

TRUSS.

932,074.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

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To all whom it may concern:

Be it known that I, ARCHER WAKEMAN, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Trusses, of which the following is a specification.

My invention pertains to trusses or supporters such as are used to give mechanical support in cases of hernia, abdominal weakness, and like afflictions, and the object is to produce a device which shall give adequate support at the precise point or points desired, without causing discomfort or inconvenience to the wearer. To this end I construct the truss as shown in the accompanying drawings, in which:

Figure 1 is a perspective view of the truss, with the shoulder-straps or suspenders and the belt partially broken away; Fig. 2 a detail sectional view of a portion of the main supporting bar showing the construction whereby the same may be elongated; Fig. 3 a face view of the upper portion of the front or pad-supporting bar; Fig. 4 a longitudinal sectional view on the line 4-4 of Fig. 3; Fig. 5 a perspective view illustrating the manner of wearing the truss and showing a slightly modified form thereof; and Fig. 6 a partial sectional edge view or elevation of the pad and of the arm or bar to which it is attached, the bar being of the form shown in Fig. 5.

Referring to the construction shown in Figs. 1 to 4 inclusive, A' indicates the main supporting bar, designed to pass from about the small of the back or from the waist-line downward and forward between the legs, where it has pivotally attached to it the front bar or member B, to which is secured the pad C. These three members constitute the three main members of the truss, but for the purpose of properly supporting and maintaining it accurately in position, which is a matter of vital importance in the use of a truss or supporter, and one which presents considerable practical difficulty, I provide a belt D and shoulder-straps E. These serve also to give the requisite pressure. To receive the belt, the upper end of the main supporting bar A' is formed with an opening a, and the upper end of the front bar B is provided at one side with a slit or opening E' through which one end of the belt is passed and secured. A large opening F' is formed in the flattened portion of the

bar adjacent to the slit E', and lugs G' extending into said opening pass through inwardly-projecting ears H' formed upon a buckle-plate I'. Said plate is provided at one edge with teeth J' which slightly overlap the body of the bar, while the opposite edge K' is curved inwardly, terminating at a point approximately in a plane with the inner face of the bar or the flattened portion thereof.

The free end of the belt D is passed over the body portion of the bar at the left of the opening F', under the inturned edge K' and then up between the teeth and the adjacent section of the body of the bar. When brought to position the belt will so remain, any strain thereon acting on the inturned edge and tending to throw the teeth more firmly into the fabric of the belt. The buckle may be readily closed by depressing that portion which carries the inturned edge, thus elevating the teeth. A buckle L' is mounted in an opening M' formed in the upper portion of the pad-supporting member, and functions with the strap or straps E of the suspenders in the same manner as described in connection with the belt-buckle. This arrangement does away with the use of separate buckles on the belt and straps, and affords a ready means whereby they may be adjusted as occasion may require.

Above the opening a in the main supporting bar A' are two eyes c, designed to receive the ends of the shoulder-straps or suspenders E. The bar A' is widened out where the eyes c are formed, not only to receive the straps or bands E, but primarily to give a broad, flat bearing surface which, resting against the back of the wearer, shall tend to hold the bar A' in proper position and prevent any tendency to twist or turn. The bars A' and B are advisably both of tubular form, to combine lightness, stiffness and strength, and are preferably of substantially D-form in cross-section, with the flat face turned toward the person of the wearer.

As will be noted upon reference to Figs. 1 and 2, the bar A' is provided at its forward end with a reduced, externally-threaded portion B', over which is passed a threaded sleeve C'. The bar A' is also provided with a threaded opening into which is screwed a threaded stem D', which at its outer end is hinged to the lower end of the front or pad-supporting bar B. By screwing the stem D'

