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M. H. BLOOMBERG

2,295,253

FRACTURE ALIGNER

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Fig. 1.

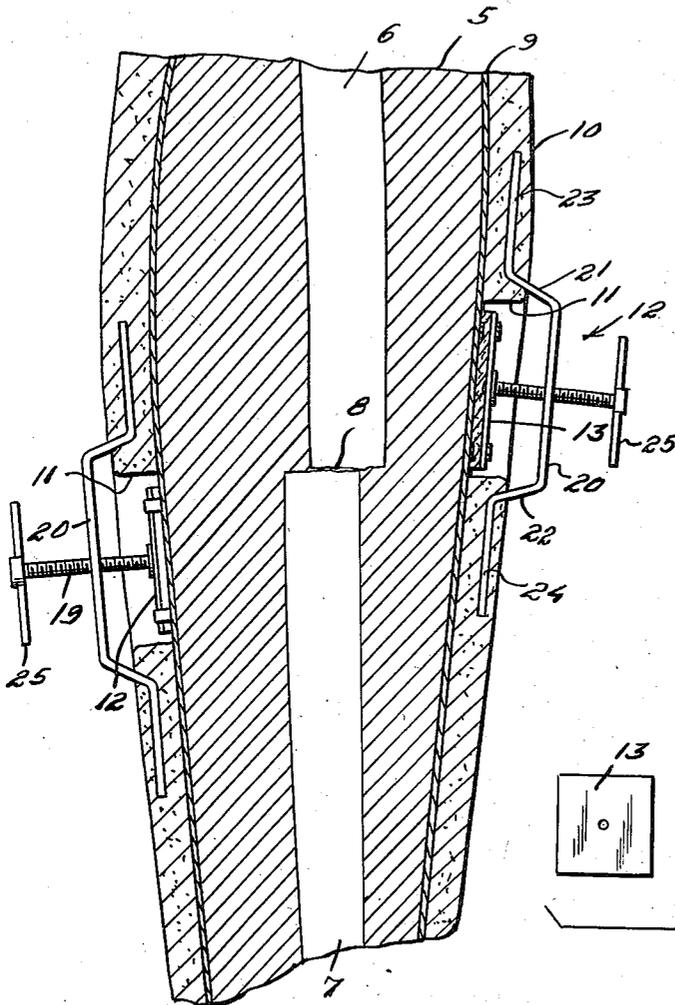


Fig. 2.

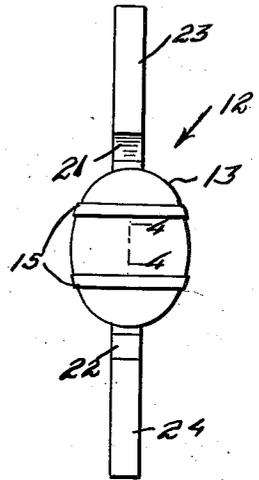
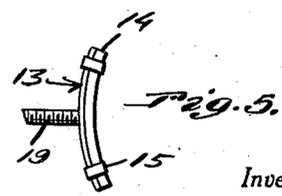
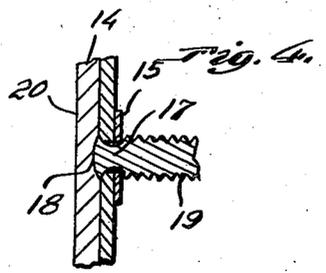
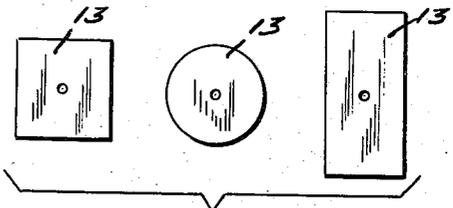


Fig. 3.



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FRACTURE ALIGNER

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4 Claims. (Cl. 128—84)

My invention relates to improved means for aligning bone fractures in the limbs and other parts of the body, and the primary object of my invention is to provide simplified, inexpensive apparatus which is readily applied and permanently incorporated in the cast covering the fracture.

Other important objects and advantages of my invention will be apparent from a reading of the following description and the appended drawing wherein for purposes of illustration I have shown a preferred embodiment of my invention.

