

S. H. WHITTLESEY.

Improvement in Counter Limb Extensors.

No. 132,509.

Patented Oct. 22, 1872.

Fig: 1

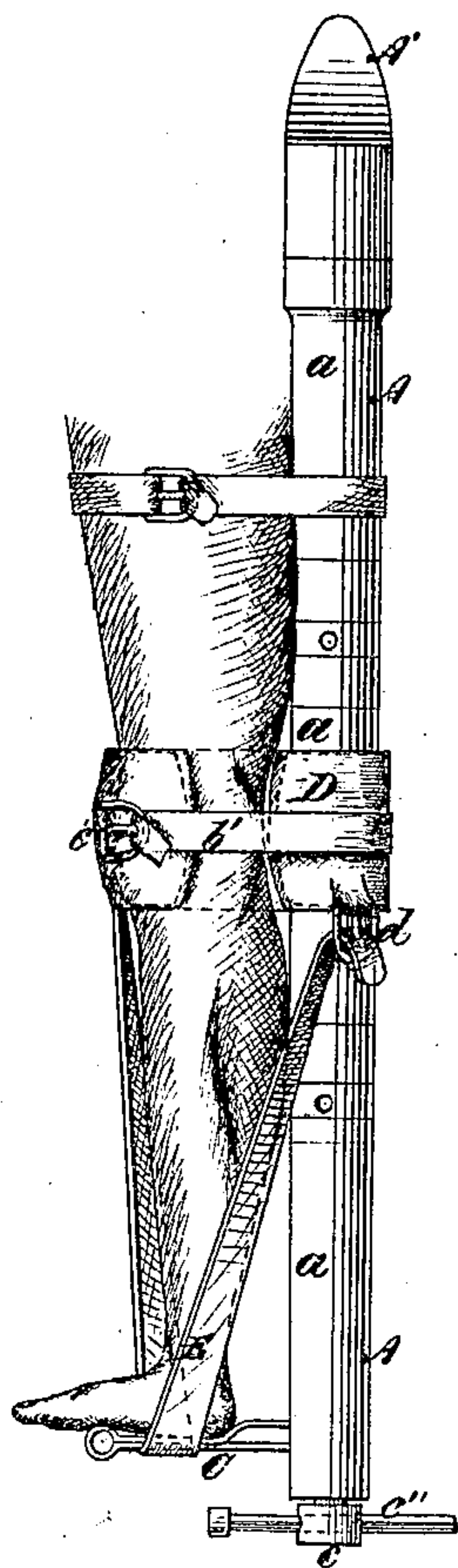


Fig: 2

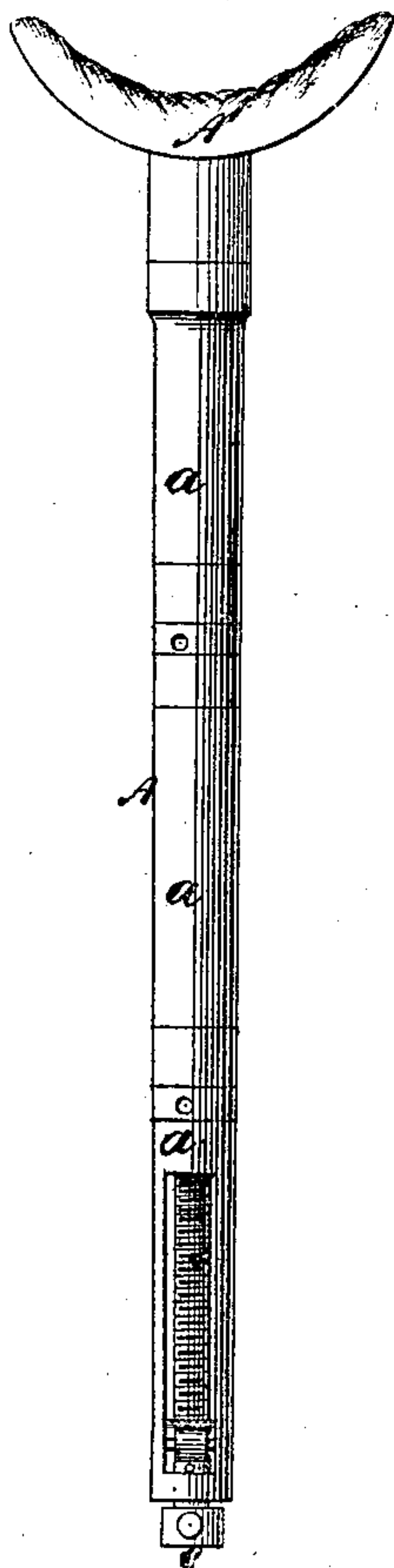
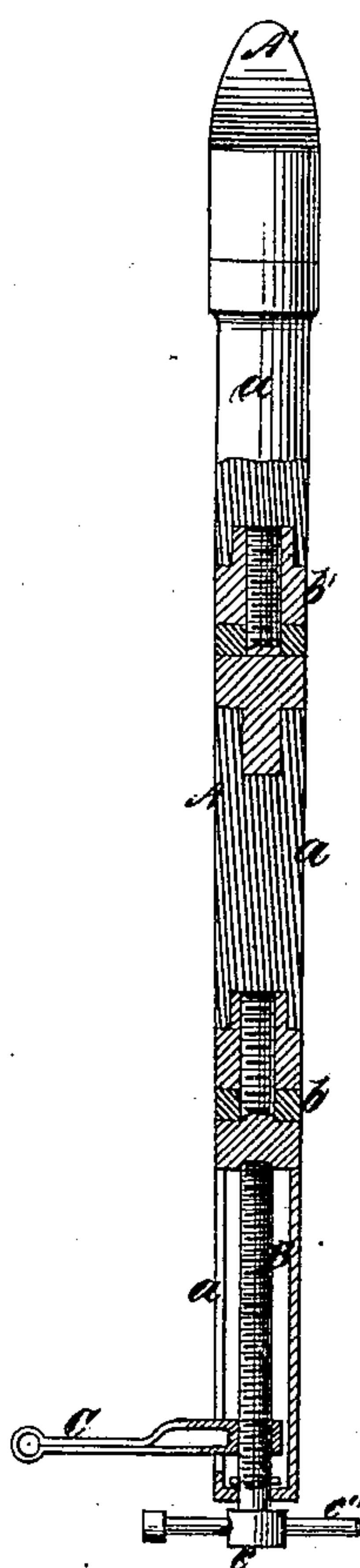