in or out, the effective length of the main supporting bar may be varied. The sleeve C' is moved outwardly to cover the stem when the same is screwed out to the end of the bar, or a sleeve of a length just sufficient to cover the reduced portion of the bar and also the protruding portion of the stem may be substituted. The bar A' is preferably made narrower from about the point where it curves forward than above that point, as shown. Bar A', which may be made in a series of stock sizes for the trade, but which will preferably be adjustable and usually made to measurement for each user, is carefully fitted so that when the belt D is passed about the waist, where it will rest upon the hips and be prevented from slipping down, the bar will closely fit the crotch or perineal region, and reach to the front, but not project unduly forward. The bar or member B should incline somewhat outwardly or forward at the upper end, so that the pad C carried on its inner side may be pressed firmly against the person of the wearer by the belt D attached to the upper end of the bar, and also by the pull of the shoulder-straps or suspenders E, the member B acting as a lever, of which its pivotal connection with the bar A', or more strictly speaking, the extensible member D' thereof, constitutes the fulcrum. The pad C, which may be of any form, material and dimensions suitable to the particular case, is adjustably secured upon the bar B, preferably by a threaded stem or screw F, with a loose bail e, which affords an adequate grip and purchase for turning the screw, yet may be folded down flat to avoid any undesirable projection.

In Figs. 5 and 6, the front bar or pad-supporting member is shown as provided with a series of perforations f and the pad C provided with an internal nut g at about the center of its flat outer plate or backing, movable in a recess h and also with a threaded hole i near one end. At the opposite end is located a rivet or stud j, the head of which enters a key-hole opening k in the lower end of the front bar, the shape of said opening permitting the head to be entered and moved into the narrower part of the opening, where it will be held against escape, the screw F passing into the nut g and being turned tight to prevent longitudinal or lateral movement of the pad. By loosening the screw, the pad is made free to be adjusted slightly up or down, the opening k and recess h affording freedom of movement. If desired, the pad may be turned with its major axis substantially horizontal, in which case the stud or rivet j will not engage the opening k, and the screw may be passed through any opening in the bar B and inserted into either nut g or hole i. This affords a wide range of adjustment for the

pad. In said Figs. 5 and 6, the upper end of the front bar is shown as of a slightly different form from that illustrated in the other figures. Instead of employing buckles upon the bar for positioning the belt with reference thereto, the bar is provided with an elongated opening b of a size to admit a fairly broad flat belt or band, which in this instance is provided with a buckle to secure proper adjustment about the waist. Above the opening b are two eyes d, designed to receive the ends of the shoulder-straps or suspenders E, which may be permanently secured to the bars A and B or held by buckles, after the manner of suspenders generally. It will also be noted that in these views the bar A, which is similar to the bar A' in the other figures, is solid and is not provided with an extension member, as above described. The bars A' (or A) and B are both rigid in themselves, and hence hold the pad firmly and accurately in position, being themselves accurately positioned and held by the belt and suspenders. In some cases, either the belt or the suspending shoulder-straps may be used one without the other, but it is deemed preferable to employ both, to insure greater certainty of retaining the pad in fixed position.

It is, of course, common to employ belts and suspenders in connection with trusses, bandages and supporters of various kinds, and it has also been proposed to employ bent or folded elastic wire to pass from the front side of a belt, between the legs and back to the rear of the belt, the pad being adjustably secured to such wire, I make no claim to such construction, but purposely provide an inelastic or rigid supporting bar, and a like rigid pad bar, with a view to insuring proper and permanent positioning of the pad, and to producing the requisite pressure at that point and only at the point where pressure is desired. Held as it is by the belt, the bar A' (or A) can neither fall below nor rise above the desired position. The lower end of the bar or member B cannot be drawn against the person of the wearer, but the upper end, and consequently the pad, can be drawn toward the wearer by the belt and shoulder-straps, with whatever degree of force may be desired.

Practical tests of the truss have demonstrated its high efficiency, and freedom from discomfort common to most types of supporters and trusses heretofore in use.

Having thus described my invention, what I claim is:

1. In a truss, the combination of a main supporting bar adapted to rest against the back of the wearer and to pass thence downward and between the legs to the front; a second bar, pivotally connected to the first and extending upward from the pivotal point; a pad carried by said second bar; and

means for holding said parts in place upon the wearer.

