(No Model.) 2 Sheets—Sheet 1.

P. E. WISTRAND.

PUMP.

No. 543,954. Patented Aug. 6, 1895.

FIG. 1

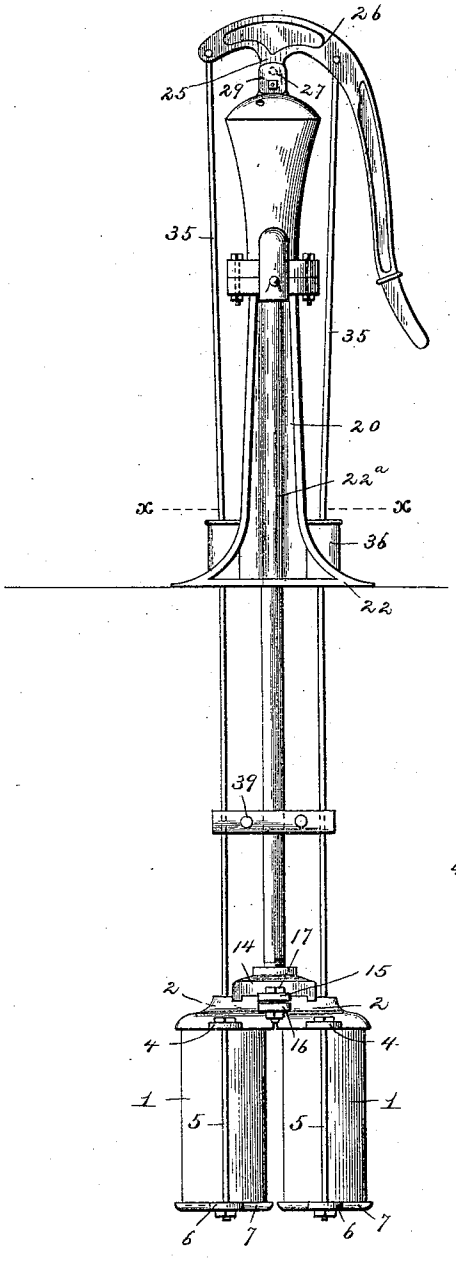


FIG. 2.

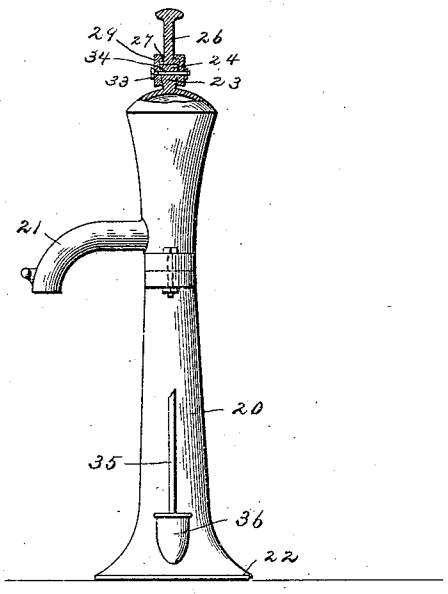
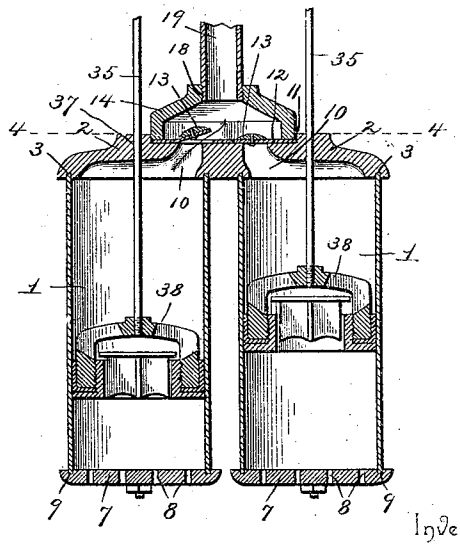


FIG. 3.



Witnesses

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Inventor

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(No Model.) 2 Sheets—Sheet 2.

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FIG. 4.

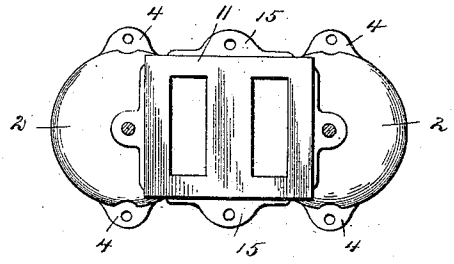


FIG. 5.

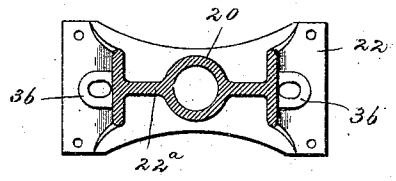


FIG. 6.

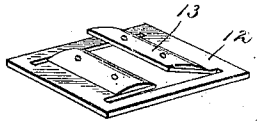


FIG. 7.

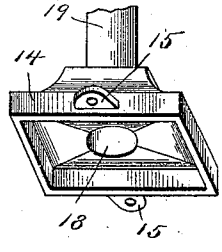
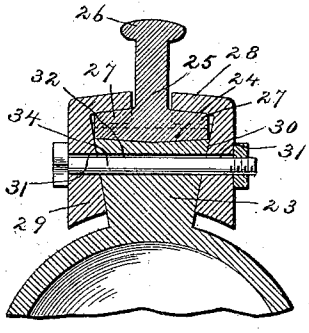


FIG. 8.



