May 7, 1940.

H. J. BAKER

2,199,605

SHORE

Filed April 18, 1938

Fig. 1.

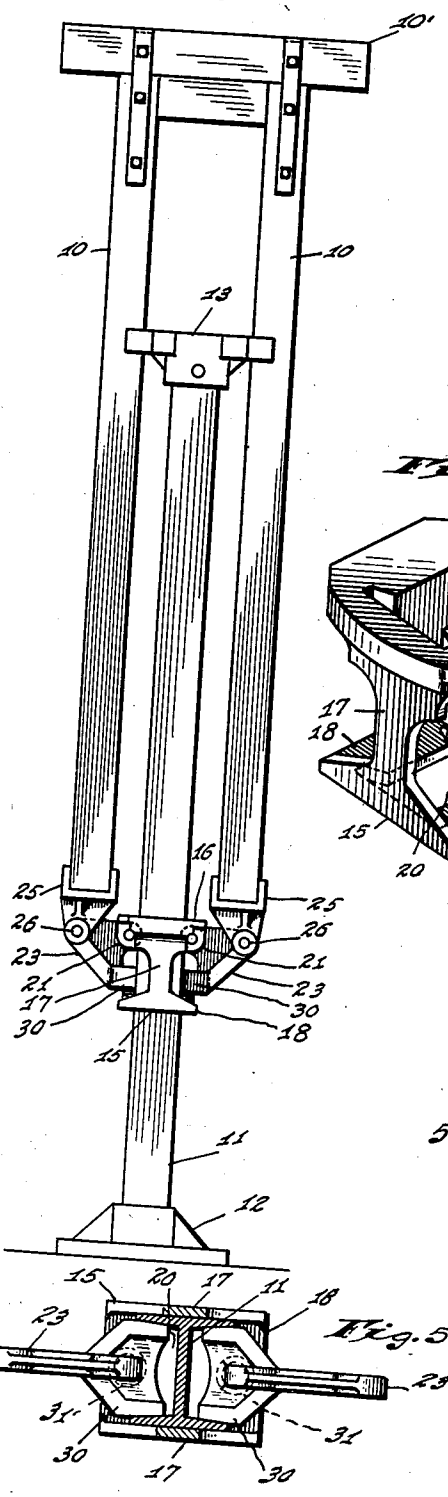


Fig. 2.

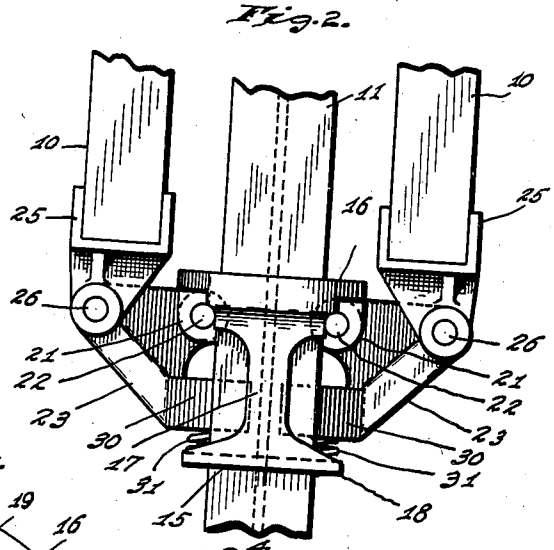


Fig. 6.

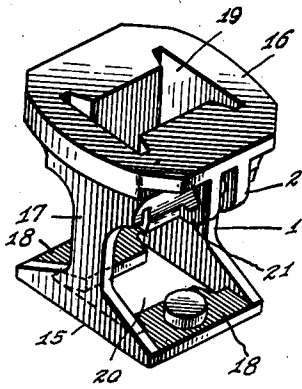


Fig. 3.