2. In combination with bar A, adapted to pass from the back, between the legs and to the front of the wearer; bar B pivotally attached to the forward end of bar A, and pad C carried by bar B; a belt D, connecting said bars A, B, and adapted to pass about the body of the wearer.

3. In a truss, the combination of a rigid main bar adapted to rest against the back of the wearer and to pass thence downward and between the legs to the front; a second rigid bar pivotally connected to the forward end of the first bar and extending upward from the pivotal point; a pad carried by said second bar; and shoulder-straps connected to the free ends of said bars.

4. In combination with bar A adapted to pass from about the small of the back downward between the legs and to the front of a wearer; bar B pivotally connected to the fore end of bar A; pad C carried by bar B; belt D passing through the upper ends of said bars and adapted to encircle the wearer; and shoulder straps E connecting the upper ends of the bars.

5. In a truss, the combination of a main supporting bar having a broad flat bearing portion to rest against the back, and a downwardly and forwardly extending arm or portion; a bar pivotally connected with the fore end of said main bar and adapted to receive a pad; and means for holding said parts in place upon the wearer.

6. In a truss, the combination of a main supporting bar; a front bar pivotally connected to the forward end of the supporting bar and provided with a series of perforations *f* and a key-hole opening *k*; a pad provided with a rivet or stud *j* and nut *g*; a screw adapted to pass through one of the perforations and into the nut; and means for holding said parts in place upon the wearer.

7. In a truss, the combination of an extensible main supporting bar adapted to rest against the back of the wearer and to pass thence downward and between the legs to the front; a second bar pivotally connected to the first bar and extending upward from the pivotal point; a pad carried by the second bar; and means for holding said parts in place upon the wearer.

8. In a truss, the combination of a main supporting bar adapted to rest against the back of the wearer and to pass thence downward and between the legs to the front; a member adjustably secured to the forward end of the bar; a second bar pivotally connected to said member; a pad carried by said second bar; and means for holding the truss in place upon the wearer.

9. In a truss, the combination of a main supporting bar adapted to rest against the

back of the wearer and to pass thence downward and between the legs to the front; a screw threaded rod secured in the forward threaded end of the bar; a second bar pivotally secured to the outer end of the rod; a pad carried by said member; and means for securing the truss in place on the wearer.

10. In a truss, the combination of a main supporting bar adapted to rest against the back of the wearer and to pass thence downward and between the legs to the front; a screw threaded rod secured in the forward threaded end of the bar; a protecting cover for the projecting end of the rod; a second bar pivotally secured to the outer end of the rod; a pad carried by said member; and means for securing the truss in place on the wearer.

11. In a truss, the combination of a main supporting bar; a second bar pivotally secured thereto; a pair of buckles carried directly by said second bar; and supporting and positioning straps coöperating with said buckles to hold the truss in place.

12. In a truss, the combination of a pad supporting bar provided with a flattened portion having openings therein for the reception of buckle plates; buckle-plates pivotally mounted in said openings; and supporting and positioning straps coöperating with said buckles.

13. In a truss, the combination of a pad supporting bar provided with a flattened portion; a belt secured thereto; a buckle plate located upon the opposite side of the flattened portion and adapted to hold the normally free end of the buckle; a second buckle arranged at the upper end of the flattened portion; and supporting straps adapted to be held by said second buckle.

14. In a truss, the combination of a pad supporting member provided with a flattened portion having a slit formed adjacent to one side, an opening to one side of said slit and a second opening in its upper end; a belt having one end passed through the slit and permanently secured to the pad supporting member; a buckle plate pivotally mounted in the first named opening, said plate being provided with a series of teeth along one edge, and having its opposite edge turned inwardly; a second plate pivotally mounted in the upper opening, said plate being likewise provided with a series of teeth along one edge and having its opposite edge turned inwardly; and supporting straps coöperating with said second plate.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARCHER WAKEMAN.

Witnesses:

WM. C. ANDERSON,
C. W. GILL.