

No. 745,311.

PATENTED DEC. 1, 1903.

J. U. ADAMS.  
TRUSS.

APPLICATION FILED AUG. 3, 1903.

NO MODEL.

Fig. 1.

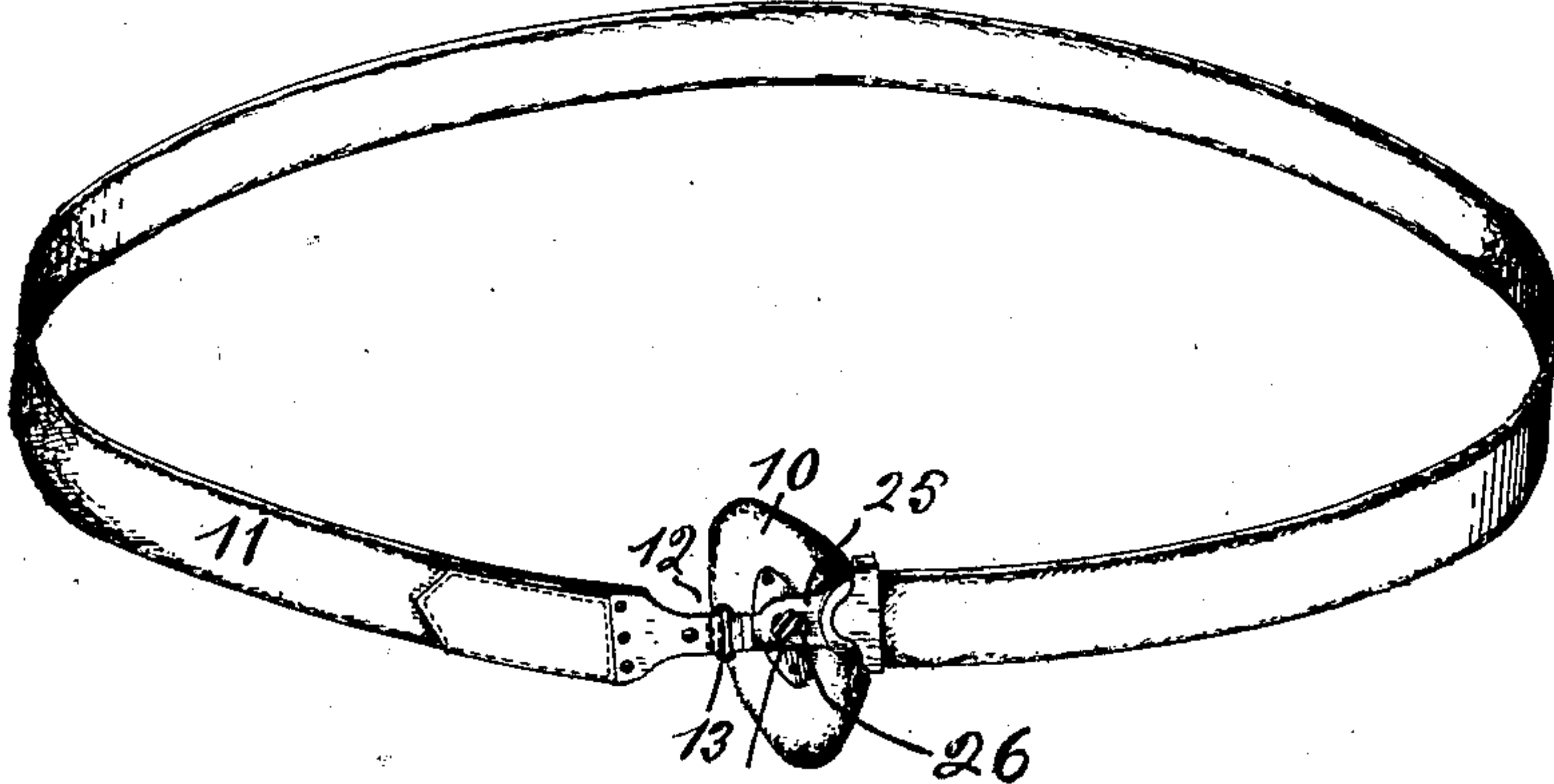


Fig. 2.

