No. 890,306. PATENTED JUNE 9, 1908.

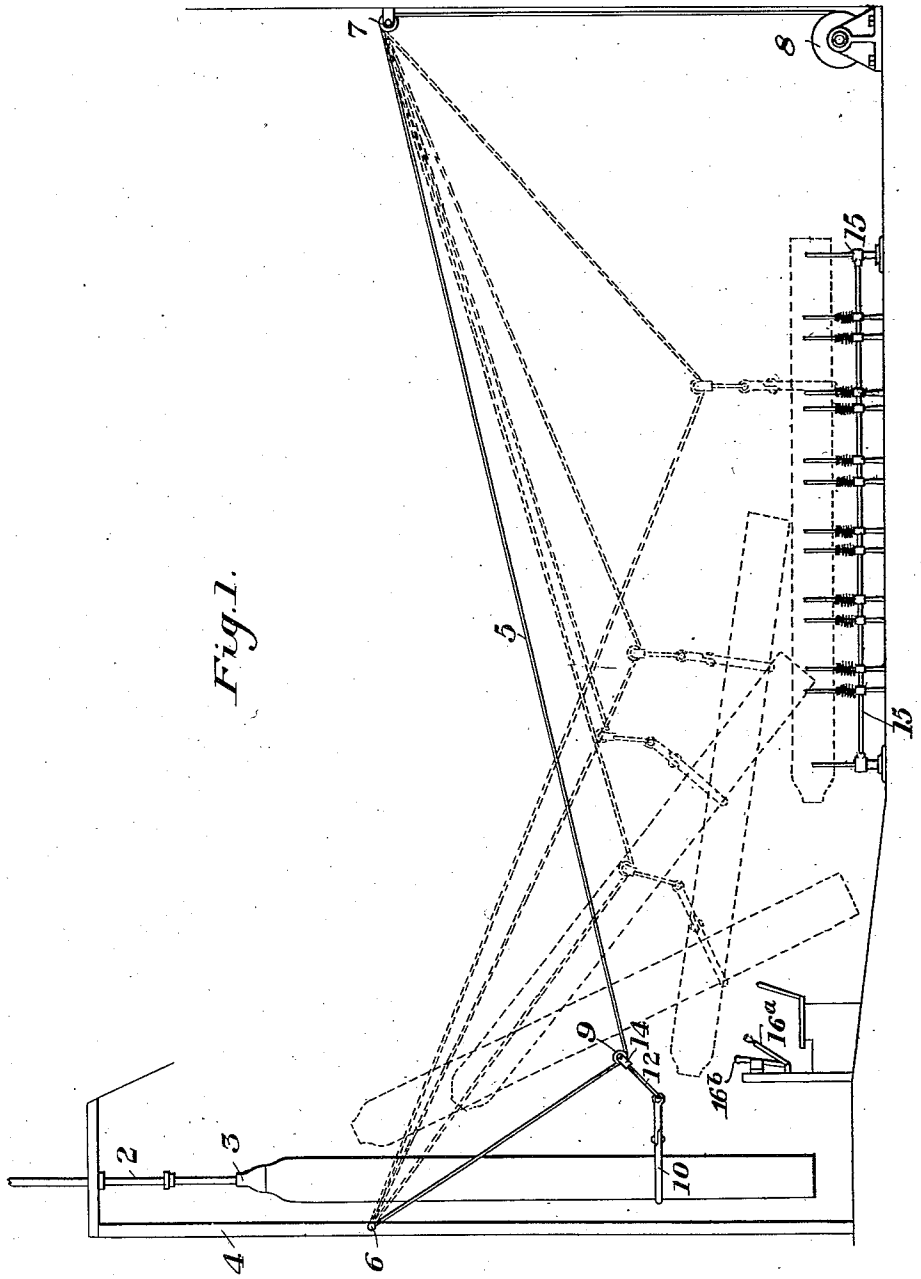
L. R. SCHMERTZ.

TAKING-DOWN APPARATUS FOR GLASS CYLINDERS.

APPLICATION FILED MAR. 20, 1906.

3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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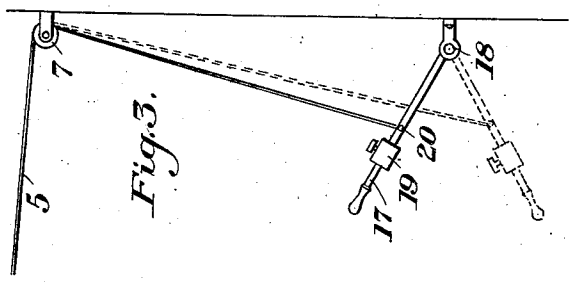

Fig. 3.

