

(No Model.)

2 Sheets—Sheet 1.

J. C. & E. A. TOM.
PUMP.

No. 517,902.

Patented Apr. 10, 1894.

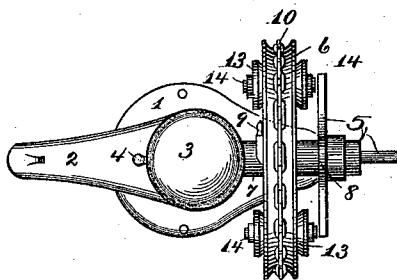
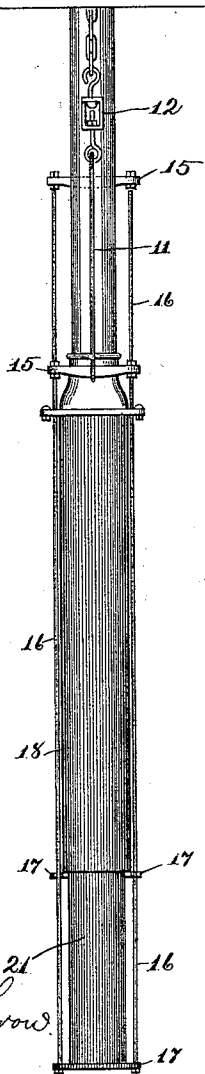
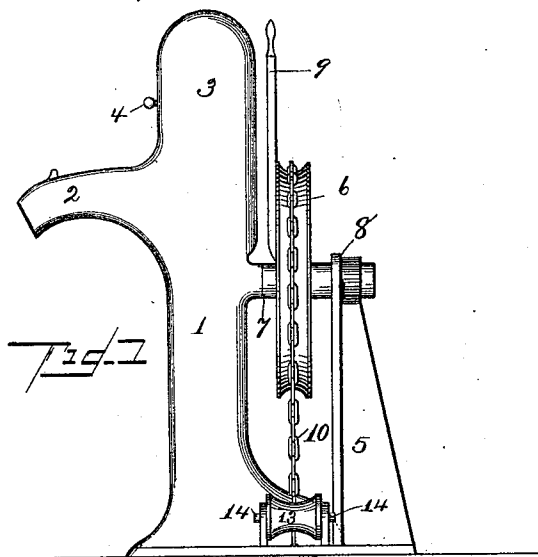


Fig. 4

Witnesses

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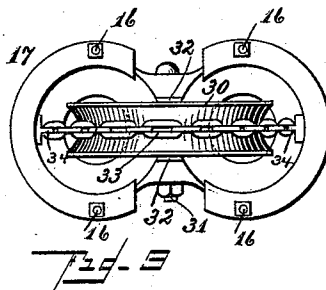
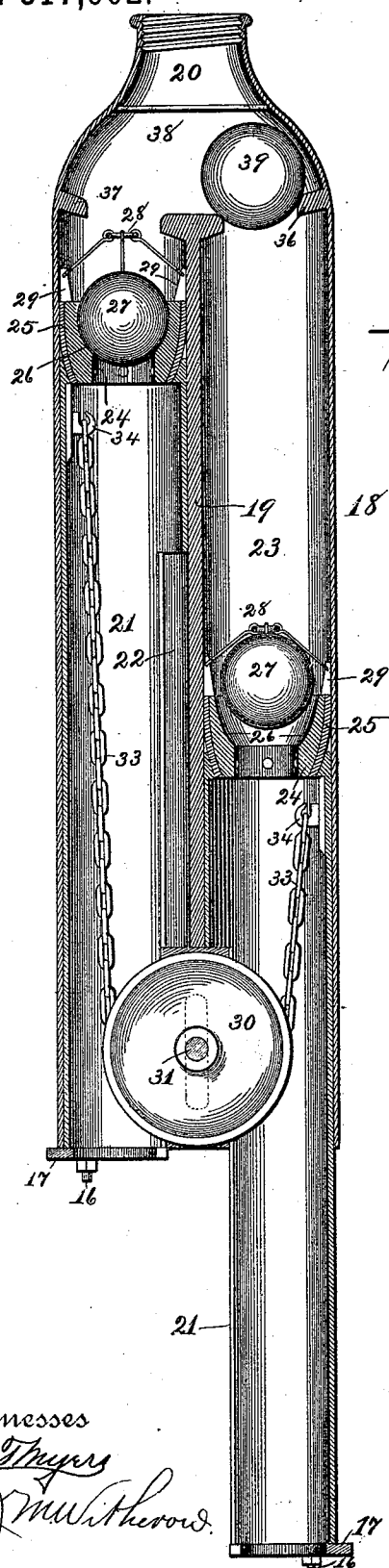
(No Model.)

2 Sheets—Sheet 2.

J. C. & E. A. TOM.
PUMP.

No. 517,902.

Patented Apr. 10, 1894.



Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH C. TOM AND EDWARD A. TOM, OF PONTOTOC, TEXAS.

PUMP.

SPECIFICATION forming part of Letters Patent No. 517,902, dated April 10, 1894.

