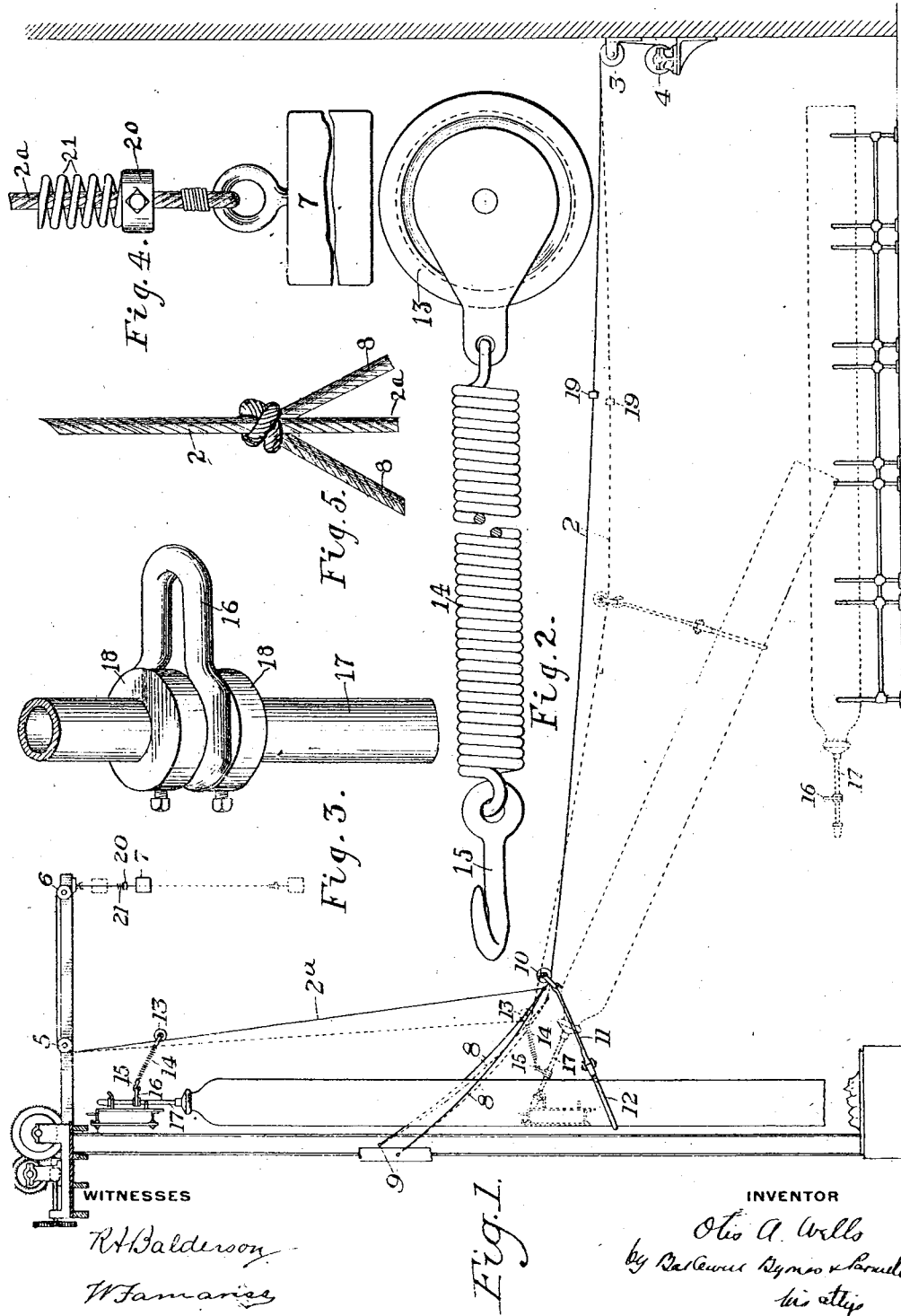


U. A. WELLS.
TAKE-DOWN APPARATUS.
APPLICATION FILED NOV. 16, 1911.

1,176,505.

Patented Mar. 21, 1916.



UNITED STATES PATENT OFFICE.

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TAKE-DOWN APPARATUS.

1,176,505.

Specification of Letters Patent.

Patented Mar. 21, 1916.

Application filed November 16, 1911. Serial No. 660,719.

To all whom it may concern:

Be it known that I, OTIS A. WELLS, of Arnold Borough, Westmoreland county, Pennsylvania, have invented a new and useful Improvement in Take-Down Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a diagrammatic side elevation showing my improved apparatus, and illustrating the same in different positions; and Figs. 2, 3, 4 and 5 are enlarged detail views hereinafter referred to.

My invention relates to the taking down of glass cylinders which have been drawn from a bath of molten glass.

The object of the invention is to automatically detach the blow pipe from the elevator cage at the desired moment, and to relieve the workmen from supporting the neck or blow pipe end of the heavy cylinder during lowering onto the horse.

Heretofore in the use of take-down apparatus, where a trolley sling travels along a cable, it has been customary for the workmen to detach the blow pipe from the cage, and support and guide this end of the cylinder during lowering. My invention does away with a large part of this laborious work, the workmen needing only to guide this end of the cylinder during lowering without the manual labor of supporting it, or detaching it from the cage in the heated zone above the drawing point.

