E. G. ALLEN.

SHOE STRETCHER.

APPLICATION FILED MAY 28, 1909.

955,449.

Patented Apr. 19, 1910.

3 SHEETS—SHEET 1.

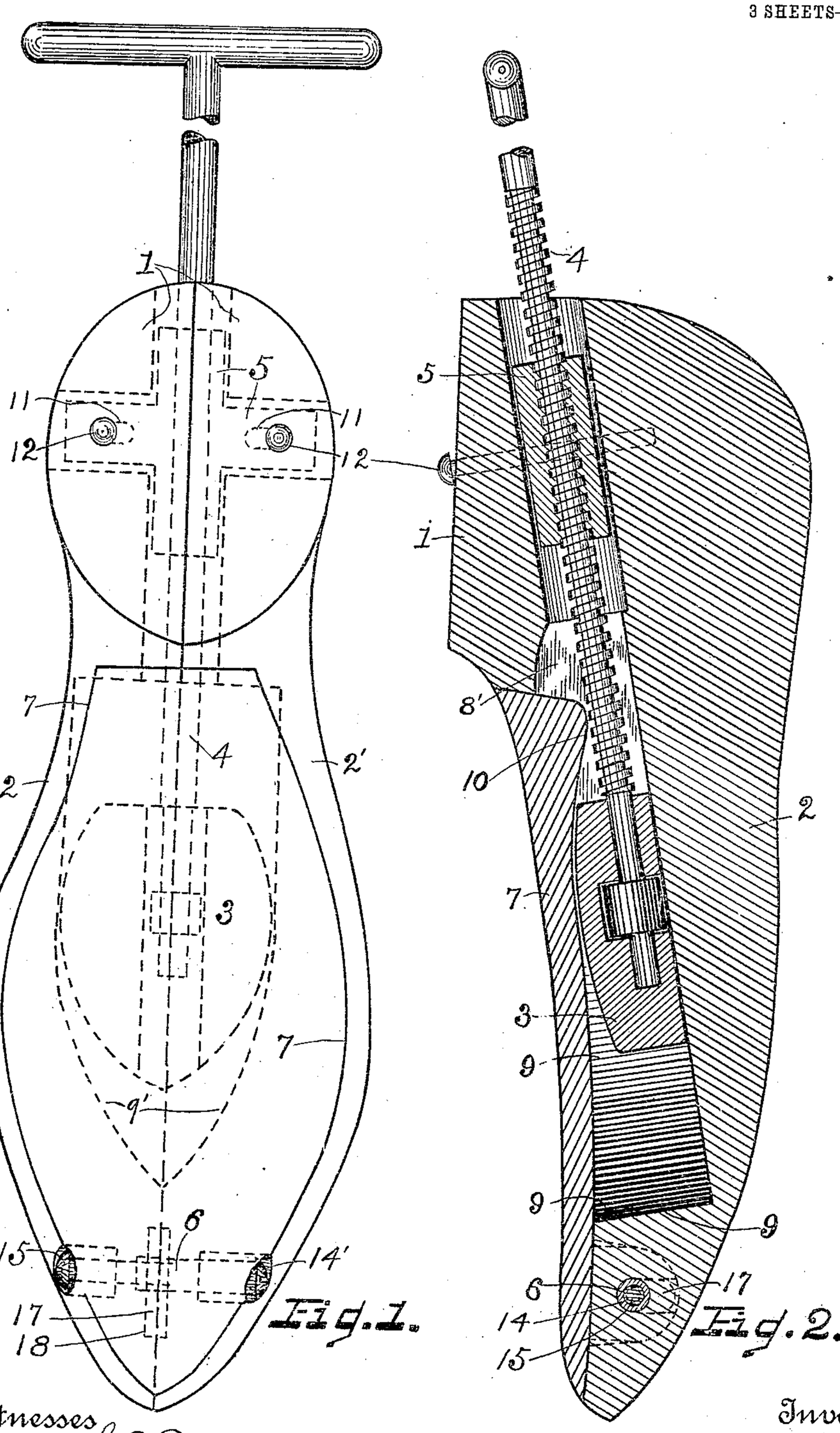

Fig. 1.

