F. H. G. BRANDT.
SHORER.
APPLICATION FILED JULY 13, 1917. RENEWED JULY 12, 1920.

1,372,005.

Patented Mar. 22, 1921.

2 SHEETS—SHEET 1.

Fig. 6.

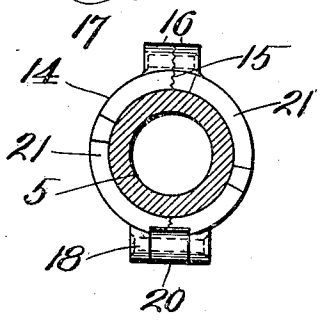


Fig. 1.

Fig. 2.

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2 SHEETS—SHEET 2.

FIG. 4.

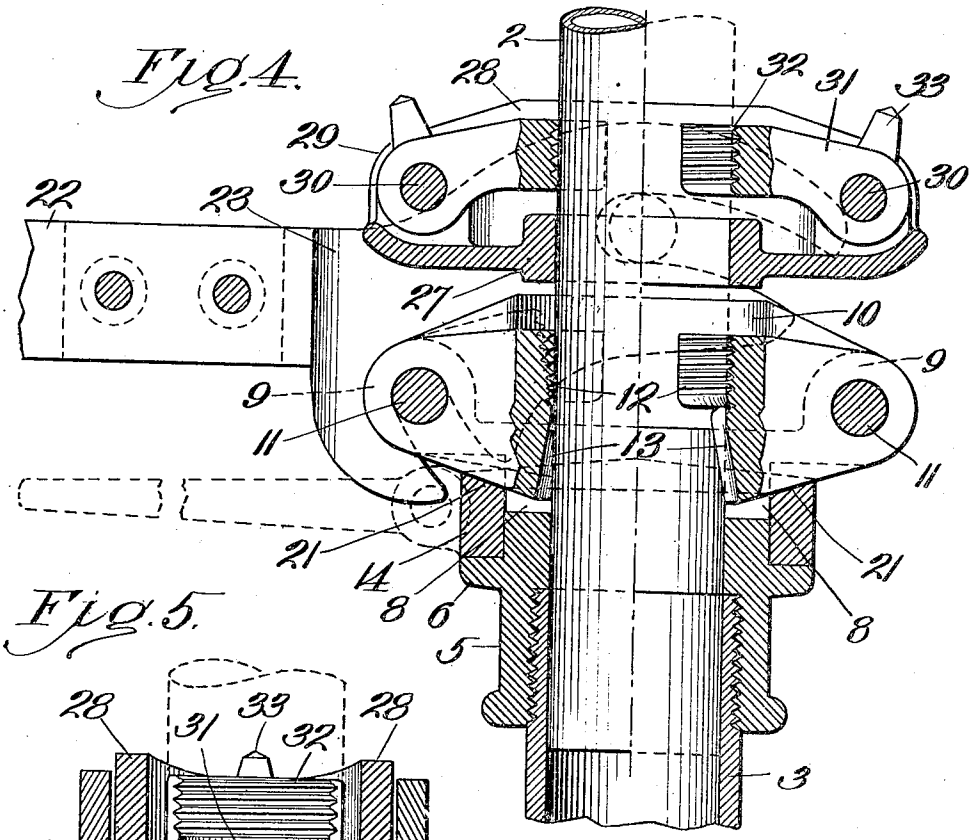


FIG. 5.