In the drawings, 2 represents a flexible connection, which is preferably in the form of a wire rope, one end portion of which extends over a guide pulley 3, and thence to a suitable winding drum 4. This winding drum may be operated and controlled in any desirable way. The other end portion 2^a of this cable extends up and over a guide pulley 5; thence over guide pulley 6 and down to a weight 7 secured to its depending end. At the intermediate point of the cable, near the drawing pot, I secure two branches 8, 8 in any desirable manner, as by the knotted connection shown in Fig. 5. These branches spread to each side of the drawing path to avoid it, and are secured at fixed points 9, 9 to the uprights of the frame.

10 is a trolley, movable on the cable 2 and having loosely hooked thereto the sling 11, whose forked loop 12 is slipped around the

cylinder to carry its lower portion during side movement in lowering.

In carrying out my invention, I provide another trolley 13, having a detachable connection with the stem of the blow pipe. In the form shown, this connection consists of a spiral spring 14, having a hook 15 (as shown in Fig. 2), which hook engages a loop 16 loosely encircling the stem 17 of the blow pipe and held between adjustable collars 18 thereon. To an intermediate part of the connection 2 is secured a stop 19, and near the weight 7 the depending end portion of the cable is provided with another stop 20, above which is preferably placed a spiral spring 21 (shown in detail in Fig. 4).

In using this take-down apparatus, the drawing proceeds in the usual manner, except that on account of the engagement of the hook 15 with loop 16, the trolley 13 is carried up along the portion 2^a of the cable 2 during the drawing of the cylinder. When the drawing is complete, and the loop 11 is put in place in the usual way after severing the lower end of the cylinder, the cable being operated, the cylinder will swing out while the bait is attached to the cage until the parts are in the intermediate inclined position shown in dotted lines in Fig. 1. When the trolley 13 nears the connection of branches 8, the weight of the cylinder will pull the blow pipe off the forks of the cage, and the operator will then take hold of the blow pipe and guide this end of the cylinder during its further lowering. In this operation he is not called upon to support this end of the glass cylinder, as this is carried by the supplemental trolley, and he only needs to stop swaying and guide it onto the horse. When the drawing operation starts the weight 7 will be in about the position shown in the lower dotted lines, while the position of the weight at the time of pulling the blow pipe loose is shown in the upper dotted lines, the spring 21 cushioning the action of the stop 20 at this time and reducing the shock of pulling out the pipe.

The advantages of my invention result from the additional attachment, which reduces labor and calls for less skill and labor on the part of the operators. The general type of take-down device shown is that covered in U. S. patent to Schmertz, No. 890,306, dated June 9th, 1909.

Different kinds of take-down devices may

be employed; variations may be made in the arrangement of the cable; other flexible connections such as chains may be employed, and other changes may be made without departing from my invention.

I claim:—

1. Take-down apparatus for drawn glass cylinders, having a supporting device for supporting the blow-pipe end of the cylinder, after the blow-pipe is disengaged from the drawing cage, and another separate supporting device arranged to be separately engaged with the lower portion of the cylinder after the drawing operation is completed, substantially as described.

2. Take-down apparatus for drawn glass cylinders, having a traveling carrier for supporting the blow-pipe end of the cylinder, after the blow-pipe is disengaged from the drawing cage, and another separate traveling carrier capable of movement independently of the first named carrier and adapted to be separately engaged with the lower portion of the cylinder when the drawing operation is completed, substantially as described.

3. In take-down apparatus for drawn glass cylinders, a flexible connection, a gripper mechanism on the connection arranged to engage the lower portion of the drawn cylinder, and another connection arranged to travel upwardly with the cylinder on the flexible connection during drawing and to support the blow pipe end of the cylinder during the take-down operation; substantially as described.

4. Take-down apparatus for drawn glass cylinders, comprising a traveling carrier having means for engaging and supporting the lower end portion of a cylinder, and another traveling connection having means for supporting and guiding the blow-pipe end of the cylinder, together with guide means for the last named carrier on which it may

be moved upwardly with the cylinder during the drawing operation, substantially as described.

5. Take-down apparatus for drawn glass cylinders, having a traveling carrier for supporting the blow-pipe end of the cylinder and having means for engagement with and adapted to be carried by the blow-pipe or bait to which the cylinder is attached, and another separate traveling carrier capable of movement independently of the first named carrier and adapted to be separately engaged with the lower portion of the cylinder when the drawing operation is completed, substantially as described.

6. Take-down apparatus for drawn glass cylinders, comprising a rope or cable supported to form a track, and having one end portion thereof free, a bearing over which said free portion passes, a weight attached to said free portion, and two separate carriers mounted for travel on said cable, one of said carriers forming means for supporting the blow-pipe end of a drawn cylinder, and the other carrier having means for supporting the lower portion of said cylinder, substantially as described.

7. Take-down apparatus for drawn glass cylinders, having a supporting device for supporting the blow-pipe end of the cylinder after the latter is detached from the drawing cage, and another separate supporting device arranged to be separately engaged with the lower portion of the cylinder after the drawing operation is completed, the first named supporting device having an elastic portion, substantially as described.

In testimony whereof, I have hereunto set my hand.

OTIS A. WELLS.

Witnesses:

P. E. MORAN,

HERBERT W. KUHLMAN.