Dec. 8, 1925. 1,564,642

A. H. SYMONS

SHORE

Filed July 20, 1922

Fig. 1

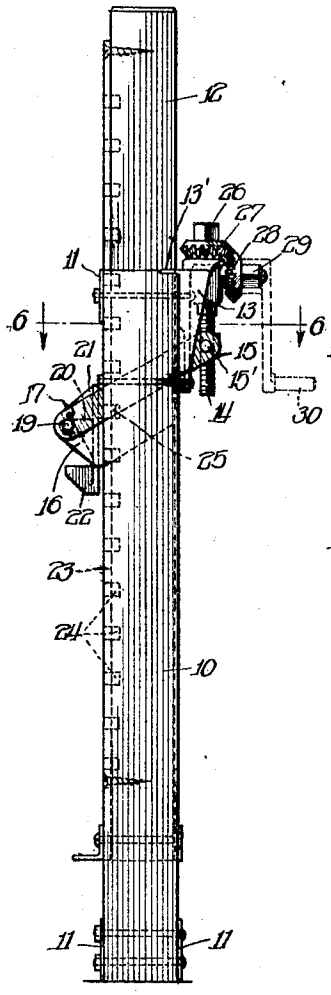


Fig. 2

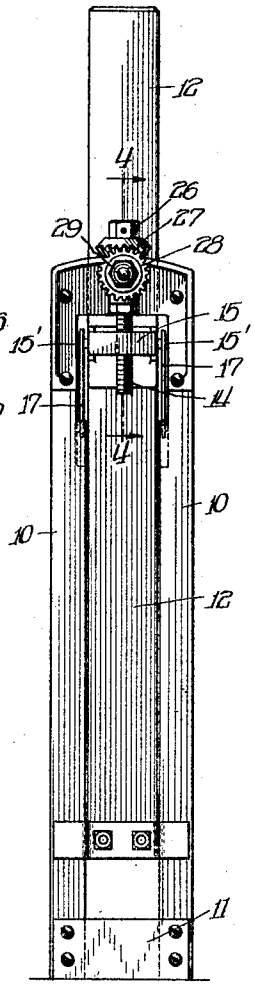


Fig. 3

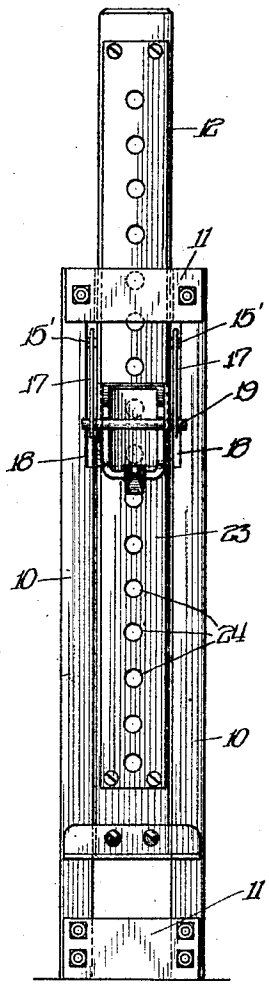


Fig. 4

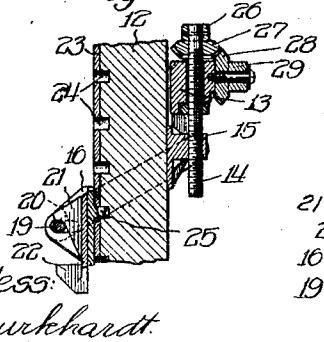


Fig. 5.

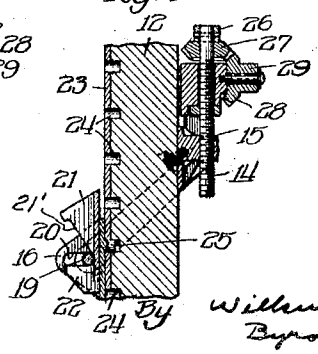
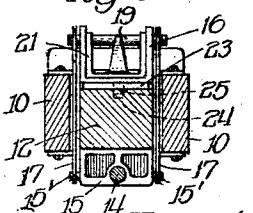


Fig. 6.



Witness:
R. Burkhardt.