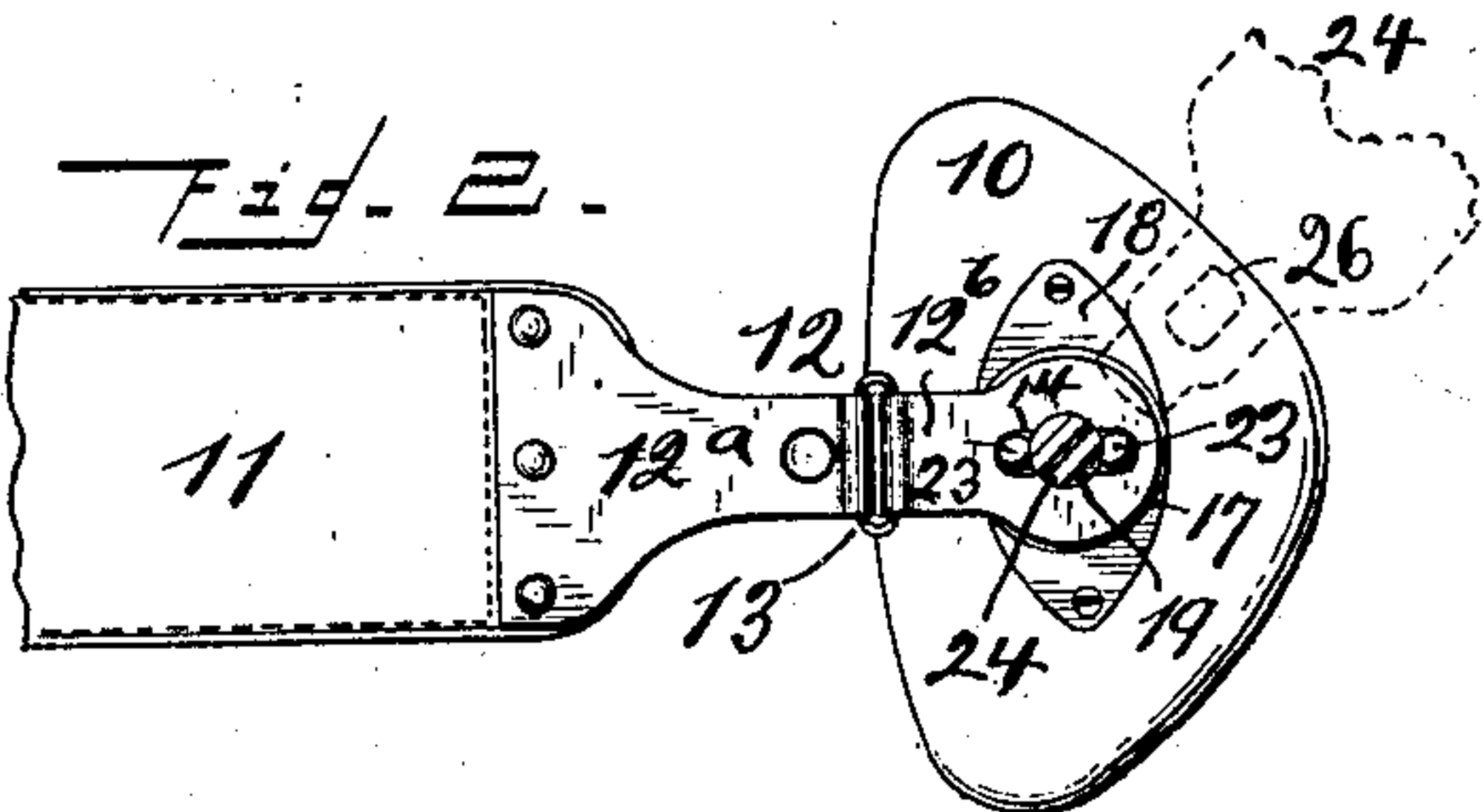


Fig. 3.