Fig: 3



Witnesses:  
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# UNITED STATES PATENT OFFICE.

SAMUEL H. WHITTLESEY, OF CENTRAL MINE, MICHIGAN.

## IMPROVEMENT IN COUNTER LIMB EXTENSORS.

Specification forming part of Letters Patent No. **132,509**, dated October 22, 1872.

*To all whom it may concern:*

Be it known that I, SAMUEL H. WHITTLESEY, of Central Mine, in the county of Keeweenaw and State of Michigan, have invented certain Improvements in Counter Limb Extensors, of which the following is a specification:

This invention relates to that class of implements used by surgeons in setting and adjusting dislocated or fractured limbs; and its object is to provide a means more efficient, convenient, and easily manipulated when in use than the devices hitherto employed for such purposes. The invention consists in the construction of the shaft in sections, so made and proportioned that by the removal of one of the sections from the shaft as used upon the lower limbs, it may be shortened as required for use or operation upon the arms.

Figure 1 is a side view of an apparatus constructed according to my invention, showing the application of the same to one of the lower limbs. Fig. 2 is a side view of the same. Fig. 3 is a longitudinal section of the same taken in a plane corresponding to Fig. 1.

A is the shaft composed of three sections, *a*, united by screw-joints, as shown at *b* in Fig. 3. These sections are severally of such length that when all are used the shaft will be of the length ordinarily required in the treatment of fracture or dislocation of the lower limbs, but when the central one is removed and the upper and lower screwed together the shaft will be reduced to the length requisite in the management of such injuries in the arm, shoulder, &c. Upon the top of the uppermost section is a head piece or bearer, *A*<sup>1</sup>, which, when the instrument is applied to the leg, rests in the groin, and when to the arm, in the axilla, in either case securing the point of resistance essential in the extension of the limb under treatment. The lowermost section is hollow, or of tubular form, and is furnished internally with a longitudinal screw, B, the lower end of which projects beyond the extremity of the shaft A, and has a head, *c*, through a transverse hole in which is passed a handle, *c*'', by which the screw may be turned. In one side of the lower section, just mentioned, of the shaft, is a longitudinal slot, which affords room for the movement of the

tractor represented in the drawing as a foot-piece, C, projecting at right angles to the shaft, as shown in Figs. 1 and 3, and the inner portion of which constitutes a nut upon the screw B, so that by turning the screw in one direction or the other the nut, and consequently the tractor or foot piece, will be raised or lowered, as the case may be. D is a band or flexible clasp of any suitable material and requisite width, preferably connected at its ends by a strap, *b*', and buckle *c*', and at points opposite each other when in use, with buckles *d* for the attachment of the tractor-strap E. In the use of the apparatus—for example, as indicated in the drawing—in case of a dislocation or fracture of the leg or hip, the shaft is applied to the limb with its head piece or bearing against the groin and the foot piece or tractor underneath the foot, as shown in Fig. 1. The band D is applied around the shaft and limb to confine the same together, and the strap E is brought under the foot-piece and buckled tight from one of the buckles *d*. A supplemental band, F, may also be applied at any suitable point with reference to the other. Assuming that the shortening of the limb is required, it will be seen that the bands would afford points of resistance in such wise that by turning the screw to move the foot-piece upward a compressing force would be brought to bear upon that portion of the limb between the foot-piece and the lower band, thereby securing the result in such case desired. But assuming the foot to be secured by any suitable means to the foot-piece, as by a gaiter placed on the foot and strapped to the foot-piece, it will be seen that by turning the screw to lower the foot-piece the limb would be extended, the point of resistance in this case being afforded by the head-piece of the shaft arranged against the groin, as previously herein specified. The precise mode of applying the instrument will of course vary with the place and character of the location of the injury, and must in a measure depend upon the judgment of the surgeon; in all cases, however, the essential principle of operation remaining the same, to wit: In counter-extensions the shortening of the distance between the foot-piece or its equivalent and the point of resistance and in extension, upon the length-

ening or increase of such distance, by the action of the tractor of the screw, the whole assisted when in operation by suitably provided bands, the same as or equivalent to the band D and strap E.

It will be seen from the foregoing description that this instrument may be strong and at the same time comparatively light; that it combines simplicity of construction with efficiency of operation; that it may be used with entire safety to the patient and with the least possible pain and annoyance; that it may be readily applied and used by one person without assistance; and that it may

be used in a widely varied and difficult class of surgical operations.

What I claim as my invention is—

The construction of the shaft A carrying the screw and tractor, in sections so proportioned and arranged that the shaft may be elongated or shortened according as required for use upon adults or children, or upon the lower or the upper limbs, substantially as herein set forth.

SAMUEL H. WHITTLESEY.

Witnesses:

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