Inventor:
Arthur H. Symons,
By Williamson, Hurley, Byron & Knight
Attys

Patented Dec. 8, 1925. 1,564,642

UNITED STATES PATENT OFFICE.

ARTHUR H. SYMONS, OF CHICAGO, ILLINOIS, ASSIGNOR TO SYMONS CLAMP & MFG. CO., OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE.

SHORE.

Application filed July 20, 1922. Serial No. 576,218.

To all whom it may concern:

Be it known that I, ARTHUR H. SYMONS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Shores, of which the following is a specification.

The present invention relates to shores.

The present invention will be described particularly with relation to the type of shore used in the construction of concrete buildings, though as the description proceeds it will be apparent that the invention is of much broader application. In the construction of concrete buildings it is the practice to shore up the false flooring by means of a number of uprights. Said uprights should be adjusted so that their tops should have a predetermined level. Various expedients have been used for leveling the tops of the shores, but, in so far as applicant is aware, all of said expedients lack the advantage of ready adjustability combined with the strength required to hold the concrete after said concrete has been poured.

An object of the present invention is to provide an adjustable shore which is convenient to operate and which is of sturdy construction.

A further object is to provide a shore which may be rapidly raised to approximately its proper position and may then be given a final adjustment to bring the top thereof to the proper level.

A further object is to provide a shore which may be readily adjusted for height, which will present the necessary sturdiness and which may be readily removed without danger.

A further object is to provide a shore which may be readily adjusted and which will remain in adjusted position without strain upon the adjusting means.

Further objects will appear as the description proceeds.

Referring to drawings—

Figure 1 is a view in side elevation of one embodiment of the present invention;

Figures 2 and 3 are views in front and rear elevation respectively of the construction shown in Figure 1; and

Figure 4 is a sectional view taken along the line 4—4 of Figure 2;

Figure 5 shows the structure of Figure 4 but with the parts in another operative position; and

Figure 6 is a sectional view taken along the line 6—6 of Figure 1.

The numerals 10—10 indicate a pair of standards, which may be held in spaced parallel relation by means of the trusses 11—11, which may be securely bolted to the said standards 10—10. Mounted between said standards 10—10 is the slide 12, which may have a loose fit within the frame provided by standards 10—10 and trusses 11—11. Said guide 12, which ordinarily will consist of a piece of timber but which may be of other material, is adjusted in height relative to the standards 10 for securing a predetermined level of the top of said slide 12.

Mounted on the front face of the shore and secured to the standards 10—10 is the bracket 13, which may have a lip 13′ extending over the tops of standards 10—10, whereby said bracket may be firmly supported on said standards 10—10. Said bracket 13 provides a mounting for a screw shaft 14 adapted to have threaded engagement with a bracket or bearing member 15 which is mounted in a manner which will be described hereinafter. The bracket 15 has a face adapted to contact with one side of the slide 12 and has cooperative relationship with a bearing member or bracket 16 mounted to co-operate with the rear side of slide 12 in a manner which will be hereinafter referred to. The bracket 15 is provided with a pair of laterally extending studs 15′—15′ which provide pivot members for a pair of links 17—17 which occupy positions between each standard 10 and the guide 12. For the purpose of accommodating said links, the standards 10—10 may be slotted, as indicated by the numerals 18—18. Said links 17—17 may be connected at the rear side of the shore

by means of the pin 19 adapted to ride in slots 20—20 in the bracket 16. The links 17—17, in service, occupy positions inclined from the horizontal, sloping downwardly from bracket 15 to bracket 16.

As indicated in Figure 4, the slots 20—20 extend in a direction which may be described generally as being transverse to the length of the shore.

Mounted in a position to have abutting relation with the bracket 16 and pin 19 is the wedge member 21, which wedge member may have, along its sides, the wedging walls 21′—21′ and, near its bottom portion, the lug 22. Said wedging walls 21′—21′ have the function of forcing the bracket 16 toward the slide 12. Said slide 12 includes the metallic plate 23, which may be provided with a series of vertically spaced holes 24, which provide stops.

Projecting from the bearing side of bracket 16, in a position to engage with holes 24—24, is the stud 25.