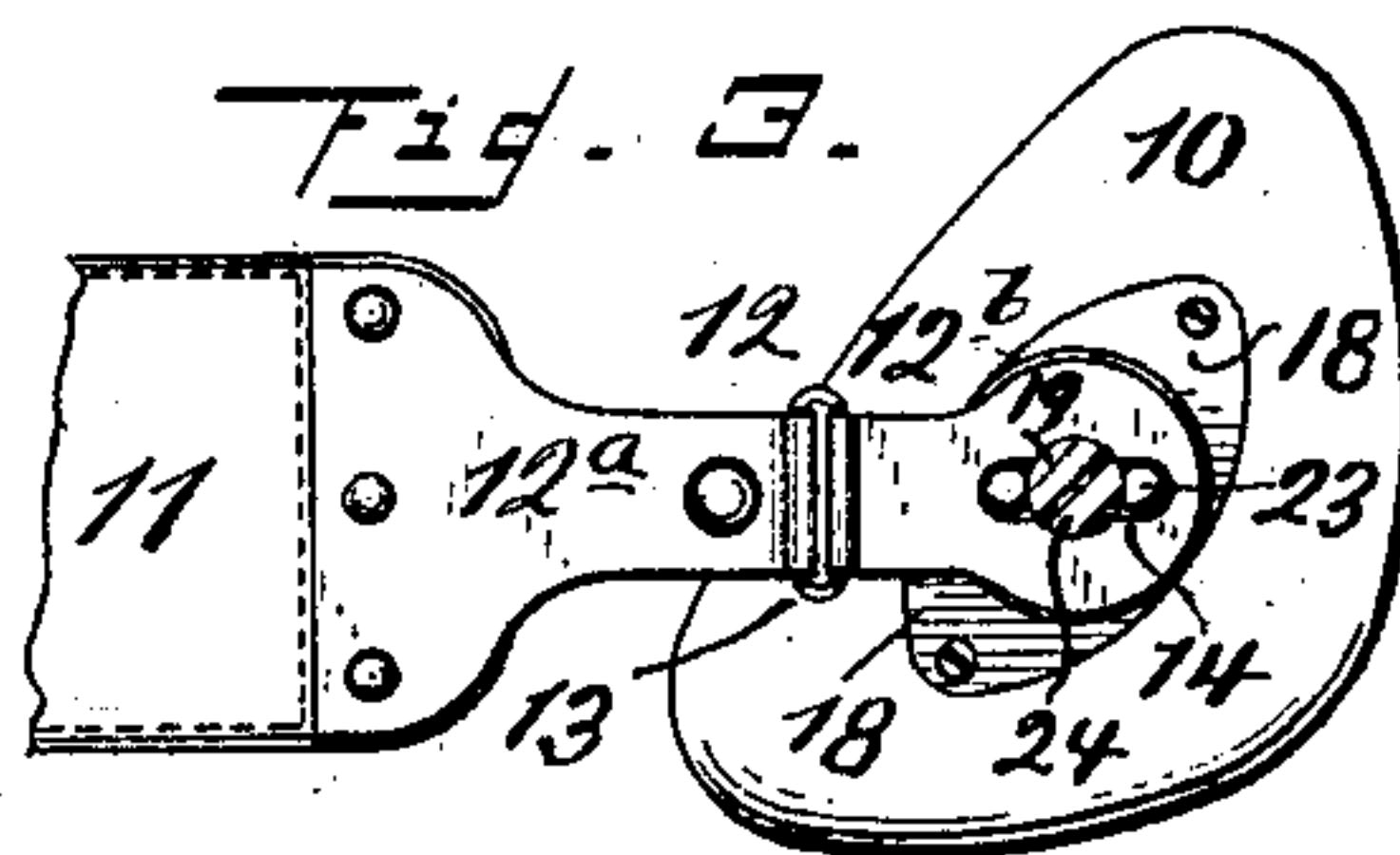


Fig. 4.