Fig. 2.

Witnesses

S. P. Buck.

Lilian M. Gillespie

Inventor,

E. G. Allen.

By Alex. J. Wedderburn, Jr.

Attorney.

E. G. ALLEN.

SHOE STRETCHER.

APPLICATION FILED MAY 28, 1909.

955,449.

Patented Apr. 19, 1910.

3 SHEETS—SHEET 2.

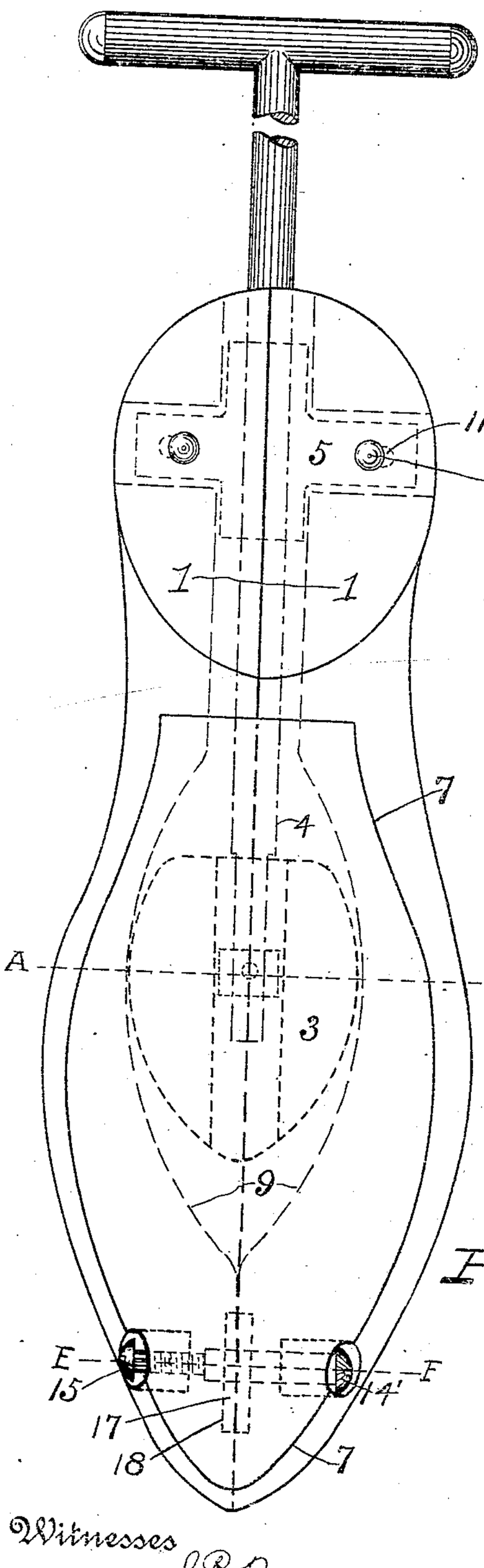

Fig. 3

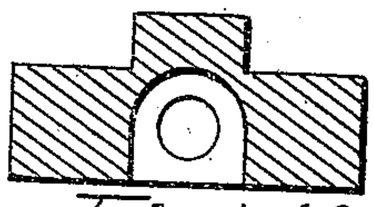

Fig. 10.

