July 18, 1933. J. G. FORSYTHE 1,918,745

ADJUSTABLE SHORE

Filed April 24, 1931

Fig. 1.

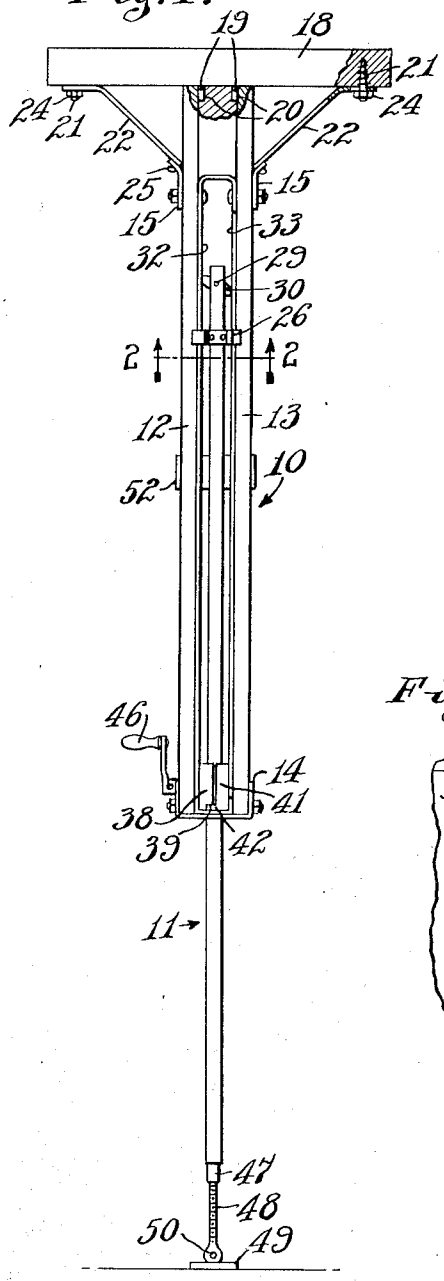


Fig. 2.

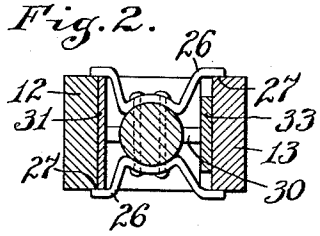


Fig. 3.

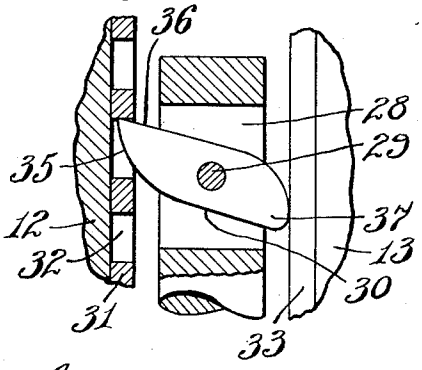


Fig. 4.

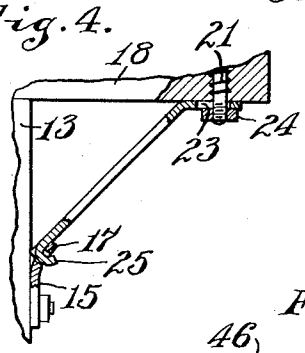
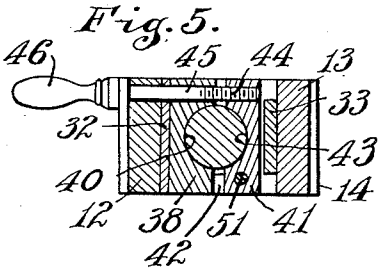


Fig. 5.



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UNITED STATES PATENT OFFICE

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ADJUSTABLE SHORE

Application filed April 24, 1931. Serial No. 532,489.

The present application relates to an adjustable shore, and the primary object of the invention is to provide a device of the type indicated which shall combine with unusual simplicity of construction, unusual efficiency, and simplicity of operation. Further objects of the invention will appear as the description proceeds.

