

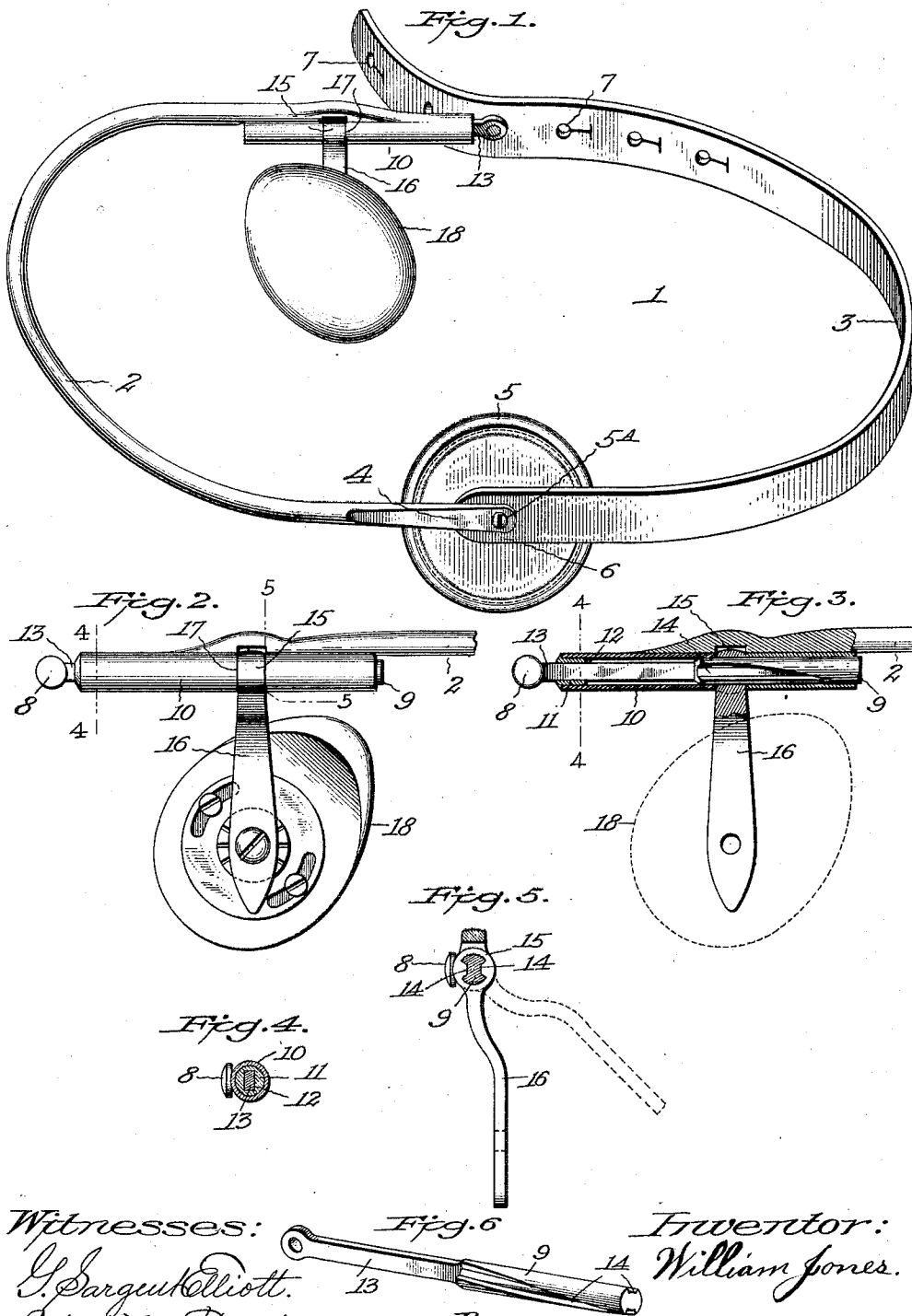
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TRUSS.

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1,005,978.

Patented Oct. 17, 1911.



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Fig. 6
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WILLIAM JONES, OF DENVER, COLORADO.

TRUSS.

1,005,978.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM JONES, a citizen of the United States of America, residing in the city and county of Denver and State of Colorado, have invented a new and useful Truss, of which the following is a specification.