The brackets 15 and 16 will operate to hold the slide 12 in any position in which it is placed. This action will occur by reason of the fact that the bracket 16 is connected through the links 17—17 to the bracket 15, which is held in adjusted relation relative to the standards 10—10 by means of screw shaft 14 and bracket 13. Engagement of the stud 25 in one of the holes 24 of the plate 25 will securely hold the slide 12 against slipping. The screw shaft 14 may be provided with a head 26, whereby said screw shaft 14 may be directly turned. The screw shaft 14 may have fast thereto the bevel gear 27, which bevel gear 27 cooperates with a second bevel gear 28. The bevel gear 28 may be provided with a head 29. The head 26 or head 29 may be turned to communicate motion to the screw shaft 14, a suitable wrench 30 for this purpose being indicated by dotted lines in Figure 1.

In practice, the slide 12 may be readily moved upward by reason of the fact that an upward movement of said slide will result in the raising of the links 17—17 from the position indicated in Figure 1 to a position more nearly horizontal, which action will result in the spacing apart of brackets 15 and 16. Inasmuch as bracket 15 is relatively fixed transversely of the shore by reason of its engagement with the screw shaft 14, the bracket 16 will move to a position wherein the stud 25 becomes released from the hole 24 of plate 23 in which said stud 25 was located. Bracket 16 and stud 25 will operate somewhat after the manner of a ratchet detent, whereby the slide 12 will be securely held in the position to which it is raised. After the slide 12 has been moved to a position wherein the top thereof occupies approximately the level desired, adjustment may be had by turning the screw shaft 14 by means of head 26 or head 29, whereby the bracket 15 will be moved longitudinally of the shore. By reason of the connection of bracket 15 and bracket 16, movement of the screw shaft 14 will result in the positive movement of the slide 12, whereby the position of said slide may be readily adjusted with great nicety. When the shore is to be used for supporting the floor of a concrete structure while said floor is setting, only a small force will be required to move the slide 12 to its desired position for the reason that said shores are adjusted before the concrete is poured. After the concrete has been poured, however, the shores are subjected to great weight. The construction disclosed in the present invention will sustain said weight without slipping, by reason of the positive engagement between the stud 25 of bracket 16 and the plate 23 which forms part of the slide 12.

When it is desired to release the shore, it is only necessary to strike the wedge 21 a relatively light blow in an upward direction, the lug 22 being conveniently mounted for receiving such blow. Such a blow changes the line of wedging engagement between pin 19 and wedging walls 21′—21′ and permits the movement of the links 17—17 in a counterclockwise direction, as viewed in Figure 1. The stud 25 does not become disengaged from the plate 23 at this time, the falling action of slide 12 being due to the change in the angular position of the links 17—17, as the pin 19, riding in slots 20—20, engages different portions of the wedging walls 21′—21′. Successive light blows may be applied to permit a step-by-step movement of slide 12 or a single blow may be used of sufficient force to cause pin 19 to engage lug 22. In either case, the blow applied to wedge member 21 will cause only a short fall of slide 12, whereby shocks incident to a free fall of said slide from its uppermost position to its lowermost position are avoided. For all ordinary practice, a single blow will allow the slide 12 to fall sufficiently to release the shore. After the load has been taken off the slide, as referred to above, the bracket 16 may be readily manipulated to free the stud 25 from engagement with the plate 23, whereby the slide may be readily moved to its lowermost position for convenience in storage or transportation.

The wedging walls 21′—21′ and the lug 22 operate as limiting means for preventing wedge 21 from getting out of cooperative relationship with pin 19 and bracket 16. Pin 19 may be removably held in place by means of a cotter pin or other preferred means.

The illustrated embodiment of the present invention is subject to wide variation without departing from the spirit of the inven-

tion. The means by which the bracket 16 cooperates with the slide 12 to hold said slide in adjusted position is particularly subject to modifications. Said slide 12 and bracket 16 may have any preferred cooperating surfaces, so long as they serve to provide a firm grip whereby slipping or settling of the slide 12 under load is avoided.

I claim:

1. A shore comprising supporting means, a slide, and holding and adjusting means for said slide, said holding and adjusting means comprising means permitting the ready movement of said slide in one direction but opposing movement of said slide in the opposite direction, said holding and gripping means including screw-threaded means for adjusting the position of said slide, said holding and gripping means also including a gravity responsive wedging member having its larger portion uppermost for controlling movement in said opposite direction.