To the accomplishment of the above and related objects, my invention may be embodied in the form illustrated in the accompanying drawing, attention being called to the fact, however, that the drawing is illustrative only, and that change may be made in the specific construction illustrated and described, so long as the scope of the appended claims is not violated.

Fig. 1 is a front elevation of a shore constructed in accordance with my invention;

Fig. 2 is a sectional view taken substantially on the line 2—2 of Fig. 1 and looking in the direction of the arrows;

Fig. 3 is a fragmental sectional view illustrating a detail;

Fig. 4 is a fragmental sectional view illustrating a further detail; and

Fig. 5 is a section taken substantially upon the line 5—5 of Fig. 1.

Referring more particularly to the drawing, it will be seen that I have illustrated a shore comprising an upper section 10 and a lower section 11. Section 10 is made up of a plurality of elements, two of said elements, 12 and 13, being spaced apart to form a longitudinally extending opening in which is telescopically received the upper portion of the lower section 11. The lower ends of the elements 12 and 13 are secured together by means of a bracket 14, and said bracket is formed with an aperture through which the lower section 11 slides.

Adjacent the upper end of the upper section 10 there are mounted a pair of ears 15, each of which is inclined outwardly at its upper end and is formed, in its upper end, with an eye 17. A cross arm 18 is provided adjacent its mid point with a pair of pins 19 adapted to be received in suitably provided sockets 20 in the upper end of the section 10. The cross arm 18 carries adjacent its opposite ends a pair of threaded pins 21, and brace members 22 may be secured to said pins 21, as illustrated. Each brace member 22 is formed at one end with a slot 23 adapted to be sleeved over a pin 21, and nuts 24 may be threaded onto the pins 21 to clamp the brace members 22 in position. Each brace member 22 is formed adjacent its opposite end with a hook 25 adapted to engage in the eye 17 of one of the ears 15.

This construction provides for the easy removal of the cross arm 18, or for the substitution of cross arms of varying sizes, for use in particular situations.

Adjacent its upper end, the lower section 11 carries a clip 26 providing four bearing surfaces 27 slidably engaging the elements 12 and 13 of the upper section 10, thus steadying the movement of the lower section relative to the upper section. Adjacent its extreme upper end, the lower section 11 is formed with a transverse slot 28 therethrough, and a pin 29, mounted in and traversing said slot, provides a pivotal mounting for a pawl 30. The element 12 of the upper section 10 has mounted on its inner surface a ratchet plate 31 formed with a plurality of longitudinally spaced sockets or notches 32. The element 13 of the upper section 10 carries on its inner surface a wear plate 33 which may be integral with the plate 31, but may be a separate element. The pawl 30 is formed at one end with a cam surface 35 and with a straight surface 36 whereby, as the upper section 10 tends to move downwardly with respect to the lower section 11, the surface 36 will engage with the upper wall of one of the notches 32 to lock said upper section against further downward movement; and whereby, as the upper section 10 is moved upwardly, with respect to the lower section 11, the surface 35 will be engaged by the lower wall of such notch to swing said pawl in a clockwise direction, as viewed in Fig. 3, out of the path of the plate 31.

The opposite end 37 of the pawl 30 is formed with a cam surface adapted, when said first-mentioned pawl end is engaged in one of the notches 32, to wedge against the wear plate 33, as illustrated in Fig. 3. Such

wedging not only locks the pawl against further counter clockwise rotation, but further acts to guard against collapse of the elements 12 and 13 and acts to hold the upper end of the section 11 against transverse wabbling.