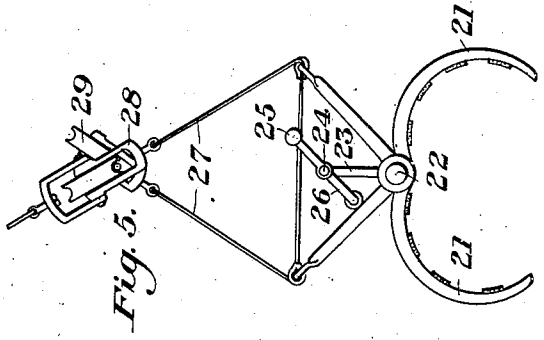

Fig. 5.

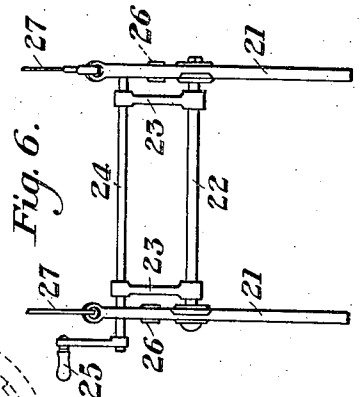

Fig. 6.

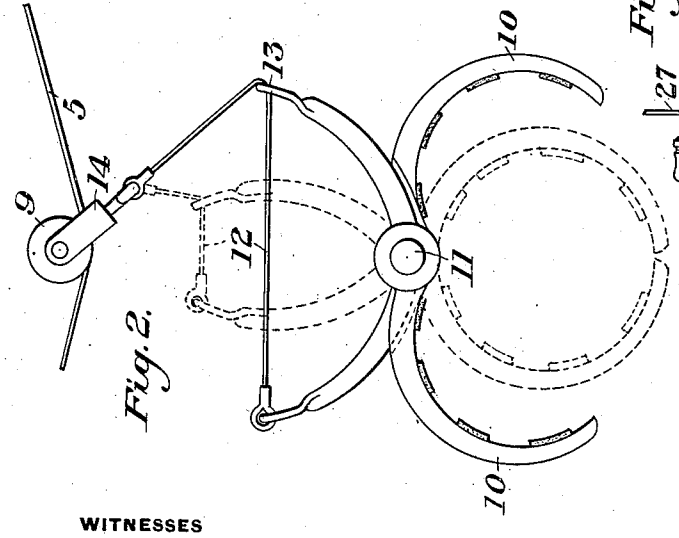

Fig. 2.