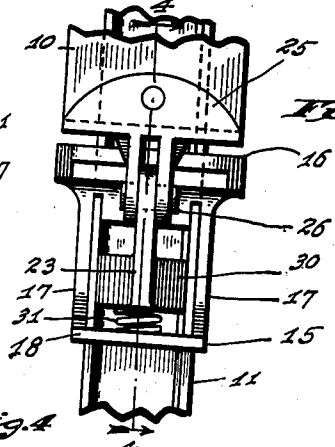


Fig. 4

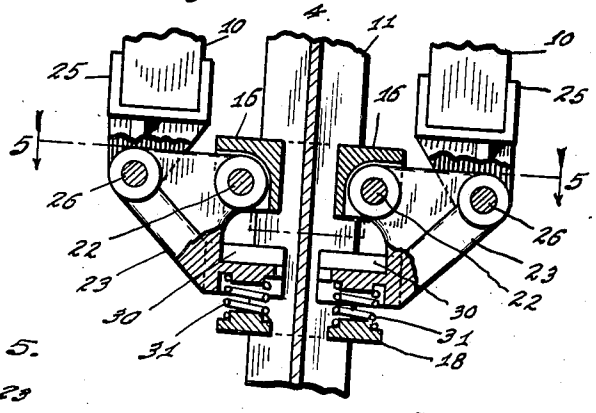


Fig. 5.

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ATTORNEYS.

Patented May 7, 1940 2,199,605

UNITED STATES PATENT OFFICE

2,199,605

SHORE

Hugh J. Baker, Indianapolis, Ind.; Velma F. Baker, administratrix of said Hugh J. Baker, deceased, assignor to Hugh J. Baker & Company, Indianapolis, Ind., a corporation of Indiana

Application April 18, 1938, Serial No. 202,654

7 Claims. (Cl. 248—355)

My invention relates to shores, and especially to shores of the general type set forth in Roos Patent No. 1,368,353. A shore of this type comprises two telescoping parts, one of which is formed with two spaced-apart members, conveniently of wood, which receive between them the other part of the shore. In the Roos patent, the latter is of pipe. At its inner end, the central shore-part is provided with a head shaped to engage the two spaced-apart members of the other shore-part and thus to act as a guide. Suitable clamping mechanism frictionally engaging the central shore-part and carried by the other shore-part serves releasably to hold the shore in extended condition.

It is the object of my invention to produce a shore of this general type in which the central member will be of flanged structural-steel shape, preferably an I-beam. A further object of my invention is to provide a locking mechanism which will effectively hold the shore extended under capacity loads, which will operate without any substantial back-lash, and which can be readily released when it is desired to collapse the shore.

In carrying out my invention, I provide on the central shore-part a sliding head having an opening which receives the central shore-part and bears rather closely against the outer surfaces of the flanges thereof. Pivotally mounted in this head are dogs the free ends of which are formed as truncated wedges adapted to engage frictionally the inner surfaces of the flanges. Springs acting between the head and the dogs serve to keep the free ends of the latter in engagement with the flanges, and the dogs are connected to the other shore-part so that a load on the shore will augment the effect of the springs in forcing the gripping surfaces of the dogs into engagement with the flanges.

The accompanying drawing illustrates my invention: Fig. 1 is a front elevation of the complete shore; Fig. 2 is a fragmental front elevation similar to Fig. 1 but on an enlarged scale, showing the clamping mechanism; Fig. 3 is a side elevation of the mechanism illustrated in Fig. 2; Fig. 4 is a vertical section through the clamping mechanism; Fig. 5 is a horizontal section on the line 5—5 of Fig. 4; and Fig. 6 is an isometric view of the head removed from association with the remaining parts.

In the shore illustrated in the drawing, the upper of the two telescoping parts is composed of two spaced-apart members 10 interconnected at their upper ends by a cross-piece 10'. Between the members 10 there is located the other shore-part which, as previously indicated, is preferably an I-beam 11 of a standard cross-section. The I-beam 11 is provided at its lower end with a foot 12 and at its upper end with a guiding head 13 co-operating with the members 10. As so far described, the shore is substantially that of the Roos patent above identified except for the cross-sectional shape of the central member 11.

The means I employ for holding the shore in extended condition comprises a head 15, conveniently a steel or malleable-iron casting. This head, which is best illustrated in Fig. 6, is in the form of a top plate 16 from which there depend two integral legs 17, and between the lower ends of the legs 17 there extends a bottom plate 18. The top and bottom plates are provided with alined openings 19 and 20 which receive the I-beam 11. The holes 19 and 20 are shaped to have a sliding fit on the outer surfaces of the flanges of the I-beam 11, but are otherwise relieved to provide clearance for I-beam surfaces.