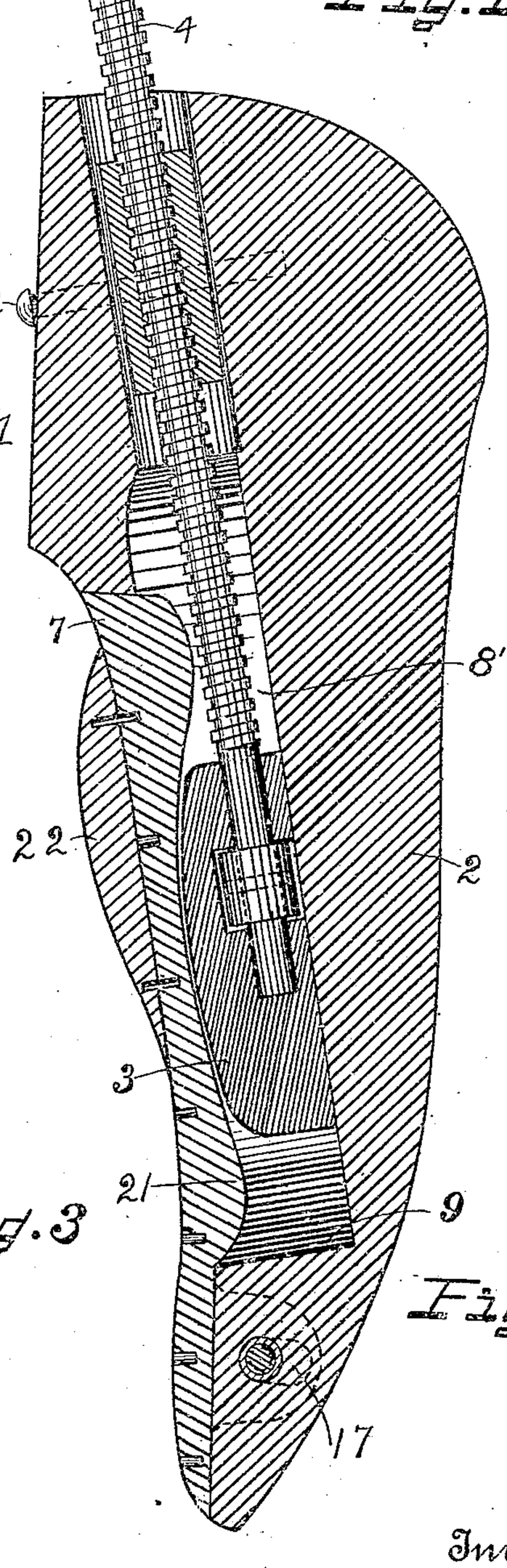

Fig. 4.

Witnesses

S. P. Buck

Lila M. Gillespie

Inventor

E. G. Allen.

By Alex. J. Waddelburn, Jr.

Attorney

E. G. ALLEN.

SHOE STRETCHER.

APPLICATION FILED MAY 28, 1909.

955,449.

Patented Apr. 19, 1910.

3 SHEETS—SHEET 3.

Fig. 5.