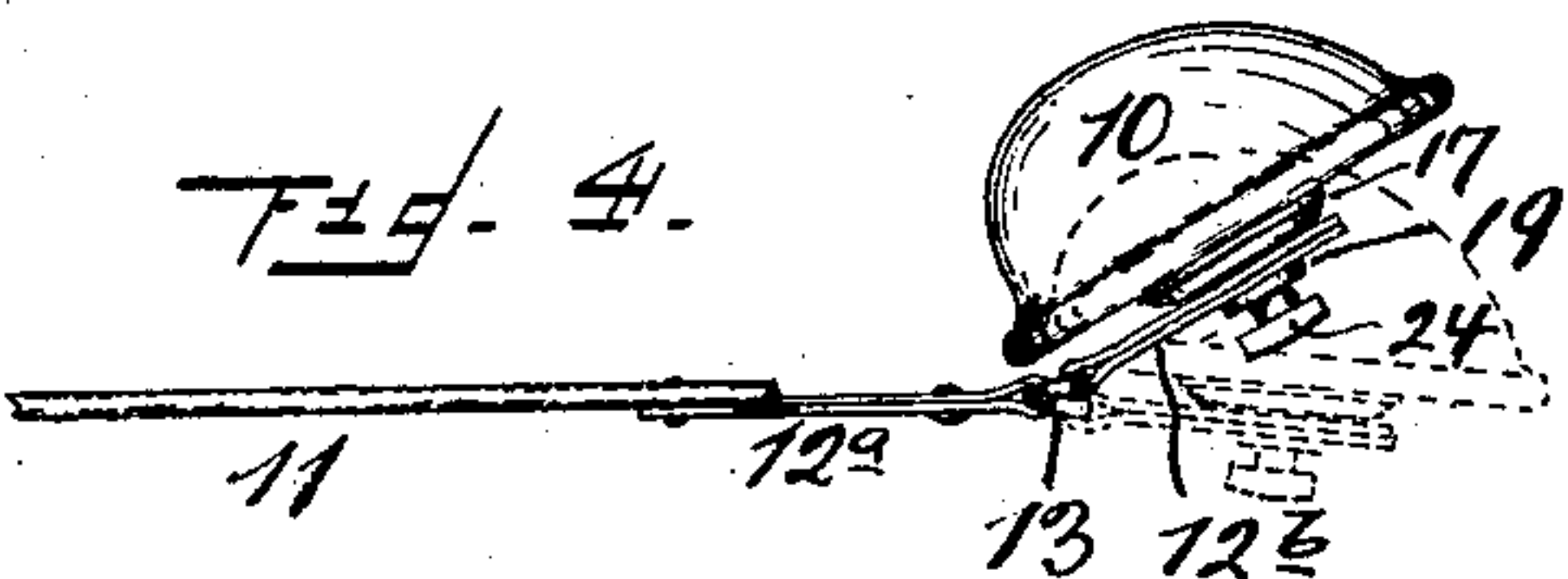


Fig. 5.

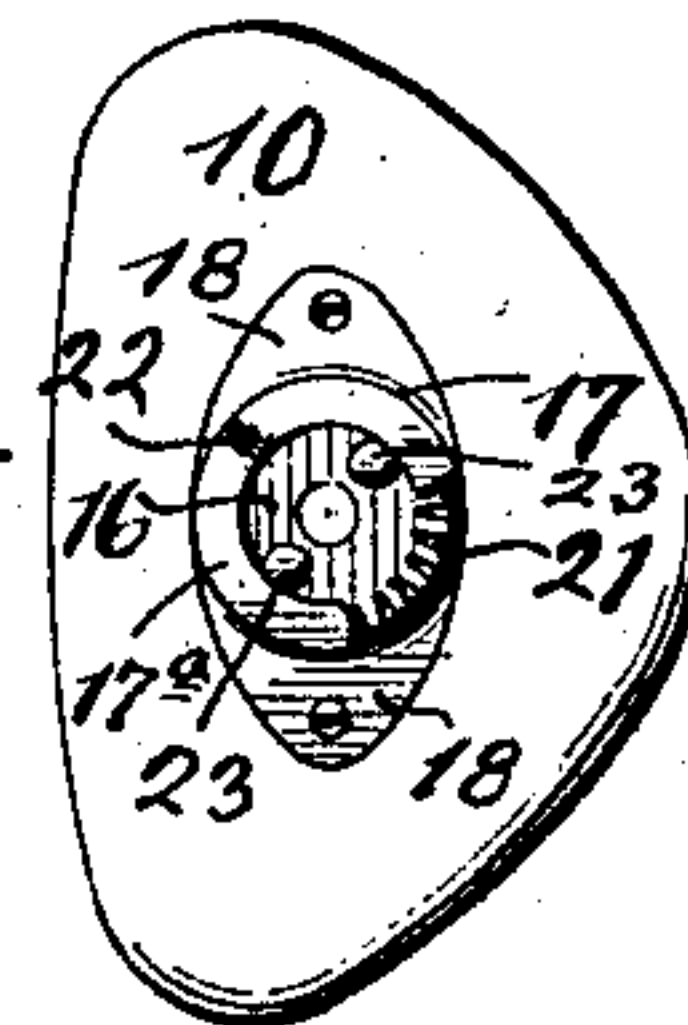


Fig. 7.

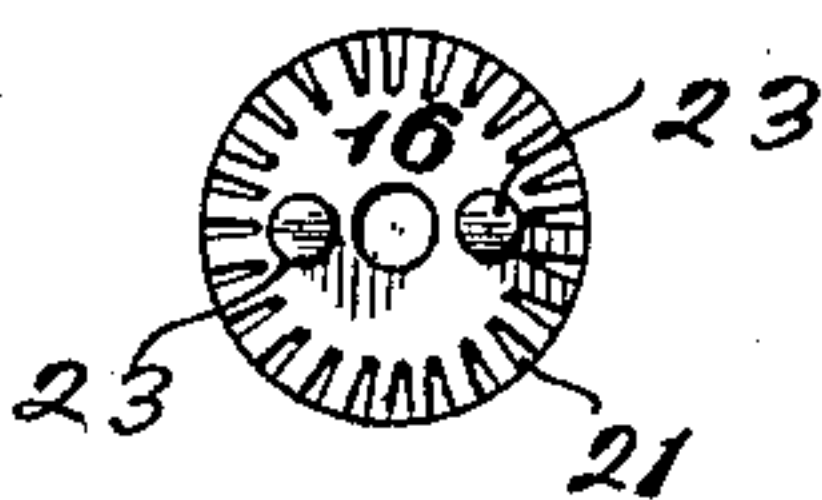


Fig. 8.