My invention relates to improvements in trusses, and the object of my invention is to provide an automatically operating even pressure compensating movement in the truss that is governed by the motion of the body of the wearer. I attain this object by the mechanism illustrated in the accompanying drawing, in which:

Figure 1, is a perspective view of the improved truss. Fig. 2, is a rear view of the truss pad, the supporting lever, and the tubular portion of the truss band. Fig. 3, is a vertical, longitudinal sectional view through the tubular portion of the truss band, showing the spirally grooved rod for moving the truss pad and its supporting lever. Fig. 4, is a transverse, sectional view on the line 4—4 of Fig. 1. Fig. 5, is a transverse sectional view on the line 5—5 of Fig. 1. And Fig. 6, is a perspective view of the spirally grooved rod.

Similar letters of reference refer to similar parts throughout the several views.

Referring to the drawing, the numeral 1 designates a body belt, a portion 2 of which I preferably make of metal, and preferably make this metal portion in the form of a wire, and the other portion 3 of the belt I preferably make in the form of a flexible strap. The wire portion of the belt may be given any desired curve, and it forms as illustrated about one-half of the length of the belt. One end 4 of this wire portion of the belt is flattened and is removably secured to the back of a pad 5 by a screw 5^A, which extends through the flattened end of the wire. One end 6 of the flexible strap 3, which is preferably a leather strap, is also secured to the back of the pad 5 by the screw 5^A, the end of the strap being placed under the end of the wire, and the screw passes through both the wire and strap. The pad 5 may be of any suitable kind or character. The opposite end of the strap 3 is provided with a row of apertures 7, that are adapted to fit removably over a button 8 that is formed on the end of a reciprocating rod 9, that is reciprocally mounted in a tube or sleeve 10,

that forms a part of or is attached to the opposite end portion of the wire portion of the truss supporting body belt. This tube may be of any suitable tubular form of cross section. I preferably illustrate it as a round tubular sleeve portion of slightly larger diameter than the wire, and it is arranged to form a slideway for the reciprocating rod 9, and is arranged to prevent the rod from turning in the sleeve as it reciprocates therein.

My invention contemplates a truss that will yield reciprocally with easy, positive, variable, and equal pressure movements to the variable breathing and other movements of that part of the body of a patient to which it is applied. There are many ways in which my invention may be constructed and arranged to effect this result. I preferably, however, construct and arrange my body movement compensating truss as follows: The tube 10 is provided at its outer end with thickened interior portions 11 that are arranged to form a slideway space 12, in which a stem portion 13, that is formed on the outer end of the rod, fits slidably. This stem portion 13 of the rod is arranged to slidably reciprocate freely and smoothly in the tube, but it is arranged so that it cannot rotate therein. This feature of my invention can be carried out in any suitable manner, but I preferably attain it by forming the stem portion of the rod 9 that reciprocates in the tube of rectangular shape and forming a rectangular slideway aperture in the adjacent end of the tube. The remainder of the length of the tube contains a round aperture and the opposite end of the rod is provided with one or more spiral form of grooves 14, two being shown which are arranged on opposite sides of the rod. These spiral grooves are of a pitch that will permit the rod to slide reciprocally through a spirally grooved nut 15, which is formed on one end of a truss pad supporting lever 16. The nut portion of this lever is positioned in a transverse slot 17 formed through the shell of the tube intermediate of its ends, which is arranged to permit the nut to fit loosely in the slot and also to fit on the rod and loosely on the spiral grooves of the rod and allow the rod to move reciprocally, easily, and smoothly through it, and inasmuch as the rod is feather-keyed by its rectangular portion in the rectangular slideway of the tube against

turning or rotary movement, the lever is oscillated reciprocally at right angles to the longitudinal movement of the spirally grooved rod through a part of a circle.

5 A length and pitch of spiral groove on the rod that will impart a partial rotative oscillating movement of about from a quarter to a half of a circle, will give a sufficient yielding movement to the belt and
10 truss pad, and in order to accomplish this amount of movement the spiral grooves may be made to extend around the rod from a quarter to a half of its circumference.

The truss supporting lever is detachably
15 secured to any desired form or character of truss pad 18 desired, which is provided with means for adjustably securing it to the lever in any desired angular position. The form or character of truss pads that may be used
20 on the belt, and the manner of attaching them to the belt, does not form a part of my present invention.

The operation is as follows: The belt portion is placed around that part of the body
25 it is desired to apply the truss or trusses to, and the end of the strap is buttoned onto the button 8 of the stem portion of the spirally grooved rod at a point that will make the belt as tight on the body as is desired, and the truss or trusses are properly
30 adjusted in contact with the body. Then the natural movements of the body due to breathing and the action of the body when in motion, cause the rod to move reciprocally in the tube and thus impart a variable, equal pressure movement to the truss that is attached to the nut controlled lever on the spirally grooved rod, and also impart a variable, equal tension movement to
35 the belt, that gives a wearer perfect freedom of action without increasing or diminishing the normal adjusted pressure of the truss.