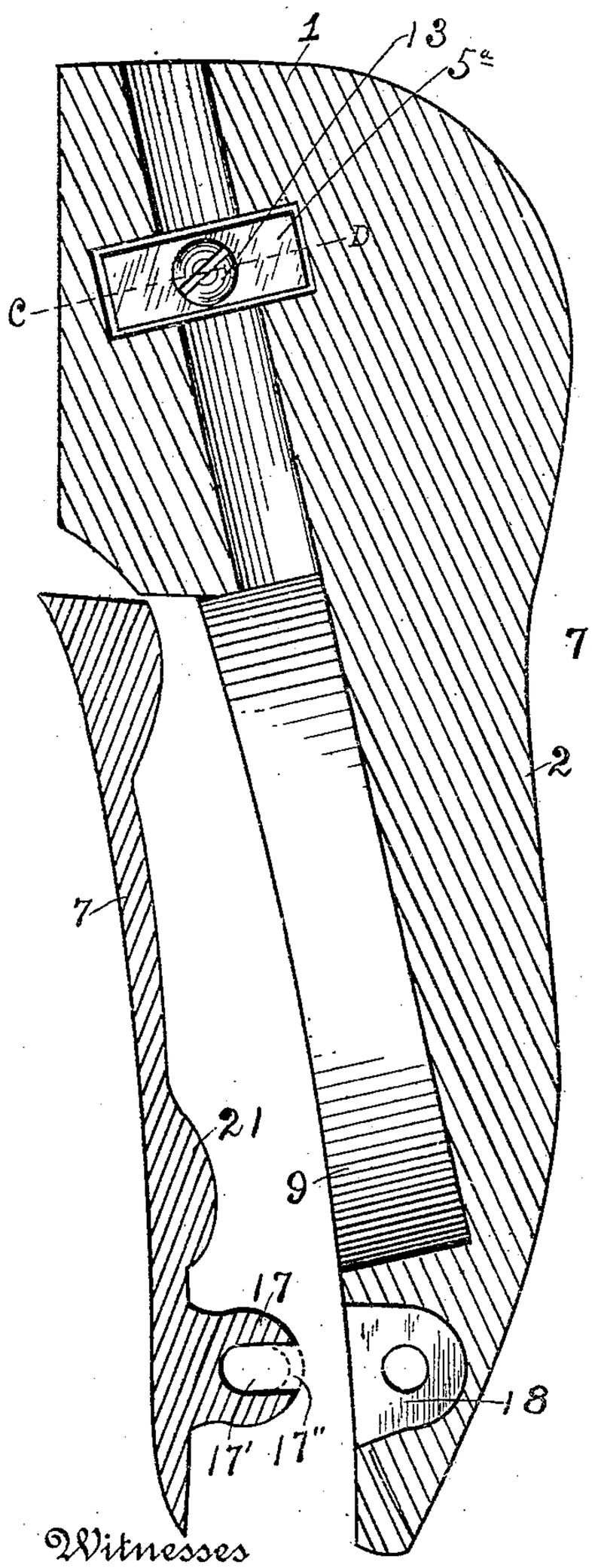

Fig. 6.

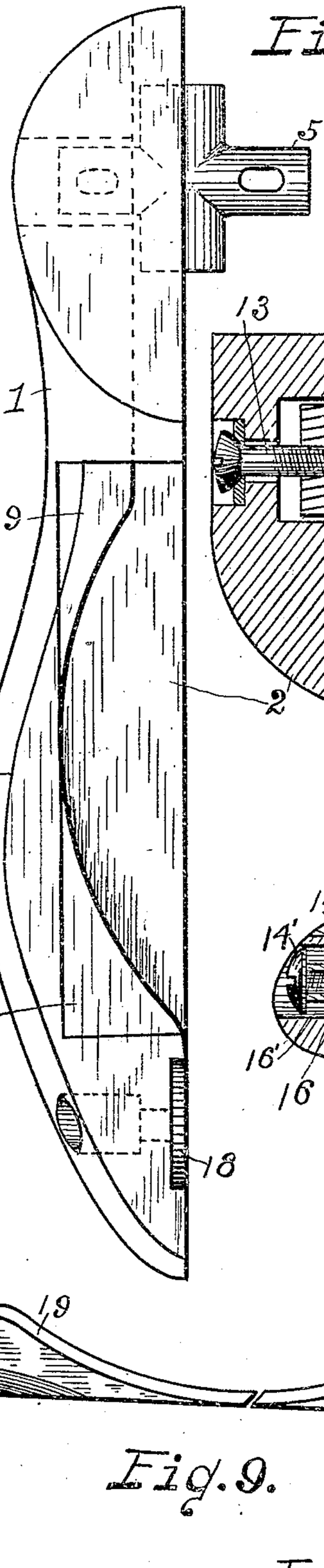

Fig. 7.

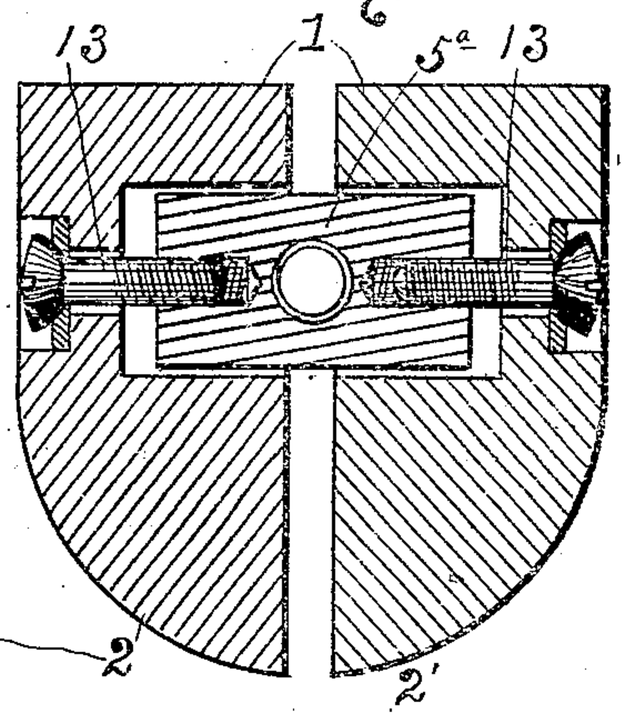

Fig. 8.