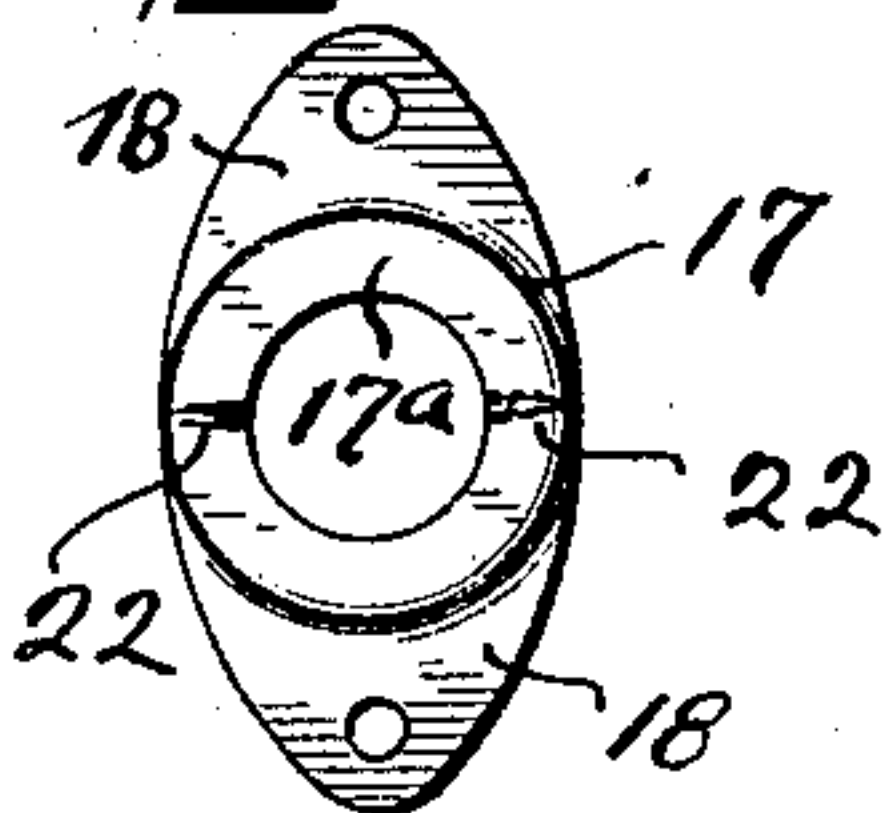


Fig. 6.

