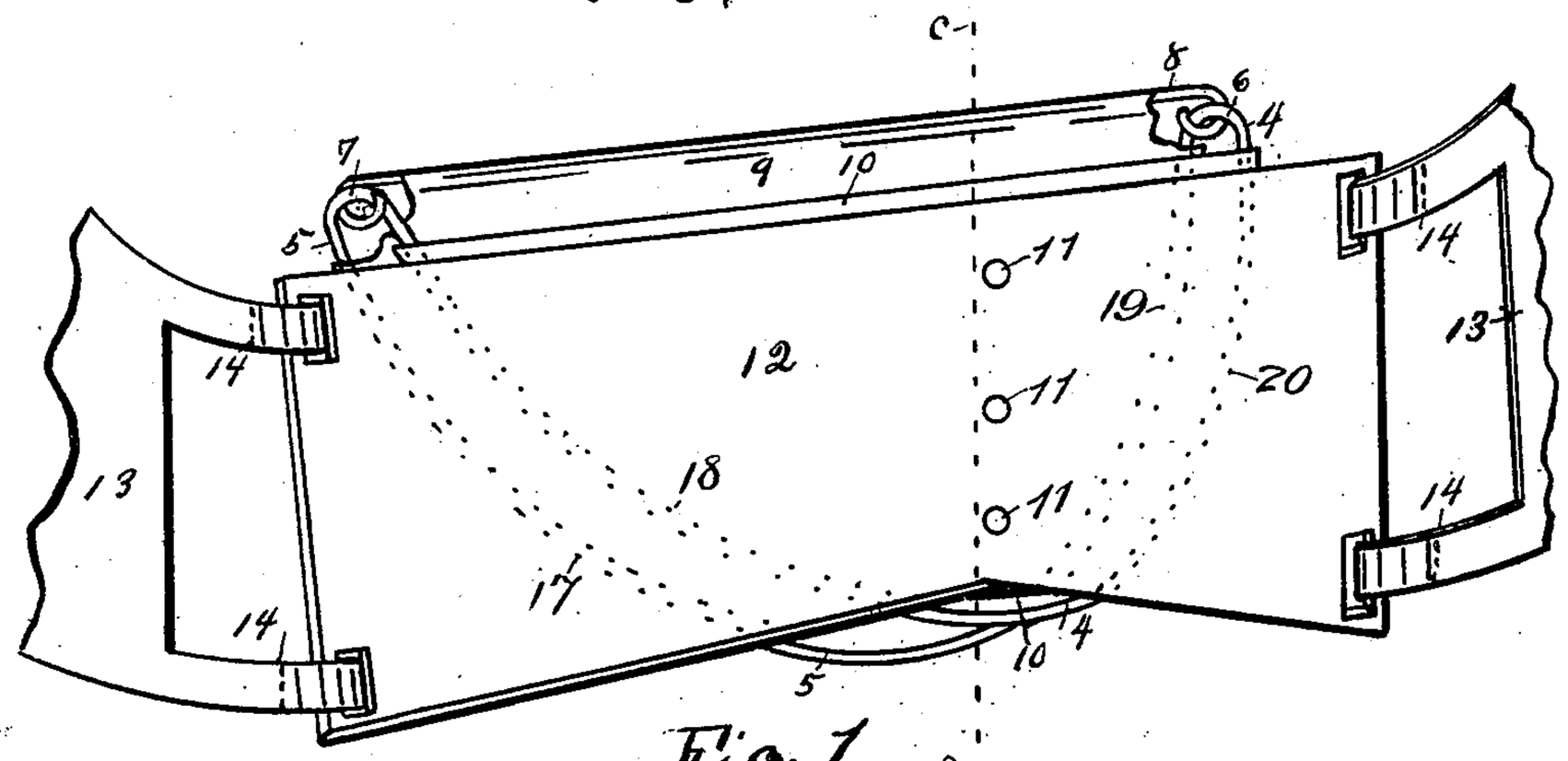


Fig. 1.