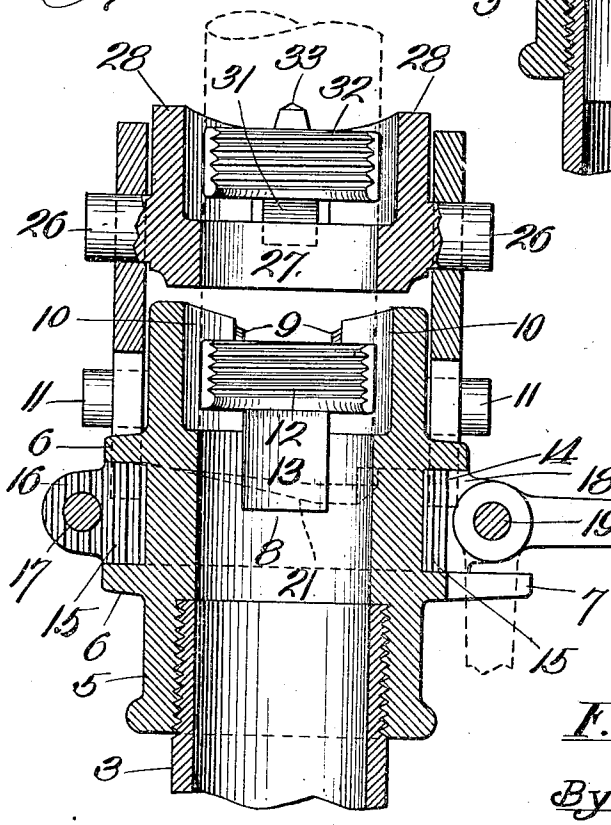
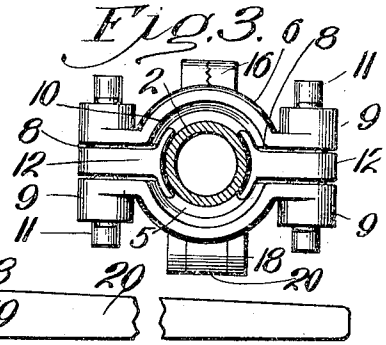


FIG. 3.



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SHORER.

1,372,005. Specification of Letters Patent. Patented Mar. 22, 1921.

Application filed July 13, 1917, Serial No. 186,464. Renewed July 12, 1920. Serial No. 395,760.

To all whom it may concern:

Be it known that I, FOKKO H. G. BRANDT, a subject of the Emperor of Germany, and residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Shorers, of which the following is a specification.

This invention relates to shorers of that class embodying a set of lever actuated jaws for gripping and lifting an object, and a set of jaws for automatically gripping and holding such object when the lifting stress on the first-named set of jaws is relaxed, and my object is to produce a shorer in which the holding jaws can be actuated to permit of a gradual lowering of said object.

A further object is to produce a shorer which can be easily and quickly assembled in or removed from operative position, and by which the lifting power is applied vertically. A still further object is to produce a shorer of simple, strong, durable, compact, and inexpensive construction.

With these objects in view the invention consists in certain novel and peculiar features of construction and combinations of parts as hereinafter described and claimed; and in order that it may be fully understood reference is to be had to the accompanying drawings, in which:

Figure 1, is a side elevation of a shorer embodying my invention.

Fig. 2, is a horizontal section on the line II—II of Fig. 1.

Fig. 3, is a horizontal section taken just above the holding jaws of the device, the lifting lever being omitted.

Fig. 4, is an enlarged view chiefly in central vertical section on the line IV—IV of Fig. 2, but showing only half of the inner telescopic element or post, to more clearly disclose parts otherwise hidden.

Fig. 5, is a central transverse section taken on the line V—V of Fig. 2, but with the lowering lever raised to operative position.

Fig. 6, is a horizontal section on the line VI—VI of Fig. 1.

In the said drawings, 1 indicates an object, such as false work, to be raised and subsequently lowered if necessary or desirable, and supporting said object is a shorer embodying my invention and constructed as follows:

2 is an inner member or post directly engaged at its upper end with the object 1, and fitting telescopically within tubular standard 3 equipped with a large foot or base 4 for purposes of stability.

Secured to and projecting beyond the upper end of the standard 3 is a collar 5 provided with a pair of flanges 6, the lower flange 6 being extended to form a pair of ears 7.

The collar is bifurcated at diametrically opposite points at 8, and is formed with extensions or lugs 9 beyond and at opposite sides of said bifurcations, and between said lugs 9 the collar is internally enlarged as at 10. A pair of parallel pins 11 extend through adjacent lugs 9 and constitute pivots for a pair of holding jaws, and one or both form fulcrums for a lifting lever or levers, hereinafter mentioned.

The jaws are provided with toothed or corrugated gripping faces 12 accommodated by the enlarged internal diameter of the collar, and with a pair of smooth gripping faces 13 extending at an angle to the gripping faces 12, the arrangement being such that the jaws when unrestrained will swing down until they grip post 2 at opposite sides with their faces 12 in a plane above the axes of rotation, and thus utilize the weight upon the post to hold the same firmly at the desired point of adjustment.

