

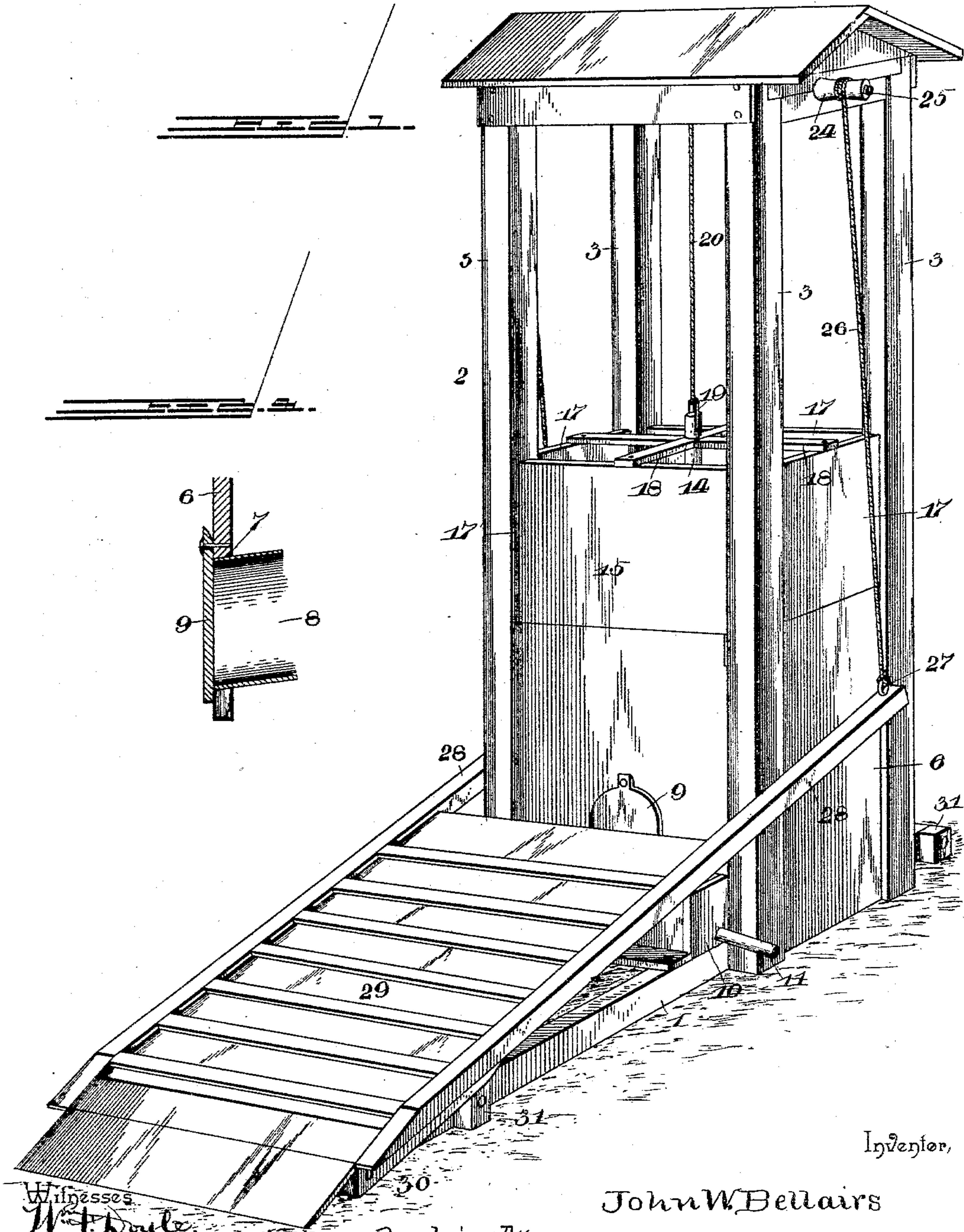
(No Model.)

2 Sheets—Sheet 1.

J. W. BELLAIRS.  
AUTOMATICALLY OPERATED PUMP.

No. 562,792.

Patented June 30, 1896.