Application filed March 30, 1893. Serial No. 468,364. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH C. TOM and EDWARD A. TOM, of Pontotoc, in the county of Mason, State of Texas, have invented certain new and useful Improvements in Pumps, of which the following is a specification, reference being had to the accompanying drawings.

The object of our invention is to produce an improved pump which may be manufactured at a comparatively small cost, which is simple and effective in operation, which requires little attention to keep clean, but which may be readily cleaned if required.

In the accompanying drawings: Figure 1 is a side elevation of our pump complete. Fig. 2 is a central vertical section of the cylinders and working parts. Fig. 3 is a bottom plan view of the cylinders detached. Fig. 4 is a top plan view with the platform and pump operating mechanism.

Referring to the figures on the drawings: 1 indicates a pump frame having a nozzle 2, a dome 3 and an air vent 4.

5 indicates a side brace and 6 a pulley mounted in suitable bearings 7 and 8 in the frame and in the side brace.

9 indicates a handle by which rocking motion may be imparted to the pulley 6.

10 indicates a flexible connection, as for example, a chain passing over the pulley 6 and which is designed to impart motion to rods 11 to which they may be preferably connected by a turn buckle 12.

13 indicates guide pulleys mounted in suitable bearings 14 in the frame and side brace near their lower end and adapted to guide the chain 10 around the pulley 6 and to bring its ends close together for operating the rods 11. The rods are preferably united at their lower ends, respectively, to yokes 15, which carry respectively a pair of rods 16, carrying at their extremities a bridge 17.

18 indicates a double cylinder cast together preferably, as illustrated, and defined by a middle wall or partition 19. By this means a most direct course for the water from each of the cylinders into the discharge pipe 20 communicating with the nozzle 2 of the pump, is obtained.

21 indicates plunger rods carried, preferably, on one side of each of the cylinders 22

and 23. At their upper ends they carry open plunger heads 24, preferably provided with packing rings 25, and each having in its upper end a circular valve seat 26.

27 indicates a ball carried within a cage 28 in the upper side of the plunger head and which is adapted to close the valve seat 26 and to form thereby a water tight joint.

29 indicates ball guide ribs, by which when the ball is raised, it is guided surely into the valve seat.

30 indicates a plunger chain pulley carried in suitable bearings on a suitable bolt 31, in flanges 32 defined by the breaking away of the middle wall 19. The bolt being adjustable the pulley may be raised or lowered to suit the length of the chain 33. This chain is connected, as by hooks 34, to the lower end of each of the plunger heads and passes over the periphery of the pulley 30. In this manner the direct pull of the bridge 17 to lift the plunger head, which is the pull to which the power for operating the pump is directly applied, tends at the same time to lower the opposite plunger head.

36 and 37 indicate inclined valve seats located in the upper end of each of the respective cylinders and defining a common receptacle adapted to receive the water discharged from the respective cylinders, and by the operation of the ball 39 to prevent the escape of water into the cylinder whose plunger head is descending.

In operation, suppose the plunger heads to be in position shown in Fig. 2 of the drawings, and that their positions are to be reversed, the lowest plunger begins to ascend, the ball 39 is driven by the current of ascending water out of the valve seat 36 and rolls into the valve seat 37, thereby preventing the escape of water out of the receptacle 38, which is being constantly supplied from the cylinder 23 by the ascent of its plunger head. When that plunger head has reached the upward limit of its movement, the other plunger head begins to ascend, the ball 39 is rolled back in like manner from the seat 37 into the seat 36, and the operation is repeated as before. The motion to the plunger head is imparted by the rocking of the pulley 6 backward and forward by the lever 9.

We do not desire to limit ourselves to the

constructions herein shown and described, because they may be varied somewhat in many respects without departing from the scope of our invention.

5 What we claim is—

1. In a pump, the combination with actuating mechanism a pair of cylinders, open plungers and ball valves therein, a chain connecting the plungers, and an adjustable chain
10 guide pulley, of a common receptacle above the cylinders, oppositely inclined valve seats over each of the cylinders, and a free ball adapted to alternately close the cylinders, substantially as specified.

15 2. In a pump, the combination with a frame, pipe, a pair of cylinders, oppositely inclined valve seats over the cylinders, respectively, a ball valve adapted to alternately close each cylinder, and a receptacle above the valve
20 seats, of plungers in the cylinders provided with ball valves, an adjustable pulley in the ends of the cylinders, and a chain connecting

the plungers and passing around the pulley, substantially as and for the purpose specified.

3. In a pump, the combination with a frame, 25 pipe, a pair of cylinders oppositely inclined, valve seats above said cylinders and a receptacle thereabove, of a ball valve adapted to alternately close the cylinders, hollow plungers within the cylinders provided with ball 30 valves, an adjustable pulley in the lower ends of the cylinders, a chain connecting the plungers and passing around the pulley, a rock pulley above said cylinders operatively connected therewith and with the plungers, and 35 guide pulleys adapted to guide said chain, substantially as and for the purposes specified.

In testimony of all which we have hereunto subscribed our names.

JOSEPH C. TOM.
EDWARD A. TOM.

Witnesses:

J. M. POOL,
JNO. KELLEY.