To dispose gripping faces 13 in operative position the jaws are swung upward, this movement withdrawing gripping faces 12 from and engaging faces 13 with the post. For imparting upward movement to the jaws, a cam ring 14 is journaled on collar 5 between flanges 6 thereof. This collar is composed of two halves provided at their abutting ends with interlocking ribs 15 and at one of said abutting ends with ears 16 connected together by a clamping bolt 17. At the opposite ends of said members of the cam ring, are formed spaced ears 18 connected by a pivot bolt 19, and pivoted on said bolt is a lever 20 adapted to swing normally between the lugs 7 and in such position guard against rotative movement of the cam. When the lever is swung upward to horizontal position from both the lugs 7, it can be used as a handle by which to turn the cam ring, which it will be noted is provided with two opposite cam surfaces 21 underlying and in proximity to the pivoted jaws, the arrangement being such that when

the cam ring is turned in the proper direction, its cam faces will engage and swing the dogs upwardly until the toothed faces 12 thereof are disengaged from the post 2 and the smooth faces 13 are engaged with said post. When the rotation of the cam ring is reversed, the dogs drop down to their original positions, that is with the toothed faces 12 engaging the post and guarding against downward movement thereof.

A lifting lever 22, is provided with a forked head 23 having downwardly opening notches 24 for pivotally engaging one of the pivot pins 11. The head is also provided with arcuate slots 25 engaging cylindrical stubs 26 of a collar 27 fitting slidingly on post 2. Collar 27 is provided with upwardly projecting outwardly bowed walls 28 terminating in parallel ears 29 connected by pivot pins 30, and pivoted on said pins are dogs 31, provided with arcuate toothed faces 32 engaging the post for the purpose of lifting the same when the collar 27 is moved upward and for automatically releasing the post when said collar 27 moves downward.

The pivoted dogs 31, hereinafter termed the lifting dogs are provided with short arms 33 to rest against opposite parts of the collar 27 and thereby hold the dogs in position to be instantly thrown back against the post.

Assuming that the parts are arranged as shown and that it is desired to impart upward movement to the post 2, the operator will apply downward pressure on lever 22 and thereby slide collar 27 upward so that the dogs 31 of said collar shall raise the post a corresponding distance. If the stroke of the lever has not raised the post the desired distance, the lever is swung back to its original position and incidentally relowers the collar 27 and the lifting dogs to their initial positions, it being understood that the instant the grip of said dogs on the post is relaxed, the holding dogs through the engagement of their faces 12, with the post, hold the same in its adjusted position. A second stroke of the lever 22 imparting a second lifting operation to the post and the same is true with each stroke of the lever.

When it is desired to lower the post 2, the operator swings the lowering lever 20 to a horizontal position, and then by means of said lever, turns the cam ring to trip gripping faces 12 from engagement with the post and causes faces 13 to engage said post, the adjustment of the cam ring determining the degree of pressure applied on the post by the smooth faces of the holding dogs. As the adjustment of said dogs by said cam ring is exceedingly fine it is obvious that the pressure of faces 13 on the post can be so regulated and controlled that the post can be permitted to slide downward as slowly and gradually as desired and therefore without any shock or jar injurious to the device or to the object or false work being lowered.

When the lowering operation is completed, the cam ring can be turned back until the lever 20 is able when released to swing down between the ears 7, the gravitative action of the holding dogs of course resulting in the gripping and holding of the post 2, if the latter has any tendency to continue its downward movement.

It will be apparent that in the upward movement of the collar 27, the curved portions of the head of lever 22 which underlie studs 26, apply upward pressure thereon without tending to press them laterally, and that as the operation of the lever continues and the distance between the fulcrum pin 11 and the studs 26, the latter have relative outward movement in slots 25. When the lever is swung upward as its lifting operation is performed, the portions of its head forming the upper walls of slots 25, will impart downward movement to the collar 27 if the latter fails to gravitate downward. In placing the lever in operative position the slots 25 are first engaged with studs 26, and then the lever is swung pivotally on said studs until notches 24 fit over the trunnion 11. This movement is reversed to remove the lever from position. For lifting a heavy weight, two levers 22 may be simultaneously employed, both engaging studs 26 but mounted or fulcrumed on the different pins 11, it being noticed by reference to Fig. 2 that they project a sufficient distance to accommodate a pair of levers at one time.