Inventor,

John W. Bellairs

By his Attorneys,

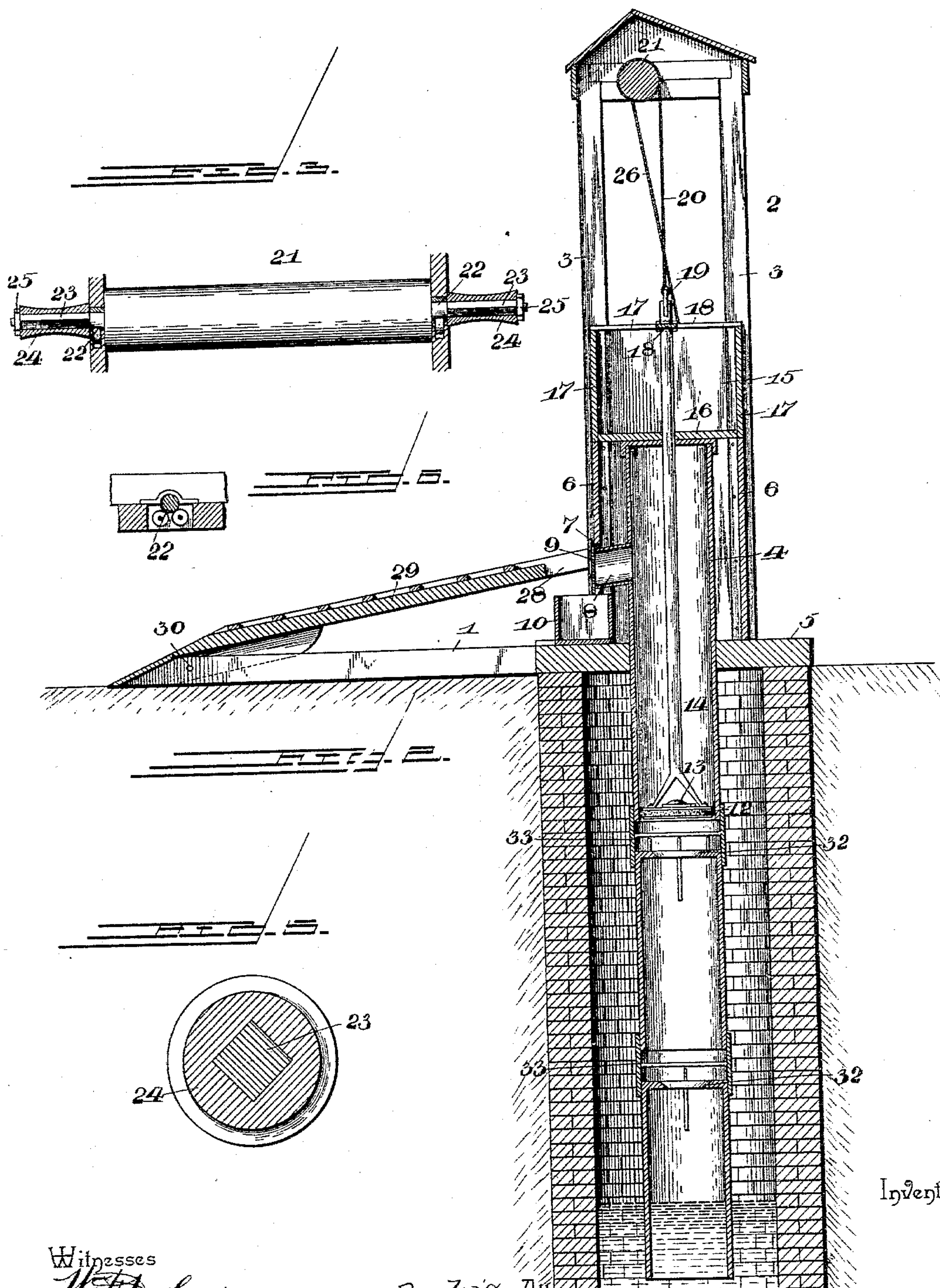
C. A. Snow & Co.



2 Sheets—Sheet 2.

No. 562,792.

Patented June 30, 1896.



Inventor,

Witnesses

W. F. Doyle.

*[Handwritten signature]*

By *Wm's* Attorneys,

John W. Bellairs,

Chas. Snow & Co.



# UNITED STATES PATENT OFFICE.

JOHN WILLIAM BELLAIRS, OF COLON, MICHIGAN.

## AUTOMATICALLY-OPERATED PUMP.

SPECIFICATION forming part of Letters Patent No. 562,792, dated June 30, 1896.

Application filed October 31, 1895. Serial No. 567,511. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN WILLIAM BELLAIRS, a citizen of the United States, residing at Colon, in the county of St. Joseph and State of Michigan, have invented a new and useful Automatically-Operated Pump, of which the following is a specification.

My invention relates to pumps, and has for its object to provide a pump and improved operating mechanism whereby water may be elevated from a well, cistern, spring, or other depressed source by the weight of stock in approaching the trough, suitable means being employed whereby the power or the length of stroke may be adjusted to suit the weight of the stock by which the apparatus is designed to be operated.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a pump mechanism constructed in accordance with my invention. Fig. 2 is a vertical central section of the same. Fig. 3 is a detail sectional view of the drum and the removable spools. Fig. 4 is a detail view of the valve at the outer end of the spout. Fig. 5 is a cross-section of one of the spools and the angular portion of the spindle upon which it is fitted. Fig. 6 is a detail view showing the bearing for the spindles of the drum.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The base 1 of the apparatus supports the frame or tower 2, having parallel corner standards 3, the pump-cylinder 4 being arranged at the center of the frame and extending through a suitable opening in the platform 5, to which the contiguous end of the base is attached. This stationary platform 5 is adapted to cover a well or cistern and may be of any desired size and shape to suit the conditions under which the apparatus is mounted.