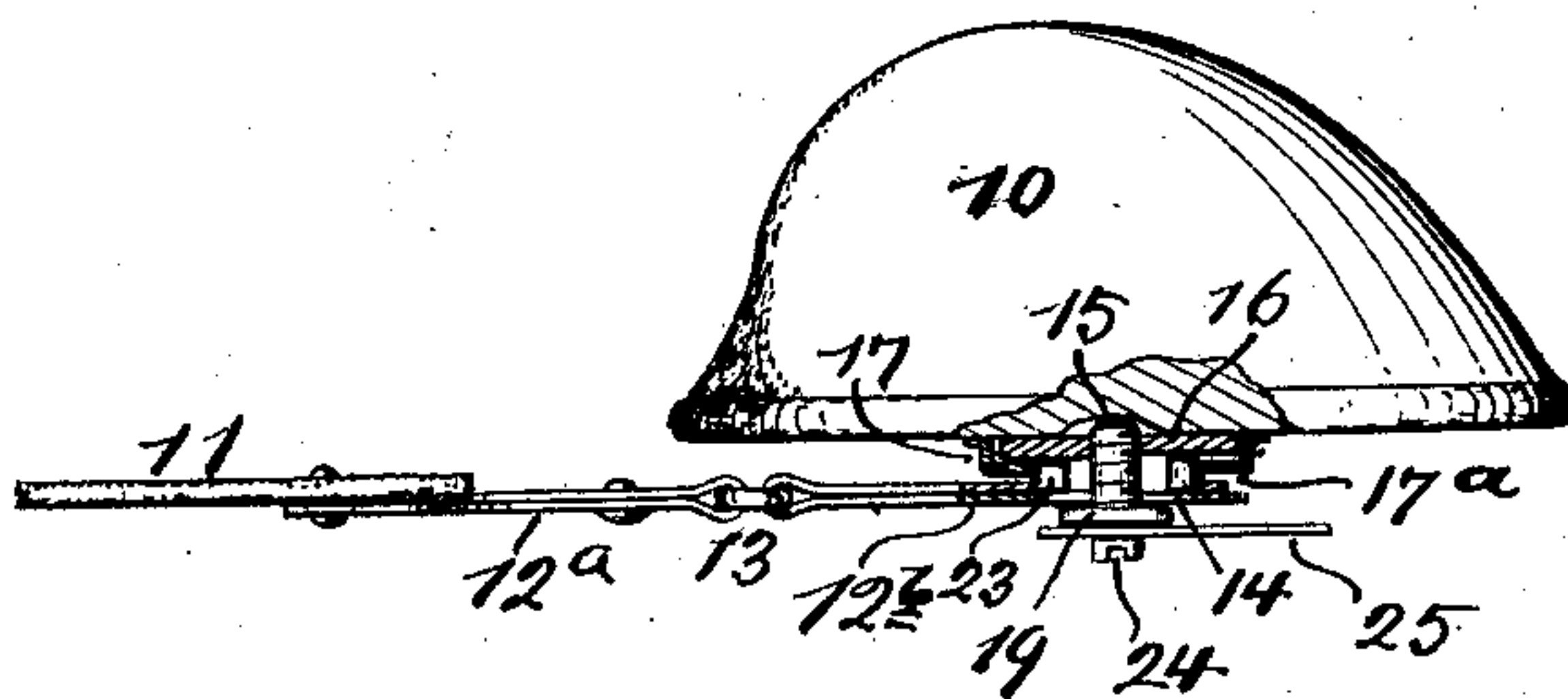
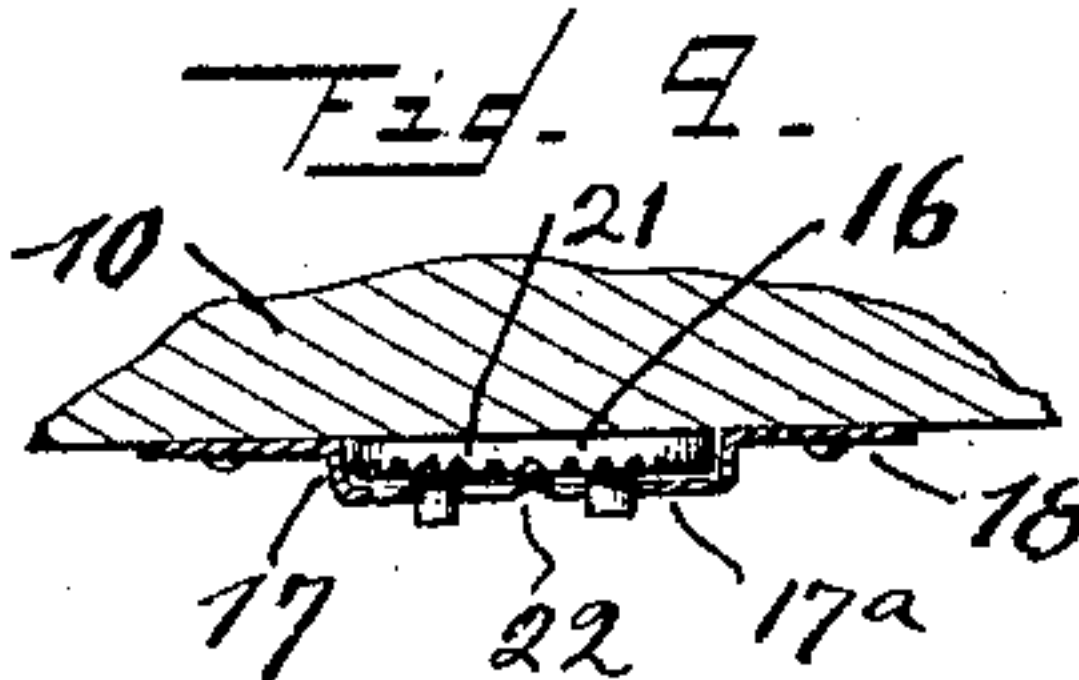


Fig. 9.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## TRUSS.

SPECIFICATION forming part of Letters Patent No. 745,311, dated December 1, 1903.

Application filed August 3, 1903. Serial No. 167,985. (No model.)

*To all whom it may concern:*

Be it known that I, JOEL U. ADAMS, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Trusses; and I do hereby declare the following to be a full, clear, and exact description of the invention, attention being called to the accompanying drawings, with the reference characters marked thereon, which form also a part of this specification.