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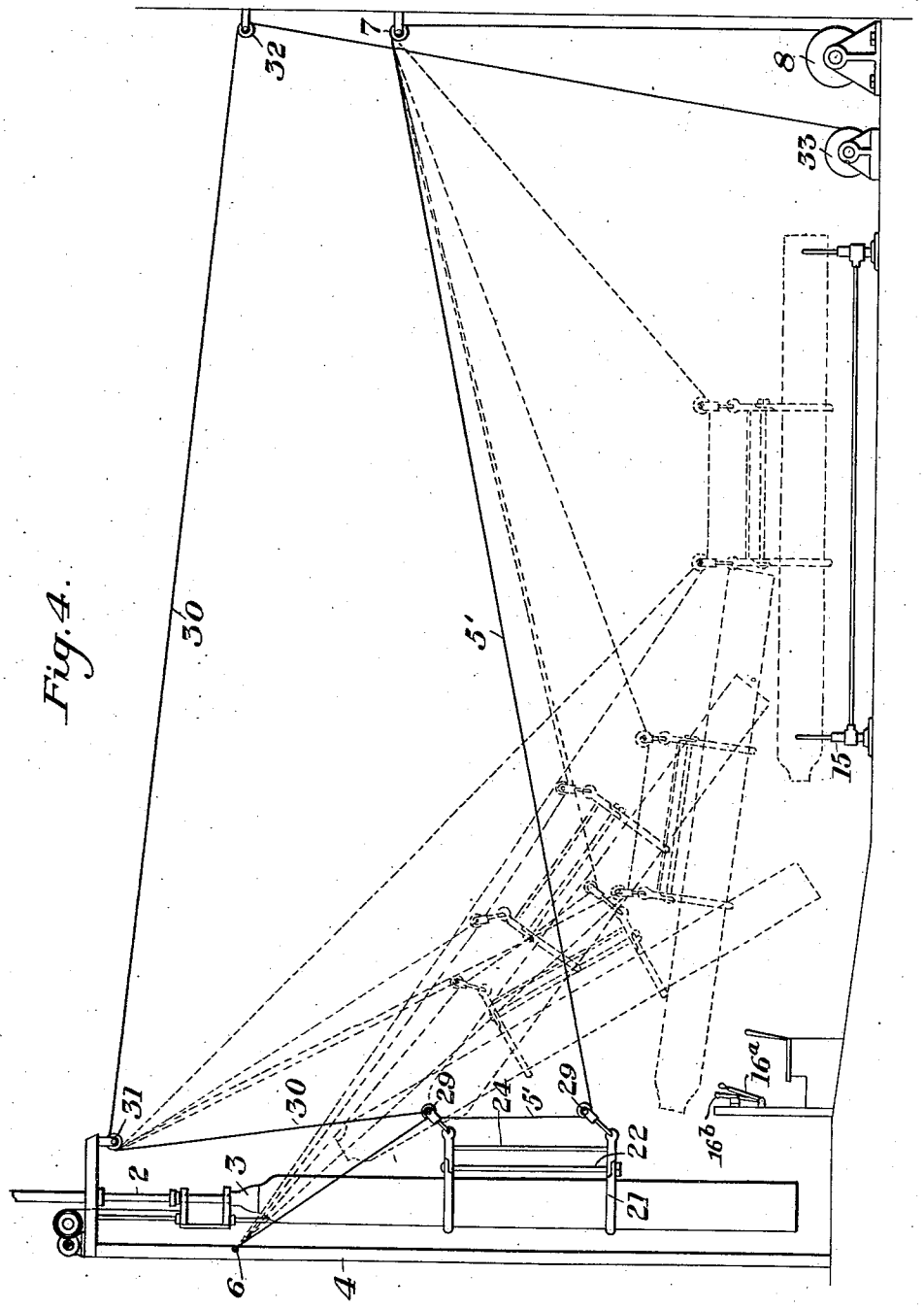
3 SHEETS—SHEET 3.

Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

LOUIS R. SCHMERTZ, OF JEANNETTE, PENNSYLVANIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WINDOW GLASS MACHINE COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

TAKING-DOWN APPARATUS FOR GLASS CYLINDERS.

No. 890,306. Specification of Letters Patent. Patented June 9, 1908.

Application filed March 20, 1906. Serial No. 307,001.

To all whom it may concern:

Be it known that I, LOUIS R. SCHMERTZ, of Jeannette, Westmoreland county, Pennsylvania, have invented a new and useful Taking-Down Apparatus for Glass Cylinders, 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 one form of my apparatus; Fig. 2 is a detail view of the tongs; Fig. 3 is a detail view of another device for changing the length of the cable between its points of support; Fig. 4 is a view similar to Fig. 1, showing another form of the apparatus with two sets of tongs; and Figs. 5 and 6 are detail views of the tongs of Fig. 4.

My invention relates to the taking down of glass cylinders which are drawn upwardly from a bath of molten glass, the lower end of the cylinder then being severed from the glass in the receptacle.

The object of the invention is to provide a simple, cheap and efficient device which will reduce the liability to breakage and injury to the workman.

To that end the invention consists in a cable system provided with mechanism for gripping the glass cylinder, the cable being so arranged that by lengthening or shortening its intermediate portion, the cylinder may be lowered and deposited upon a horse or other apparatus.

In the drawings, referring to the form of Fig. 1, 2 represents the air admission pipe having the bait 3 at its lower end, and 4 represents diagrammatically the stationary frame of the drawing machine.

5 is a cable, one end of which is secured to the frame at 6, while the other end portion extends over the pulley 7 mounted in fixed bearings and down to the winding drum 8. On the cable rests a pulley or sheave 9 carrying suitable gripping mechanism to engage the cylinder. I have shown a simple form of this gripping mechanism in Fig. 2, wherein the gripping arms 10 are in the form of cross levers pivoted to each other at 11. A cord 12 extends from the end of one lever through an eye 13 on the other lever, and thence up to the hanger 14 of the pulley. This gripping device may be made of iron or steel, and in order to prevent injury to the glass cylinders, the gripping portions are preferably provided with asbestos pads. In the form in which I have used them, the arms are first covered with rubber tubes and asbestos cord is then wound over the tubes.

15 represents the horse having suitably shaped supports on which the cylinder may be raised horizontally.