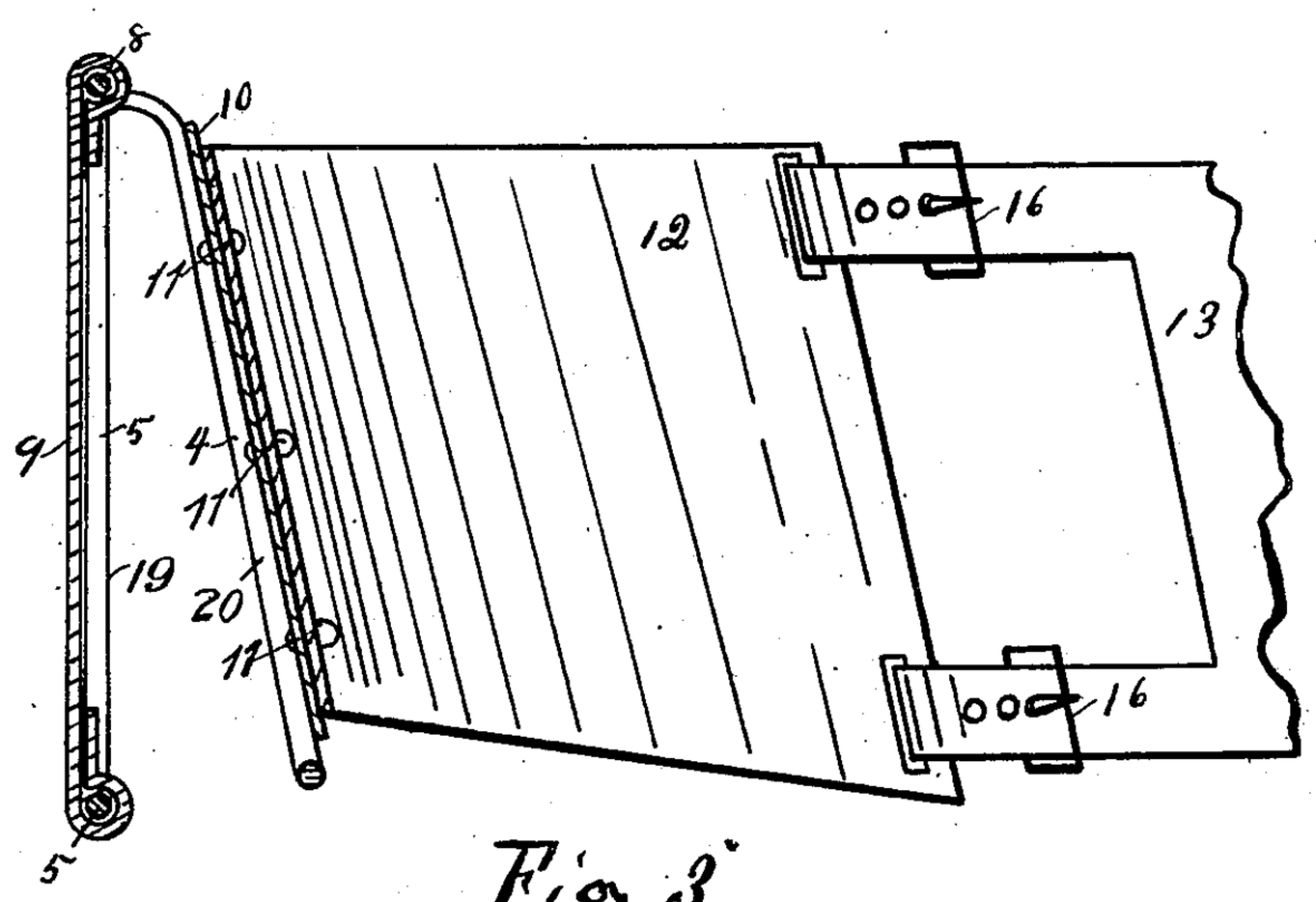


Fig. 3.

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# UNITED STATES PATENT OFFICE.

WILLIAM A. MIDDAUGH, OF KALAMAZOO, MICHIGAN.

## HERNIAL TRUSS.

SPECIFICATION forming part of Letters Patent No. 677,879, dated July 9, 1901.

Application filed May 19, 1900. Serial No. 17,301. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. MIDDAUGH, a citizen of the United States, residing at Kalamazoo, in the county of Kalamazoo, State of Michigan, (post-office address Kalamazoo, Michigan,) have invented a new and useful Hernial Truss, of which the following is a specification.

This invention relates to trusses which are intended to have a yielding pressure on the hernia or viscera of the abdomen.

An object of the invention is to increase the gentleness and delicacy of the pressure and the promptness of the yielding action.