This invention relates to improvements in appliances used to support in cases of hernia the ruptured parts. These devices, popularly known under the name of "trusses," comprise a pad which is generally applied over the ruptured parts and straps, belts, and similar means whereby it is held in position. There are trusses in which the pads are permanently connected to the fastening straps or belts and such in which this pad has a rotary adjustment about the point of its attachment and such as, for instance, is shown in one of my patents issued to me September 29, 1896.

My present invention comprises improvements in the construction of the means for so attaching a pad in this adjustable manner to its belt and whereby such construction is simplified and the manipulation during the subsequent use of the truss rendered more convenient.

It furthermore comprises the feature whereby the pad has an independent adjusting movement angular to the belt and to the rotary adjustment first mentioned or, what is the same, to and from the body of the wearer.

It finally comprises certain details of construction whereby the above improvements are practically carried out.

In the following specification, and particularly pointed out in the claims at the end thereof, is found a full description of my invention, together with its manner of use, parts, and construction, which latter is also illustrated in the accompanying drawings, in which—

Figure 1 shows a truss of customary construction and embodying the features of my invention. Fig. 2 is an enlarged detail view showing the outer side of the pad and the adjacent end of the belt. Fig. 3 is a similar view showing it adjusted to a different angle

by means of the rotary connection. Fig. 4 is top view of Fig. 2, showing the possibility of the additional angular adjustment by means of the hinged connection and previously referred to. Fig. 5 in a view similar to Fig. 3 shows the pad detached. Fig. 6 is an enlarged top view of the pad with parts broken away and shown in section. Figs. 7 and 8 show the complementary parts of the locking means, their contiguous opposite and engaging surfaces being shown. Fig. 9 is a longitudinal section through the housing as shown in Fig. 8.

10 is the pad, which for present purposes may be of any construction or material, the only requirement being that its outer side is adapted to receive the fastening means (usually screws) to hold the attaching parts in position.

11 is a belt of customary material.

12 is a shank which carries the pad and at the same time holds it to the belt. In my previous patent mentioned this shank is constituted by a rigid arm, allowing no adjustment of the pad with reference to the belt to and from the body of the wearer. This stiffness is objectionable, since it prevents the pad from adjusting itself so as to lie snugly against the body of the user and to accommodate itself to the shape and outline of the ruptured parts. To overcome this, I attach the pad to the belt in a manner which permits a pivotal or swinging movement with reference to the end of the belt and as best shown in Fig. 4. This is obtained by the use of a hinge 13, shank 12 being divided into two parts, 12<sup>a</sup> and 12<sup>b</sup>, which are united by said hinge. Part 12<sup>a</sup> is rigidly attached to the belt, while 12<sup>b</sup>, in shape of a link, carries the pad. The latter part has a slot 14, through which the shank 15 of a fastening-screw passes and engages a locking-plate 16, contained in a housing 17, which latter is rigidly and permanently attached to the back of pad 10. It is provided with lugs 18 for such purpose. Screw 15 has a shoulder 19, which by projecting over the edges of slot 14 in link 12<sup>b</sup> holds link and pad to each other. The operation is a clamping action whereby locking-plate 16 and link 12<sup>b</sup> are drawn toward each other with the front part or rim 17<sup>a</sup> of housing 17 between the two.



As already referred to, pad 10 has a rotary adjustment on the part carrying it—that is, on link 12<sup>b</sup>—with screw 15 as the pivotal center. To hold the pad after said adjustment positively in its new position, (see changed positions in Figs. 2 and 3,) I provide locking means operating as follows: On the opposite contiguous surfaces, between locking-plate 16 and inner side of rim 17<sup>a</sup>, I provide depressions on one and projections on the other adapted to engage each other. As shown, I provide radially-arranged serrations or indentations 21 in locking-plate 16 and one or more teeth 22 on rim 17<sup>a</sup> of housing 17. By drawing locking-plate 16 tightly against the inner side of rim 17<sup>a</sup> by means of screw 15 and with teeth 22 engaging the indentations 21 the locking-plate is positively held against rotation within housing 17. It remains now to also prevent rotation of link 12<sup>b</sup> and screw 15 with reference to each other, for which purpose there is one, but preferably two stops 23, eccentrically arranged with respect to the center of rotation and projecting from locking-plate 16, to which they are rigidly connected, and reaching into slot 14 of link 12<sup>b</sup>. The locking-plate being immovably held within housing 17, which latter is permanently connected to pad 10, it is clear that this latter is also immovably locked to link 12<sup>b</sup>, and thus firmly held in its adjusted position.