2. A shore comprising a pair of supporting members, a slide mounted therebetween, holding and adjusting means for said slide, said holding and adjusting means comprising bearing members placed on opposite sides of said slide, and links connecting said members mounted between said supporting members and said slide, one of said members having screw-threaded adjusting relation with said supporting members, the other of said members being provided with wedge means cooperating with said links for holding said slide in adjusted position relative to said supporting members.

3. A shore comprising supporting means a slide, and holding and adjusting means for said slide, said holding and adjusting means including a member for engaging said slide, screw-threaded means for adjusting said slide when said engaging means is in operation, and gravity responsive wedge-shaped means having its larger portion uppermost controlling said engaging means.

4. A shore comprising relatively stationary upright pieces and a slide movable relatively thereto, said slide having cooperative relationship with a pair of opposed bearing members connected by links, one of said bearing members being provided with abutment means adapted to engage said slide at a plurality of points spaced along the length of said slide to hold same in a given position.

5. A shore comprising relatively stationary upright pieces and a slide movable relatively thereto, said slide having cooperative relationship with a pair of opposed bearing members connected by links, one of said bearing members being provided with abutment means adapted to engage said slide at a plurality of points spaced along the length of said slide to hold same in a given position, one of said bearing members being provided with screw-threaded means for nicely adjusting the position of said bearing member relative to said uprights.

6. A shore comprising relatively stationary supporting means and a movable slide, said slide having cooperative relationship with a pair of opposed bearing members connected by link means, said slide being provided with a plurality of spaced recesses, one of said bearing members being provided with an abutment member adapted to cooperate with said first mentioned recesses.

7. A shore comprising relatively stationary supporting means and a movable slide, said slide having cooperative relationship with a pair of opposed bearing members connected by link means, said slide being provided with a plurality of spaced recesses, one of said bearing members being provided with an abutment member adapted to cooperate with said first mentioned recesses, said other bearing member having screw-threaded means for nicely adjusting the position of said slide relative to said stationary supporting means.

8. A shore comprising a relatively stationary upright supporting means and a slide cooperating therewith, said slide having cooperative relationship with a pair of opposed bearing members connected by link means, one of said bearing members being provided with a gravity responsive wedge member having its larger portion uppermost for governing the positions of said link means.

9. A shore comprising a relatively stationary upright supporting means and a slide cooperating therewith, said slide having cooperative relationship with a pair of opposed bearing members connected by link means, one of said bearing members being provided with a wedge member for governing the position of said link means, said wedge member having projecting portions for preventing said wedge member from getting out of operative relation with its bearing member.

10. A shore comprising supporting means, a slide and holding and adjusting means for said slide, said holding and adjusting means including a member fixedly connected to said supporting means at one side thereof, slide engaging mechanism, link mechanism connecting said slide engaging mechanism and said member, and wedging means for holding said slide engaging mechanism in engagement with said slide.

11. A shore comprising supporting means, a slide and holding and adjusting means for said slide, said holding and adjusting means including a member fixedly connected to said supporting means at one side thereof, slide engaging mechanism, link

mechanism connecting said slide engaging mechanism and said member, and wedging means for holding said slide engaging mechanism in engagement with said slide, said slide being provided with a plurality of longitudinally spaced abutment means, said wedging means being capable of an upward movement to disengage said slide engaging mechanism from said abutment means.

12. A shore comprising supporting means, a slide carried thereby, holding means for said slide having slidable relation with said supporting means, readily adjustable means for raising and lowering said holding means and wedging means for forcing said holding means into engagement with said slide.

13. A shore comprising supporting means, a slide carried thereby, holding means for said slide having slidable relation with said supporting means, readily adjustable means for raising and lowering said holding means and gravity responsive means for forcing said holding means into engagement with said slide.

14. A shore comprising a pair of standards, a slide mounted therebetween, means mounted at the upper extremities of said standards for guiding said slide, means mounted between said standards and encircling said slide, gripping means carried by said encircling means, and adjustable means for governing the position of said encircling means relative to said standards.

15. A shore comprising a pair of standards, a slide mounted therebetween, means mounted at the upper extremities of said standards for guiding said slide, means mounted between said standards and encircling said slide, gravity responsive gripping means carried by said encircling means, and adjustable means for governing the position of said encircling means relative to said standards.

Signed at Chicago, Illinois, this 18th day of July, 1922.

ARTHUR H. SYMONS.