

March 6, 1934.

E. E. LONGFELLOW

1,949,969

SKELETAL TRACTOR FOR SURGICAL TREATMENT OF FRACTURES

Filed March 14, 1932

Fig. 1.

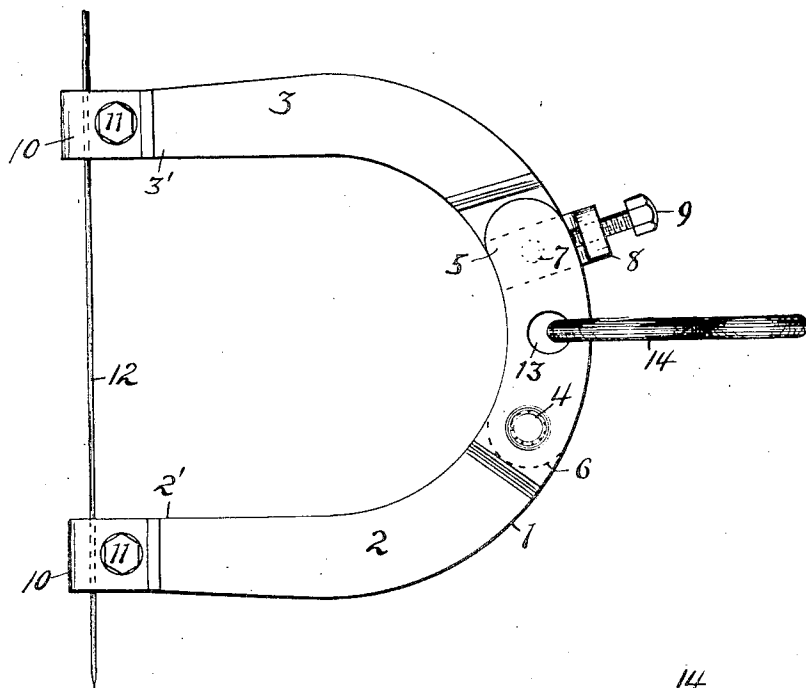


Fig. 2.

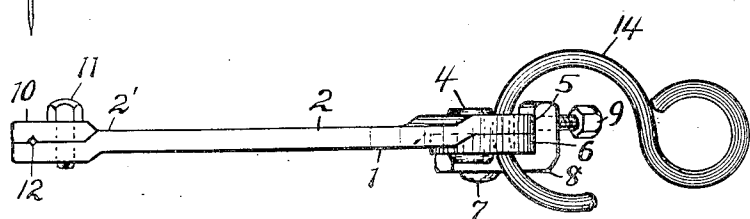
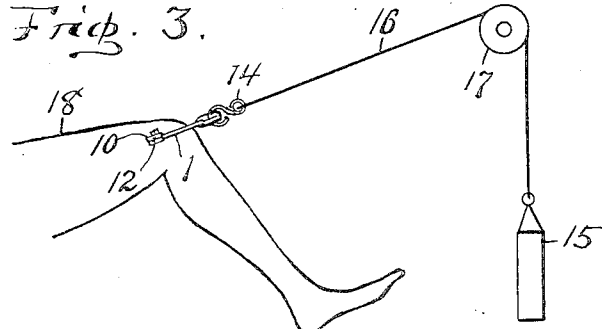


Fig. 3.



Carl E. Longfellow INVENTOR.

BY

H. G. Burns ATTORNEY.

UNITED STATES PATENT OFFICE

1,949,969

SKELETAL TRACTOR FOR SURGICAL
TREATMENT OF FRACTURESEarl E. Longfellow, Warsaw, Ind., assignor to
Harry Herschel Leiter, Warsaw, Ind.

Application March 14, 1932, Serial No. 598,565

1 Claim. (Cl. 128—84)

This invention relates to improvements in skeletal tractors for surgical treatment of fractures, and the object thereof is to provide a simple and efficient expedient for applying traction directly to the bone of a fractured member, and more particularly for making connection with the bone.

An illustrative embodiment of the invention is shown in the accompanying drawing, in which:—
Fig. 1 is a plan view of an anchor in which the invention is embodied;

Fig. 2 is a side view projected from Fig. 1; and
Fig. 3 is a diagram of the invention in use.

The illustrative embodiment of the invention consists of a U-shaped anchor 1 formed of two oppositely curved arms 2 and 3 connected together by a pivot 4. The inner end 5 of the arm 2 overlaps the inner end 6 of the arm 3 and the pivot is located at a point adjacent the extreme inner end of the arm 3 and spaced from the inner end of the arm 2. Thus, the overlapping end 5 of the arm 2 constitutes a lever movable upon the axis of the pivot.

The arm 3 has secured thereto by means of a rivet 7 a bracket 8, a portion of which extends upwardly into the path of the lever 5 and is provided with an adjusting screw 9 that bears against the adjacent outer face of the lever, so that by manipulating the screw the arms 2 and 3 are adjustably turned upon their pivotal connection 4, whereupon the outer ends 2' and 3' are spread apart accordingly.

The outer ends of the arm have fitted thereon corresponding blocks 10 that are secured to the arms by screws 11 and are disposed to have clamping engagement with an anchor pin 12 when positioned transversely with respect to the arms between the blocks and adjacent faces of the arms upon tightening of the screws. In this manner longitudinal movement of the anchor pin relative to the respective arms is prevented.

The overlapping ends 5 and 6 of the arms are provided with openings 13 extending therethrough for the reception of a coupling hook 14, the openings being of sufficient size as to permit relative pivotal movement of the arms when the hook is in place and adjustment is made by turning the screw 9.

In applying the invention, the anchor pin, which consists of a thin pointed wire, is inserted through the flesh and bone of the member 18 to

be treated, the bone being drilled through to accommodate the pin by rotating the pin upon its axis and applying pressure longitudinally thereto with the use of any suitable instrument (not shown). When installed in operative position the ends of the pin project from the flesh on the corresponding sides of the member. The pin is then secured to the anchor by clamping its projecting ends firmly between the outer ends of the respective arms and their blocks, after which the adjusting screw 9 is tightened against the lever 5 so the arms of the anchor tend to spread outwardly. In this manner the anchor pin is held under sufficient tension as to prevent flexure thereof.

Traction is applied to the anchor by any suitable means, such as a weight 15 which is conveniently connected with the coupling hook 14 through the medium of a cable 16 strung over a pulley 17 in the usual manner.

A material advantage of the invention is that by sustaining the anchor-pin under high tension a pin of very small diameter may be used which requires only a correspondingly small perforation to be made in the bone, and furthermore, flexure of the pin due to the lateral strain thereon imposed by the weight, and consequent lateral pressure of the pin against the adjacent flesh is substantially obviated.

I claim:

A surgical tractor appliance consisting of a U-shaped anchor formed of two similar oppositely curved arms, the inner ends of which overlap each other, a pivot connecting the inner end of one arm with the other arm, a bracket secured to said one arm provided with a set-screw that bears against the rear face of the overlapping end of said other arm for adjustably turning said arms relatively upon their pivotal connection, the overlapping portions of said arms having openings extending therethrough at a point midway between their inner ends, a clamping means secured to the outer end of each of said arms applicable to an anchor pin, and a coupling hook having a portion extending through the openings in the overlapping ends of said arms, said extending portion and the openings being proportioned so as to permit and limit relative movement of said arms upon their pivotal connection.

EARL E. LONGFELLOW.