For manipulating screw 15 there is a customary slotted head 24 provided at its outer end. To loosen the pad for adjustment to a new position, two or three turns of screw 15 are sufficient to release teeth 22 from indentations 21, after which the pad may be adjusted by rotating it on link 12<sup>b</sup>. This rotation is with the pad or its housing 17 about locking-plate 16, the latter forming a bearing for such rotation and of which rotation screw 15 is the center. The pad is relocked again in its adjustment to its new position by the same number of turns on screw 15, whereby the locking-plate 16 is drawn against rim 17<sup>a</sup> with teeth 22 occupying again indentations 21. Link 12<sup>b</sup> is clamped against the face of housing 17 by shoulder 19 and positively held against slipping by stops 23, which occupy slot 14 in it. Head 24 of screw 15 is also used to serve as one of the complementary parts whereby belt 11 is closed and held in position on the body after placed around the same. The other part is a hasp 25, secured to the other end of the belt and provided with a slot 26, which receives the outer end of screw 15. Head 24 of this latter is oblong or oval, and slot 26 is only as wide as the smallest diameter of said head, so that the ends of this belt have to be manipulated, as shown by dotted lines in Fig. 2, before they can be engaged to each other to close the belt. After so closed and as shown in Fig. 1 parts of head 24 will project over the edge of slot 26, thus preventing the belt from becoming open. Teeth 22 in rim 17<sup>a</sup> of housing 17 may be

formed by indenting said rim, as shown in Figs. 8 and 9. Hinge 13 may be constructed in any suitable way and of any suitable material, and a hinge-pin might take the place of the link shown. The main object is to permit the pad to adjust itself within certain limits to and from the body independently of the belt. It is clear, however, that the improvements in the means for locking the pad to the free end of shank 12, as far as their function for such locking purpose is concerned, may also be used in connection with a rigid—that is, unhinged—shank.

Instead of having a slot 14 to accommodate screw 15 and stops 23 there might be a separate circular opening for each of these members.

Having described my invention, I claim as new—

1. In a truss, the combination of a belt, an arm at one end of the same, a slot in the end of this arm, a pad, a circular locking-plate, a housing in which it is carried and whereby it is held to the pad so as to be free to rotate within said housing, a screw seated in the locking-plate and passing through the slotted arm mentioned, a shoulder on it to hold arm and pad to each other and stops projecting from the locking-plate into the slot of this arm to prevent one of these two latter parts from moving independently of the other.

2. In a truss, the combination of a pad, a housing fixedly secured to it, a circular locking-plate held within this housing by the overlapping rim of the same in a manner to be free to rotate therein, a belt, an arm at one end of the same, a slot in this arm, a screw connection to hold the pad to the belt by connecting its arm to the circular locking-plate and stops projecting from this latter into the slot of the arm to prevent independent rotation of the locking-plate therein.

3. In a truss, the combination of a pad, a housing fixedly secured to it, a circular locking-plate held within this housing by the overlapping rim of the same in a manner to be free to rotate therein, a belt, an arm at one end of the same, a slot in this arm, a clamping-screw to hold the pad to the belt by clamping the overlapping rim of the housing between arm and locking-plate, complementary indentations and teeth in the contiguous opposite surfaces between such locking-plate and the overlapping rim of the housing whereby independent rotation of these parts on each other may be prevented by action of the clamping-screw and stops projecting from the locking-plate into the slot of the arm, thereby preventing also independent rotation of the locking-plate on the arm.

4. In a truss, the combination of a belt, an arm at one end a slotted hasp at the other, a pad, a clamping-screw seated in this pad and passing through an opening in the arm mentioned, a shoulder on this screw which engages the arm and holds the same to the pad, and an oblong head projecting outwardly



from the shouldered part of the clamping-screw and adapted to engage the slotted hasp at the other end of the belt.

5 In a truss the combination of a belt, a shank 12<sup>a</sup> rigidly connected to one end of the same, a flat link 12<sup>b</sup> hinged to the free end of this shank in a manner to be free to adjust itself in a direction to and from the body of the wearer this hinged connection being such  
10 to also limit the motion of the link to one in this direction, a pad and a screw passing at right angles through the link mentioned serv-

ing as a means to hold the pad to this link and forming also the center of rotation about which the pad may be adjusted in a rotary 15 direction and in a plane at right angles to the direction of adjustment of the link.

In testimony whereof I hereunto set my signature in the presence of two witnesses.

JOEL U. ADAMS.

Witnesses:

C. SPENGEL,

ALBERT H. MOEBUS.