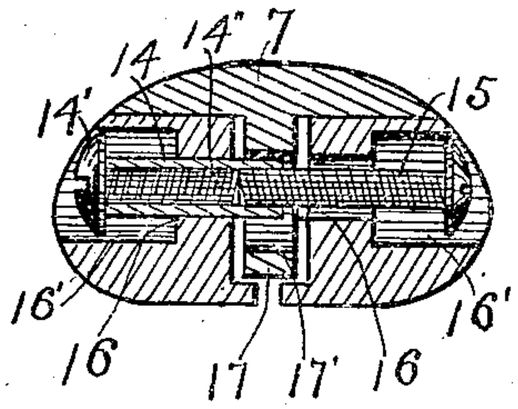

Fig. 9.

Witnesses

S. P. Buck.

Ida M. Gillespie

Inventor,

E. G. Allen.

By Alex. J. Wedderburn, Jr.

Attorney

UNITED STATES PATENT OFFICE.

EDWARD GRAY ALLEN, OF COATESVILLE, PENNSYLVANIA.

SHOE-STRETCHER.

955,449. Specification of Letters Patent. Patented Apr. 19, 1910.

Application filed May 28, 1909. Serial No. 498,916.

To all whom it may concern:

Be it known that I, EDWARD G. ALLEN, citizen of the United States, residing at Coatesville, in the county of Chester and State of Pennsylvania, have invented certain new and useful Improvements in Shoe-Stretchers, of which the following is a specification.

My invention relates to improvements in shoe stretchers in which a spreading member is actuated by a hand screw to wedge the body members apart, and the objects of my invention are,—First, to provide a shoe stretcher imparting horizontal expansion by the operation of rotating the screw in one direction, and vertical expansion by rotating it in the opposite direction. Second, to provide for stretching a shoe at the toe by rotating the hand screw in one direction and at the heel, instep or both, by rotating it in the opposite direction. Third, to provide for stretching a shoe at both heel and toe simultaneously. Fourth, to provide for stretching a shoe at heel, toe and instep simultaneously. Fifth, to provide for stretching a shoe either vertically, horizontally or both, simultaneously and at will of the operator. Sixth, to provide an adjustment for gaging the extent of stretching at the heel, toe and instep of a shoe. I attain these objects by the mechanism illustrated in the accompanying drawings, in which,—

Figure 1 is a plan view of my invention, the interior mechanism shown in broken lines; Fig. 2 is an elevation in section, taken on the longitudinal center of Fig. 1; Fig. 3 is a modification of Fig. 1, in plan; Fig. 4 is an elevation of the same modification as Fig. 3; Fig. 5 is a detail view showing the cap piece removed; Fig. 6 is a plan view of one of the body members with the heel connecting member in its normal position; Fig. 7 is a section taken on the line, *c*—*d*, Fig. 5. Fig. 8 is a section taken on the line, *e*—*f*, Fig. 3. Fig. 9 is a detail in perspective, of the supplementary side wall members; and, Fig. 10 is a sectional view on the line, *a*—*b*, of the spreader.