Beneath the top plate 16 the head 15 is provided on each side of the opening 19 with a pair of ears 21 serving as a support for a pivot pin 22 upon which a dog 23 is mounted. From the pins 22, the dogs 23 extend outwardly and are pivotally connected to the lower ends of the members 10 respectively, as through the medium of fittings 25, secured to the lower ends of such members, and pivot pins 26. The dogs 23 are provided, below the respective pivot-pins 22, with gripping portions 30 each in the form of a truncated wedge shaped to engage the inner faces of the flanges of the I-beam 11, as is clear from Fig. 5. Springs 31 acting between the bottom plate 18 of the head and the gripping portions 30 of the dogs 23 serve to hold such gripping portions in engagement with the I-beam flanges.

When the shore is carrying a load, the downward pressure exerted through the pins 26 upon the outer ends of the dogs 23 tend to rotate such dogs about the axes of the respective pivot pins 22, thus forcing the gripping portions 30 toward each other into firm gripping engagement with the inner surfaces of the I-beam flanges. Because of the relatively close fit of the ends of the holes 19 and 20 with the outer surfaces of the I-beam flanges, those flanges are prevented from becoming distorted as the result of pressure exerted upon them by the dogs. Since the gripping portions of the dogs are always held in engagement with the inner surfaces of the I-beam flanges, and since substantially no displacement

of the dogs occurs when the gripping action is exerted, the shore is free from back-lash, and if extended under load will not collapse to any extent when the extending force is removed.

For the purpose of extending the shore, I may employ a lifting device of a type similar to that illustrated in Roos Patent No. 1,368,353 with such modification as is necessary to adapt it for use with the I-beam 11 rather than with the round pipe which Roos shows.

To release the shore shown in the drawing when it is under load and therefore inextensible, it is necessary only to tap the top plate 16 lightly with a hammer. This tends to move the head 15 downwardly relatively to the upper shore-part and to swing the dogs about their respective axes in a releasing direction.

For convenience, I have described my shore with reference to the position in which it is illustrated in the drawing, but it is to be understood that it is capable of use in other positions.

I claim as my invention:

1. A shore, comprising lower and upper telescoping members, said lower member being provided on opposite sides with longitudinally extending grooves each of which has inwardly converging side walls, a head slidable on said lower member, and a pair of dogs pivotally mounted on said head on opposite sides of said lower member, each of said dogs having, at a point below its axis of pivotal mounting in said head, a wedge-like portion engaging the side walls of the adjacent groove in said lower member, and means interconnecting each of said dogs with said upper member at a point spaced outwardly from the axis of pivotal mounting of such dog in said head.

2. The invention set forth in claim 1 with the addition of yielding means acting between said head and each of said dogs for holding the wedge-like portions of the dogs in contact with said lower member.

3. The invention set forth in claim 1 with the addition that said lower member is an I-beam having flanges whose inner surfaces are engaged by the wedge-like portions of said dogs, said head having a central opening, opposite walls of which engage the outer surfaces of said flanges to prevent spreading thereof.

4. A shore, comprising lower and upper telescoping members, said lower member being provided with a longitudinally extending groove having inwardly sloping side-walls, a head slidable on said lower member, a dog pivoted in said head and having below its axis a wedge-like portion engaging the side walls of said groove to exert oppositely and outwardly directed forces thereon, and means interconnecting said dog with said upper member at a point spaced outwardly from such axis.

5. A shore as set forth in claim 4 with the addition of yielding means for forcing the wedge-shaped portion of said dog into contact with the side walls of said groove.

6. A shore as set forth in claim 4 with the addition that said lower member is a structural steel shape having a web and flanges projecting therefrom, the inner surfaces of said flanges being engaged by the wedge-like portion of said dog.

7. A shore, comprising lower and upper telescoping members, said lower member being provided with a longitudinally extending groove having inwardly sloping side-walls, a head slidable on said lower member, a dog movably mounted in said head and having a wedge-like portion engaging the side walls of said groove to exert oppositely and outwardly directed forces thereon, and means comprising an operative connection between said dog and said upper member for forcing the wedge-like portion of the dog into gripping engagement with the side walls of said groove upon any tendency of the upper shore member to move downwardly relative to the lower member.

HUGH J. BAKER.