16 indicates the operator's pulpit from which the drawing of the glass is controlled and at which a rheostat is provided with suitable connections and switches 16^a and 16^b arranged to control the electrically-operated winding drum 8 for the cable and the drawing device respectively.

In the use of the device, when the cylinder has been drawn to the desired height and severed at its lower end from the bath of molten glass, the gripping device is moved along the cable and placed by hand around the lower portion of the cylinder, as indicated at the left-hand portion of Fig. 1. The operator then starts the drum into rotation to a slight amount sufficient to draw down on the end of the cable and thus pull out the lower end of the cylinder. As soon as the lower end of the cylinder is moved out, the operator then allows the bait to lower gradually, so that the cylinder faces the successive positions shown in dotted lines in Fig. 1. When the cylinder has thus been lowered and moved out into nearly a horizontal position, a workman detaches the blow-pipe from the air-supply pipe and allows the cylinder to move back by gravity over the horse, the pulley 9 traveling along the cable. The operator then reverses the direction of rotation of the drum, thus slacking away on the cable and allowing the cylinder to move down gently into the supports.

Instead of using the winding drum for changing the length of the cable between the fixed point 6 and the supporting pulley 7, I may employ the lever 17 shown in Fig. 3. This lever is pivoted at the point 18 and is provided with an adjustable counterweight 19, the end of the cable being secured at an intermediate point 20. The other parts will be the same as in Figs. 1 and 2, and to swing out the lower end of the cylinder, the operator will simply pull down on the lever. When the cylinder is in horizontal position

over the horse, he will move up the lever gradually to allow the cylinder to sink into place on the supports of the horse.

Instead of using a single gripping device as shown in Figs. 1 and 2, I may employ two or more gripping devices. Thus, in Figs. 4 and 5, I show two gripping devices 21, each of which is substantially the same as the single gripping device of Figs. 1 and 2, excepting that their fulcrum portions are connected by the rigid bar or pipe 22, from which extend the supports 23 having bearings for a shaft 24 with a crank handle 25 at one end. The shaft 24 is provided with lever arms 26 having rollers which bear upon one of the levers of each gripping device. By turning the crank 25 the operator can force both grips apart in order to engage them with the cylinder. In this case the cords 27 are connected to the hangers 28 of the pulleys 29 traveling on the cable 5'. In this case I preferably employ an operating cord 30 which is connected to the pivot of one of the pulleys 29 whence it extends up over stationary pulley 31 and thence over stationary pulley 32, and down to a supplemental drum or winding device 33. This operating cord will assist the operator in bringing the gripping device up into position to engage the cylinder. In this case the gripping device being multiple will be of considerable weight, and hence the cord will assist the operator in engaging them with the cylinder. In this case the operations are substantially the same as in the first form, as to engaging and lowering the cylinder into place on the horse.

The advantages of my invention result from the simplicity of the system, its ease of operation and the reducing of breakage, and injury to the workmen.

Many changes may be made in the form and arrangement of the cable, the gripping device, and the means for actuating the gripping device and the cable without departing from my invention.

I claim:—

1. The combination with vertical glass drawing apparatus having a drawing device, and means for raising and lowering the same, of a coöperative take-down comprising a cable extending between fixed points, a gripping device mounted on the cable, and mechanism for changing the length of the cable between the fixed points; substantially as described.

2. The combination with vertical glass drawing apparatus having a drawing device, and means for raising and lowering the same, of a coöperative take-down comprising a cable fastened at one end at a fixed point, and extending over a pulley to a movable member, and a gripping device mounted on the cable between the fixed points; substantially as described.

3. The combination with vertical glass drawing apparatus having a drawing device, and means for raising and lowering the same, of a coöperative take-down comprising a cable having one end secured at a fixed point adjacent to the cylinder, and thence extending outwardly over a pulley to a take-up device, and a gripper having a trolley movable on the cable; substantially as described.

4. The combination with vertical glass drawing apparatus having a drawing device, and means for raising and lowering the same, of a coöperative take-down comprising a flexible cable extending between two points, gripping devices on the cable, and mechanism for slacking away the cable between the fixed points; substantially as described.

5. The combination with glass drawing apparatus having a vertically-movable bait cage, an operating station, a cable having a taking-down device, and mechanism at the station arranged to control the bait cage and the cable take-down device; substantially as described.

In testimony whereof, I have hereunto set my hand.

LOUIS R. SCHMERTZ.

Witnesses:

GEO. B. BLEMING,

JOHN MILLER.