From the above description it will be apparent that I have produced a shorer embodying the features of advantage enumerated as desirable in the statement of the object of the invention, and while I have illustrated and described the preferred embodiment of the device, it will be apparent that it is susceptible of change in minor particulars without departing from the spirit and scope of the appended claims.

I claim:

1. A shorer comprising a standard, a post fitting slidingly on the standard, a collar secured to and projecting above the standard and encircling the post and provided with opposite bifurcations, and a pair of jaws pivoted to the collar within said bifurcations and each provided with a pair of gripping faces for respectively gripping and slidably holding the post and controlling downward movement thereof.

2. A shorer comprising a standard, a post fitting slidingly on the standard, a collar secured to and projecting above the standard and encircling the post and provided with opposite bifurcations, a pair of jaws pivoted to the collar within said bifurcations and each provided with a pair of

gripping faces for respectively gripping and slidably holding the post and controlling downward movement thereof, and means to operate said jaws to effect disengagement of their holding faces from and engagement of their movement regulating faces with the said post.

3. A shorer comprising a standard, a post fitting slidingly on the standard, a collar secured to and projecting above the standard and encircling the post and provided with opposite bifurcations, a pair of jaws pivoted to the collar within said bifurcations and each provided with a pair of gripping faces for respectively gripping and slidably holding the post and controlling downward movement thereof, a cam ring on the said collar, and means to turn said cam ring to operate said jaws to effect disengagement of their holding faces from and engagement of their movement regulating faces with said post.

4. A shorer comprising a standard, a post fitting slidingly on the standard, a collar secured to and projecting above the standard and encircling the post and provided with opposite bifurcations, a pair of jaws pivoted to the collar within said bifurcations and each provided with a pair of gripping faces for respectively gripping and slidably holding the post and controlling downward movement thereof, a cam ring on the said collar, means to turn said cam ring to operate said jaws to effect disengagement of and their holding faces from and engagement of their movement regulating faces with said post, and means for locking the cam ring against accidental rotation when the holding jaws are performing their function.

5. A shorer comprising a standard, a post fitting slidingly on the standard, a collar secured to and projecting above the standard and encircling the post and provided with opposite bifurcations, a pair of jaws pivoted to the collar within said bifurcations and each provided with a pair of gripping faces for respectively gripping and slidably holding the post and controlling downward movement thereof, a cam ring on the said collar, means to turn said cam ring to operate said jaws to effect disengagement of their holding faces from and engagement of their movement regulating faces with said post, a lever pivoted to the cam ring for movement in a vertical plane, and lugs on the said collar to receive the lever between them to prevent turning movement of the cam ring.

6. A shorer, comprising a standard, a post fitting telescopically in the standard, a collar secured to the standard, jaws secured to the collar for automatically gripping the post to prevent downward movement thereof, said jaws having gripping faces for slidably holding and controlling downward movement of the post, a collar fitting on the post above the first-named collar and provided with studs at opposite sides, a pair of jaws pivoted to the second collar and engaging the post for lifting the same, and a lever fulcrumed on the first-mentioned collar and engaging the said studs for imparting upward movement to the second collar and the post.

7. A shorer, comprising a standard, a post fitting telescopically in the standard, a collar secured to the standard, jaws secured to the collar for automatically gripping the post to prevent downward movement thereof, said jaws having gripping faces for slidably holding and controlling downward movement of the post, a collar fitting on the post above the first-named collar and provided with studs at opposite sides, a pair of jaws pivoted to the second collar and engaging the post for lifting the same, and a lever fulcrumed on the first-named collar and provided with arcuate slots engaging the said studs for applying upward or downward pressure thereon.

8. A shorer comprising a standard, a post fitting slidably on the standard, a collar secured to and projecting above the standard and encircling the post, a pair of jaws pivoted to the collar, and a manually-operable cam for operating said jaws to release the post.

9. A shorer comprising a standard, a post fitting slidably on the standard, a collar secured to and projecting above the standard and encircling the post, a pair of jaws pivoted to the collar, a cam, and a lever for operating said cam and causing it to impart pivotal movement to said jaws to release the post.

In testimony whereof I affix my signature.

FOKKO H. G. BRANDT.