The portion of the cylinder which projects above the plane of the stationary platform 5 is housed by means of walls 6, secured to the standards 3, the front wall being provided with an opening 7, contiguous to which is arranged the spout 8 of the pump, and this

opening 7 is closed by means of a valve 9 to avoid exposure of the pump-cylinder in winter. The trough 10 is arranged in position to receive water from the spout and may be provided with an outlet-pipe 11 through which water may flow to a trough (not shown) for small stock.

The plunger 12, which operates in the cylinder and is provided with a suitable clack-valve 13, is attached to the lower extremity of the pump-rod 14, and secured to this pump-rod is a slide 15, which is mounted to move vertically between the corner standards 3 as guides. This slide is constructed with a floor 16 and side walls 17, connected at their upper edges by cross-bars 18, which support a loop 19, and attached to this loop is a cable 20, connected at its upper extremity to a drum 21. This drum is mounted in bearings 22, formed in cross-pieces connecting the upper extremities of the standards 3, and the reduced spindles 23 of said drum, which project beyond the outer sides of the cross-pieces of the frame, are fitted with detachable and interchangeable spools 24. Any suitable means for securing these spools to the spindle or reduced extremities of the drum may be employed, but in the construction illustrated said reduced extremities are made of angular section and the spools are held in place by nuts 25. Reeled upon said spools are cables or chains 26, connected to eyes 27 on the side timbers or arms 28 of the hinged platform 29, said hinged platform being mounted at its outer end upon the side timbers of the base, as shown at 30.

It is obvious that stock in approaching the trough by traversing the hinged or vertically-movable platform will depress the latter and by communicating rotary motion to the spools through the cables or chains 26 will actuate the drum to reel the cable 20, and thus elevate the plunger and discharge water into the trough. The slide 15 is of such construction as to adapt it to contain weights to counterbalance the platform 29, and hence after the stock have left the platform it will be elevated and the plunger will be depressed to the proper position for a succeeding stroke.

When it is desired to change the length of stroke of the plunger or adapt the device for operation by stock of more or less weight, the



spools may be removed and others of larger or smaller diameter substituted, thereby providing for the adjustment of the parts to enable the apparatus to be operated by either cattle or small stock. The base is preferably secured in place by means of stakes 31.

I preferably employ a sectional pump-cylinder provided at intervals corresponding in length approximately with the length of stroke of the plunger with upwardly-opening valves 32, arranged at the joints between contiguous sections of the cylinder, or at the couplings 33 by which the sections of the cylinder are connected.

The duplication of the valves serves to positively support the water below the plunger which has been elevated during the upstroke by suction, and thus maintain the portion of the cylinder below the plunger in a full condition, even after the operation of the pump has ceased, by preventing the water from flowing back into the well.

The utility of this device will be readily apparent to those skilled in the art, it being obvious that means such as that described for enabling stock to obtain water fresh from the source of supply whenever they desire it should operate to prevent the stock from drinking more than is necessary at one time, and also prevent the stock from falling into springs and from being obliged in winter to drink water which is of too low a temperature.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. The combination of a base, a pump-cylinder extending at its upper end above the plane of the base, a plunger operating in the pump-cylinder and having a pump-rod, an open-topped housing supported by the platform around the upper extremity of the pump-

cylinder, a slide mounted in guides above the housing and adapted when depressed to close the open top thereof, said slide being connected to the pump-rod, and means including a depressible platform for elevating the slide and plunger, substantially as specified.

2. The combination of a base, a pump-cylinder arranged at its upper end above the plane of the base, an open-topped housing surrounding the upper extremity of the pump-cylinder, a plunger operating in the cylinder, a hollow slide mounted in suitable guides above the housing and connected to the pump-rod, said slide having a closed bottom to fit and form a top for the housing when the plunger is depressed, and means including a depressible platform for elevating the slide and plunger, substantially as specified.

3. The combination of a base, standards rising from the base, a pump-cylinder arranged at its upper end between the standards, walls connecting the standards around the upper extremity of the pump-cylinder to house the latter, a slide mounted for vertical movement between the standards and having a closed bottom adapted to fit upon the upper ends of the housing-walls when the slide is depressed, a plunger operating in the cylinder and having a pump-rod connected to the slide, a drum mounted in cross-bars connecting the upper ends of the standards and connected by a cable with the upper end of the pump-rod, a pivotal platform, and cables connecting the free end of the platform with spools on the drum, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN WILLIAM BELLAIRS.

Witnesses:

EDWIN R. HILL,  
FRANK E. HILL.