In the drawing—

Figure 1 is a fragmentary longitudinal sectional view taken through a limb encased in a plaster cast and containing a fractured bone, and showing use of the present aligner.

Figure 2 is a bottom plan view of the aligner.

Figure 3 is a group view showing different shapes of pressure plates for the aligner.

Figure 4 is an enlarged fragmentary sectional view taken along the line 4—4 of Figure 2, and,

Figure 5 is an end or side elevational view of a covered form of pressure plate.

Referring in detail to the drawing, the numeral 5 generally designates the fleshy and muscular part of the limb containing the misaligned bone parts 6 and 7, respectively, on opposite sides of the fracture or break 8. The numeral 9 designates the usual cotton or other fabric cushion immediately contacting the limb and which is enclosed in the usual manner by the plaster cast 10.

In practicing the present invention one or more windows 11 are cut through the plaster cast to the cushion 9 to freely accept the pressure plate 13 of the aligner which is generally designated 12, the resultant position of the pressure plate being predetermined by the bone displacement to be effected. In Figure 1, at the left the pressure plate is in position to be operated to deflect the lower bone part 7 toward the right, while the pressure plate on the opposite side is conditioned to deflect the upper bone part 6 toward the left to achieve alignment of the bone parts 6 and 7 at the break 8.

The pressure plates may be round, square, elliptical, or elongated rectangular and have flat or curved cross sections in accordance with requirements. Each pressure plate is characterized by a pad 14 of felt or of rubber or of a combination of these, on its bottom, the pad being removably held in place by temporary loops or bands of adhesive tape designated 15.

Each pressure plate has a centralized hole 16

formed therethrough to loosely accept the reduced shank 17 behind the retaining head 18 on the pressure screw 19, whereby the plate is swivelly mounted on and carried by the screw.

The screw 19 is threaded through the middle of the rigid metal bar 20 which has angular arms 21 and 22, respectively, projecting from its ends toward the pressure plate and terminating in straight extensions 23, 24, respectively, which are substantially parallel to the main bar 20.

The main bar 20 is held in place over and bridging the window 11 in the cast 10 by embedding the extensions 23 and 24 in fresh plaster at opposite sides of the windows so as to permanently assemble the aligner with the cast. The aligner is put on the cast only after the cast has set and thoroughly dried.

The outer end of the pressure screw 19 has a suitable handle 25 whereby the pressure pad may be operated with its pad 14 contacting the cast cushion 9 to apply the necessary pressure to the fleshy and muscular part of the limb and thereby to the bone part so as to deflect the bone as required.

Although I have shown and described herein preferred embodiments of my invention, it is to be definitely understood that I do not wish to limit the application of the invention thereto, except as may be required by the scope of the subjoined claims.

What is claimed is:

1. In combination, a plaster cast encasing a limb containing bone parts to be aligned, said cast having a window formed therein at the side of a break or fracture, a bone aligner comprising a support bridging said window and secured to the cast, a screw threaded in said support, and a pressure plate carried by the inner end of said screw within said window, said screw being arranged to be operated to force said pressure plate against the limb exposed by said window to deflect the corresponding bone part.

2. In combination, a plaster cast encasing a limb containing bone parts to be aligned, said cast having a window formed therein at the side of a break or fracture, a bone aligner comprising a support bridging said window and having ends anchored in the cast, a screw threaded in said support, and a pressure plate carried by the inner end of said screw within said window, said screw being arranged to be operated to force said pressure plate against the limb exposed by said window to deflect the corresponding bone part.

3. In combination, a plaster cast encasing a

limb containing bone parts to be aligned, said cast having a window formed therein at the side of a break or fracture, a bone aligner comprising a support bridging said window and secured to the cast, a screw threaded in said support, a pressure plate carried by the inner end of said screw within said window, said screw being arranged to be operated to force said pressure plate against the limb exposed by said window to deflect the corresponding bone part, and extensions on the opposite ends of said support, said extensions comprising portions deflected to the

same side of said support as said pressure plate and substantially parallel with said support.

5 4. A fracture aligner comprising a pair of relatively rigid main bars adapted for positioning respectively above and below a fracture at opposite sides thereof, pressure screws threaded through said bars, and pressure plates swivelly mounted on the inner ends of said screws and adapted upon actuation of the screws to exert
10 opposite pressure on the fracture.

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