Referring to the figures, in which similar numerals designate similar parts, throughout; 1 is the body portion, being divided longitudinally by a perpendicular plane near its center, into the body members 2 and 2′. These body members are excavated through and on both sides of this perpendicular plane, at 8, for the reception of a spreader, 3, the actuating screw, 4, and the connecting members, 5 and 6. A cap, 7, is fitted to the top of the body portion, completing its contour into the general shape of a human foot. The spreader, 3, tapers laterally from its middle portion toward each end and slopes from its middle portion toward each end and toward its base which is movably seated on the bottom of the central excavation, 8. The side walls of the excavation, 8, converge in gradual curves to a point, 9, on the central dividing plane, so that when the spreader, 3, is caused to advance from its normal position, by means of the hand screw, 4, it comes into sliding and wedging engagement with the walls, 9′, causing them to separate and to spread at the toe the shoe into which it is inserted. The cap, 7, is provided with a downward extending portion, 10, which has sliding engagement with the spreader, 3, when moved backward from its normal position; thereby wedging under extension, 10, lifting it upward and stretching the instep of the shoe into which it is inserted. The connecting member, 5, is provided with oblong holes, 11, through which pins, 12, are inserted into, and uniting, the body members. The oblong shape of these holes permits of the necessary play between the body members. The connecting member, 5, serves also as a nut for the hand screw, which is swivelly connected with spreader, 3.

A modification, 5ª, of the connecting member is shown in Figs. 5 and 7, in which the pins, 12, are dispensed with and screws, 13, are used, by which adjustment may be made for limiting the extent of expansion at the heel; which is accomplished by screwing or unscrewing according to the nature of the change desired. A similar adjustment to the one just described is provided for regulating the amount of expansion at the toe; as shown in detail at Fig. 8, in which a cylindrical body, 14, having a screw head, 14′, and an internal thread, 14″, into which a screw, 15, is threaded, is seated in the hole, 16, having enlarged portions, 16′, which extend inwardly sufficient to permit of the necessary play and spread of the body members at the toe; the limit of the toe spread being adjustable by tightening or loosening these screws, which also serve as a hinge center for the cap, which has a lug 17, provided with an oblong hole, 17′, or a notch 17″, which lug is inclosed by the recess, 18, and which hole or notch engages the thread-

ed cylinder, 14, as a hinge center. Hole 17′ is made oblong to allow the cap, 7, to be raised at the toe when wedged upward by the top part of the spreader. The notch, 17″ is a modification of 17′, its purpose being to facilitate the removal of the cap, 7.

In certain cases it is desirable to stretch the shoe in one place only and at other times, to stretch it in several places simultaneously. Provision is made for such contingencies by the employment of supplementary members, 19 and 20; in the use of which the cavity at 8′ and 9′ is formed to receive these supplementary parts in such a way that they constitute the side walls of the cavity and are adapted for wedging engagement with the spreader, 7, for stretching the shoe at the point or points desired. Another supplementary part, 21, is designed for raising the cap at the toe when desired to stretch the shoe at that point, by wedging the spreader thereunder. An instep piece 22 is also a supplementary member, intended for increasing the amount of stretch at that point.

It is obvious that by proper application of these supplementary parts, the shoe may be expanded at the heel, toe, instep, or at all three parts simultaneously or separately; that vertical or horizontal expansion at the toe, instep or both simultaneously, may be obtained.

In operating this stretcher, it is first adjusted to its normal position by rotating the hand screw, 4, until the spreader is out of engagement with the cap and side walls; the necessary changes of the supplementary parts then being made, the stretcher is then inserted in the shoe and the hand screw, 4, is rotated to right or left according to which portion of the shoe it is desired to stretch.

I claim as my invention,—

1. A shoe stretcher comprising a divided body portion, an instep engaging member movable on the body portion and provided with an inward projection, a spreader adapted to close and open the parts of the body portion and to move the instep engaging member, a screw swiveled to the spreader, a nut for the screw, and means for limiting the outward movement of the body portion.

2. In combination, a pair of members formed to fit a shoe, each of said members being hollowed out to form an inner cavity the walls of which are inclined, means for movably holding the toe portions together, an instep engaging member having a projection engaging said toe holding means and a projection extending into the cavity, a threaded nut slidably secured to the heel portions of the members, a screw projecting through the nut and a spreader having an inclined top for engaging the instep member and inclined sides for engaging the inclined walls of the members and swiveled to the screw.

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

EDWARD GRAY ALLEN.

Witnesses:

HARRY S. WOODWARD,

HORACE N. WOODRUFF.