Another object is to make the truss conform to the configuration of the body next to the pubic bone, to the location of the hernia, and to cause a beneficial upwardly-oblique leverage-pressure on the lower portion of the hernia.

Important features of the invention have reference to the construction of the frame of the truss and the elastic metal plate to which the attaching-belt for holding the truss on the patient's body is fastened.

In the drawings forming a part of this specification, Figure 1 is a perspective view of the truss, showing the attaching-belt broken away; Fig. 2, an edge view of the elastic metal plate in Fig. 1 looking from a point below. Fig. 3 is an enlarged view in section of certain parts in Fig. 1, on line *c c*, looking from a point at the left.

Referring to the parts of the drawings pointed out by numerals, 4 represents the front member of the frame of the truss, and 5 represents the back member of said frame. These front and back members are formed from an elastic metal ring by centrally bending it upon itself into a shape much like a hair-pin when looking at it in side view. The dotted sides 17 and 18 and 19 and 20 of the front and back members 4 and 5 in Fig. 1 and the sides 19 and 20 in Fig. 3 indicate their hair-pin form. To the bends 6 and 7 of the frame of the truss, at the top, are attached the ends of the top bar 8, Fig. 1. Over this top bar and covering the back member 5 is a flexible covering 9, which rests against the viscera when the truss is in use. The back member 5 and the covered top bar 8 rest against that portion of the abdomen which surrounds the cavity through which the viscera protrudes, thus having a tendency to close the cavity, with a design of its eventually healing.

Since the clothes of the patient are outside of the front member 4, there is a gentle automatic yielding of the frame of the truss when he moves or bends and the clothes draw or tighten, thus sustaining an approximately uniform pressure on the hernia. To the front member 4 is attached a rigid plate 10.

The sides 17 and 18 and 19 and 20 of the front and back members 4 and 5 of the frame of the truss (said sides being shown in dotted lines in Fig. 1) are so shaped and located that the sides 17 and 18 represent curves which are much more oblique and longer than the curves represented by the sides 19 and 20, whereby the fit and pressure of the truss are desirable, and it suitably conforms to the configuration of the body shape next to the pubic bone and to the location of the hernia.

An elastic metal plate 12 is attached by rivets 11 to the rigid plate 10. The place of this attachment is at one side of the longitudinal center of both of said plates 10 and 12, by which means that portion of the plates 10 and 12 at the left from the rivets 11 is much longer than that portion of said plate which is at the right of the rivets 11. The expressions "left" and "right" used in this connection refer to the drawings; but when the truss is used the longer portion of the elastic plate 12 would be toward the right hand of the patient, next to the pubic bone, since the truss illustrated is a right-hand truss. The design is to make the trusses both left-handed and right-handed. The elastic metal plate 12 is cut away on the lower edge obliquely each way from its place of attachment downwardly and laterally to its lower corners, as in Fig. 1, thus making it wider at the ends than it is at the place of attachment by rivets 11. The attaching-belt 13 is fastened to the ends of the elastic metal plate 12 by stitching, as at 14 in Fig. 1, or by buckles, as at 16 in Fig. 3, or it may be attached in any suitable manner. By making and attaching the elastic metal plate 12 as thus far described a beneficial upwardly-oblique leverage-pressure is had on the lower portion of the hernia. The elastic metal plate 12 is curved out-

wardly from its place of attachment to the ends toward the clothes of the wearer, thus causing it to yield during the movements of the patient's body in unison and conformity with the yielding of the front and back members 4 and 5. The curvature of said plate 12 is shown in edge view in Fig. 2.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

A hernial truss, comprising a frame formed from an elastic metal ring bent upon itself into something like a hair-pin shape, in side view, and forming a front and back member of the frame, one side of each of said members forming curves which are more oblique and longer than the curves represented by the opposite side of the members; a flexible covering on the back member; a rigid plate on the front member; an elastic metal plate, curved in edge view, and attached between its two ends to the rigid plate at a place one side of the longitudinal center of both of said plates, the elastic metal plate being wider at its ends than it is at its place of attachment by being cut away on its lower edge obliquely each way from said place of attachment, laterally and downwardly to its lower corners; and an attaching-belt fastened to the ends of the elastic metal plate, substantially as set forth.

In testimony of the foregoing I have hereunto set my hand in the presence of two witnesses.

WILLIAM A. MIDDAUGH.

Witnesses:
LUCIUS C. WEST,
H. S. NASH.