Adjacent its lower end, the upper section 10 carries a block 38, said block being formed with a notch providing a downwardly facing shoulder 39 adjacent the lower end thereof. The block 38 is further formed with a substantially semi-cylindrical groove 40 in its free surface, said groove extending longitudinally of the section 10. A second block 41 is loosely pivotally mounted upon the bracket 14 through the medium of a pin 51, and said block 41 is formed adjacent its lower end with a lateral extension 42 extending beneath and cooperating with the shoulder 39. The block 41 is further formed with a substantially semi-cylindrical groove 43 registering with the groove 40 and forming therewith a sleeve in which the lower section 11 is slidably mounted. The block 41 is formed with one or more threaded sockets 44 into each of which extends the threaded end of a shaft 45, each of said shafts being provided with an operating handle 46 and projecting, with a sloppy fit, through the element 12. As will be obvious, the handle or handles 46 may be operated to draw the block 41 toward the block 38, thus gripping or clamping the lower section 11 between the blocks 38 and 41, to hold that portion of the lower section which is received therebetween perfectly rigid with respect to the upper section 10.

The structure above described provides admirably for a relatively rough adjustment of the elements of the shore, and I prefer to provide separate means for effecting a final fine adjustment of the sections. Such means preferably comprises a threaded sleeve 47 secured to the lower end of the lower section 11 and threadedly receiving a shank 48 to the lower end of which is swivelled a foot 49. The shank 48 is preferably formed with an aperture 50 therethrough for the reception of a bar, whereby said shank may be rotated with respect to the section 11 to effect adjustment of said section with respect to the foot 49.

A U-shaped brace 52 is desirably secured, by screws or bolts or the like, in embracing relation with the elements 12 and 13 to prevent spreading of said elements, said brace preferably being located substantially midway between the ends of the unsupported portions of said elements.

I claim as my invention:

1. An adjustable shore comprising an upper section and a lower section, said upper section including a pair of spaced elements and the upper end of said lower section being slidable between said elements, one of said elements being formed with a series of notches, and a pawl carried by said upper end of said lower section and cooperable with said notches normally to hold said upper section against downward movement with respect to said lower section, said pawl being formed to wedge against the other of said elements when engaged in one of said notches.

2. An adjustable shore comprising an upper section and a lower section, said upper section including a pair of spaced elements and the upper end of said lower section being slidable between said elements, a ratchet plate mounted on the inner surface of one of said elements, a wear plate mounted on the inner surface of the other of said elements and a pawl carried by said upper end of said lower section, said pawl being formed with an arm engageable with said ratchet plate, and with a second arm engageable with said wear plate.

3. An adjustable shore comprising an upper section and a lower section, said upper section including a pair of spaced elements and the upper end of said lower section being slidable between said elements, a ratchet plate mounted on the inner surface of one of said elements, a wear plate mounted on the inner surface of the other of said elements, said upper end of said lower section being formed with a transverse slot therethrough, and a pawl pivotally mounted in said slot, one end of said pawl being positioned for cooperation with said ratchet plate, and the other end of said pawl being cooperable with said wear plate.

4. An adjustable shore comprising an upper section and a lower section, said upper section including a pair of spaced elements and the upper end of said lower section being slidable between said elements, a ratchet plate mounted on the inner surface of one of said elements a wear plate mounted on the inner surface of the other of said elements, said upper end of said lower section being formed with a transverse slot therethrough, and a pawl pivotally mounted in said slot, one end of said pawl being adapted to engage with said ratchet plate, and the other end of said pawl being formed as a cam and being forced into wedging engagement with said wear plate upon engagement of said first-named pawl end with said ratchet plate.

5. An adjustable shore comprising an upper section and a lower section telescopically associated with said upper section, means carried by said lower section and engageable with an element of said upper section for locking said upper section against downward movement with respect to said lower section, a pair of relatively movable blocks carried by said upper section, and means for forcing said blocks into gripping relation with said lower section.

6. An adjustable shore comprising an upper section and a lower section telescopically associated with said upper section, means car-

ried by said lower section and engageable with an element of said upper section for locking said upper section against downward movement with respect to said lower section, a block secured to said upper section, said block being formed with a downwardly facing shoulder and with a substantially semi-cylindrical groove therein extending longitudinally of said upper section, a second block having a lip extending beneath and cooperating with said shoulder and formed with a substantially semi-cylindrical groove registering with the groove in said first-named block, said lower section being slidably received in said block grooves, and means for shifting said second block to grip said lower section between said second block and said first block.

JOE G. FORSYTHE.