45 Having described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A truss comprising a belt portion having attachable and detachable ends, one of
50 said ends being provided with a tubular housing member provided with a transverse slot, a suitable stem arranged to slide reciprocally in said tubular housing member, a lever carrying a truss at one end loosely supported by said housing member in said
55 slot against lateral movement with said sliding member, and having a nut at its opposite end mounted loosely on said sliding member, and means cooperating with the sliding reciprocal movement of said sliding member for imparting an oscillatory reciprocal movement to said lever and its truss pad in an angular direction to the reciprocal movement of said sliding member.

65 2. A truss comprising a belt having suitable fastening and unfastening ends, one

of which is provided with an automatically lengthening and shortening terminal end adapted to permit said truss when operatively secured on the body to yieldingly enlarge or to contractingly decrease in size
70 in response to the breathing and other movements of the body, said enlarging and decreasing terminal end comprising a reciprocal movement sliding rod adapted at one end to be connected to the opposite end of
75 said belt and having its opposite end spirally grooved and freely housed in the adjacent end portion of said belt, and a lever provided with a truss pad at one end and having a spirally fluted apertured opposite
80 end portion mounted on and fitting loosely the spirally fluted end portion of said reciprocal movement sliding rod, and means connected with said housing for preventing reciprocal movement of said lever with said
85 sliding rod, whereby the reciprocal movement of said sliding rod imparts an oscillatory reciprocal movement to said lever and its truss pad.

3. A truss comprising a band, a portion
90 of the length of which comprises a wire and the remaining portion of which comprises a suitable flexible material strap, said strap and wire being secured together, a truss pad at the junction of said wire and fabric member, a tubular portion at the terminal end
95 of the opposite end of said wire portion of said belt, a slideway in said tubular portion, a rod reciprocally mounted in said slideway provided with spiral grooves, a
100 recess in said tube, a lever having a nut portion at one end and a truss at its opposite end, said nut being positioned in the recess of said tube, said nut being provided with spiral flutes and arranged to fit loosely on
105 said rod, said spiral grooves on said rod being arranged to move with a reciprocating, oscillatory movement of predetermined radius, a stem portion on said rod projecting beyond the terminal end of said tube,
110 and means for adjustably securing the end of the flexible portion of said belt to said stem.

4. In a truss band, a suitable band portion provided with a slideway at one end, a
115 rod provided with spiral flutes slidably mounted in said slideway and secured therein against rotative movement and provided with an outer stem portion provided with a headed button and a row of button receiving apertures in the opposite end portion
120 of said band, adapted to button to the headed button of the stem portion of said rod, and a nut housed in said slideway and mounted on said rod and provided with
125 grooves fitting slidably the flutes of said rod, a lever on said nut, and a pad on said lever.

5. In a truss, the combination of a suitable belt portion provided with ends adapt-
130

ed to be detachably connected together, one
of said ends being provided with button re-
ceiving apertures and the other end of
which is provided with a tubular terminal
5 end portion containing a rectangular slide-
way aperture at one end and a round aper-
ture portion at its opposite end portion, and
a transverse slot intermediate of the ends
of its round apertured portion, with a rod
10 having a round portion fitting loosely in
the round apertured portion of said tubular
end, and a rectangular stem portion slidably
mounted in the rectangular aperture of said
tubular end and projecting beyond it and
15 provided at its terminal end with a project-
ing button adapted to button to the but-
ton apertures of the opposite side of said
belt, the said inner end of said rod being
provided with oppositely arranged spiral
20 grooves, a lever having a truss pad at one
end and having its opposite end adapted to
fit loosely in the transverse slot in said tu-
bular end and provided with a spirally
25 grooved aperture arranged and adapted to
fit loosely on said rod and into its spiral

grooves, whereby the reciprocal movement
of said rod imparts an oscillating reciprocating movement to said lever and its truss pad.

6. In a truss as specified, a metal support 30
of suitable form which terminates at one
end in a transversely divided tubular mem-
ber, a spirally grooved sliding rod in said
tubular member, a nut provided with spiral 35
grooves loosely mounted on the slide rod be-
tween the tube members, an arm extending
from said nut provided with a truss pad at
its outer end, and a strap secured to one end
of the metal support, provided at its ter-
40 minal end with a row of button-hole aper-
tures, and a button on the outer end of said
sliding rod arranged to button into said
strap's button holes.

In testimony whereof I affix my signature
in presence of two witnesses.

WILLIAM JONES.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."