Witnesses
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Inventor
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By his Attorneys.
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UNITED STATES PATENT OFFICE.

PETER E. WISTRAND, OF KEWANEE, ILLINOIS.

PUMP.

SPECIFICATION forming part of Letters Patent No. 543,954, dated August 6, 1895.

Application filed September 25, 1894. Serial No. 524,103. (No model.)

To all whom it may concern:

Be it known that I, PETER E. WISTRAND, a citizen of the United States, residing at Kewanee, in the county of Henry and State of Illinois, have invented a new and useful Pump, of which the following is a specification.

This invention relates to double-cylinder pumps; and it has for its object to effect certain improvements in pumps of this character that will provide a pump both simple and durable or strong in construction and efficient in operation to elevate in large volumes a continuous stream of water.

To this end, therefore, the invention primarily contemplates certain improvements in the specific construction of the cylinder and pump-stand parts of a double-cylinder pump.

With these and other objects in view which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts, hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a side elevation of a pump constructed in accordance with this invention. Fig. 2 is a detail elevation of the tubular pump-stand with the pump-handle connection with said stand showing in section. Fig. 3 is a central longitudinal sectional view of the cylinders and cylinder connections of the pump. Figure 4 is a sectional view on the line 4 4 of Fig. 3. Fig. 5 is a similar view on the line x x of Fig. 1. Fig. 6 is a detail in perspective of the combined flexible valve and packing-plate. Fig. 7 is a detail in perspective of the detachable valve cage or box. Fig. 8 is an enlarged detail sectional view of the detachable pump-handle connection with the top of the pump-stand.

Referring to the accompanying drawings, 1 1 designate a pair of closely-arranged parallel pump-cylinders open at both ends and adapted to be inclosed at their upper ends by the upper double cylinder-cap 2. The double upper cylinder-cap 2 consists of a single casting, and is provided in its under face with separate circular grooves 3, to receive in a water-tight joint the upper ends of the cylinders 1, and the said cylinder-cap 2 is provided upon opposite sides thereof with opposite pairs of bolt-lugs 4, to which are detachably bolted the upper ends of the opposite side tie rods or bolts 5, the lower ends of which are detachably bolted to the opposite bolt-lugs 6 of the lower cylinder-cap 7. The lower cylinder-caps 7 may be of any approved construction, but are preferably shown as provided with a series of inlet-openings 8 for the inlet of water into the cylinders, and when the pump-cylinders are provided with the perforated lower caps 7 the pump of course is adapted to be used as a submerged pump, with the cylinders 1 submerged in the water to be elevated. The lower perforated cylinder-caps 7 are provided in their upper faces with the circular grooves 9 to snugly fit over the lower ends of the cylinders 1 to make a perfectly water-tight, yet detachable, connection therewith.

By means of the side tie rods or bolts 5 the cylinders 1 are detachably clamped between the upper and lower caps thereof, and the double upper cylinder-cap 2 is provided with the separate water-passages 10, leading respectively from the upper ends of the cylinders and opening into the bottom of the squared recess or shouldered seat 11. The squared recess or shouldered seat 11 is adapted to receive therein the combined flexible valve and packing-plate 12, consisting of a single piece of leather, rubber, or other suitable material, that is cut to form separate weighted flap-valves 13, working respectively over the upper ends of the water-passages 10 of the cylinder-cap in order to provide a valve for the upper end of each cylinder, as is necessary for the effective operation of the pump.

The flexible plate 12 not only provides valves for the upper ends of the cylinders, but also forms a packing or gasket, on which is clamped the lower square edge of the square valve box or cage 14, that is also fitted in the squared recess or shouldered seat 11. The valve cage or box 14 is square to bring the cylinders as close together as possible and to allow the pump-rods to work through the top of the cylinders. The said cage or box snugly registers at its lower edge within the recess or seat 11, and is provided at opposite sides with the bolt-lugs 15 that are aligned with similar lugs 16 therebelow, on opposite sides of the cap 2, and said aligned lugs are connected by

the clamping-bolts 17, that provide for detachably clamping the valve cage or box on the cylinder-cap. The said valve cage or box 14 is provided with a top discharge-opening 18, in which is fitted the lower end of the single discharge-pipe 19, the upper end of which connects with the tubular pump-stand 20, provided with the usual side discharge-spout 21.

The tubular pump-stand 20 in the present invention is provided with a flanged attaching-base 22, an H-shaped lower portion 22^a, and at the top thereof is provided with an integral dovetailed attaching lug or tongue 23, that is provided with a recessed upper side 24, on which bears and fits the rounded lower side of the bearing-lug 25, projected integrally from the inner side of the pump-handle 26, near one end thereof. The bearing-lug 25 of the said pump-handle is provided with the oppositely-disposed slightly-tapered spindles 27, which together form a rounded lower side registering in the upper recessed side 24 of the lug or tongue 23, and the upper sides of said oppositely-disposed tapered spindles 27 are engaged by the curved inwardly-disposed combined bearing and clamp-flanges 28, bent inwardly from the upper ends of the opposite clamp-plates 29, that are provided with inner beveled sides 30, registering with the opposite beveled sides of the tongue or lug 23, and which is further provided with the bolt-openings 31, aligning with the similar opening 32 in the tongue or lug 23 to receive the transverse bolt 34, that serves to detachably clamp the plates 29 in position and to properly support the pump-handle for a pivotal motion on top of the pump-stand, and by having the bolt-openings sufficiently large the wear occasioned by the oscillation of the pivot-spindles 27 may be easily taken up by readjusting and tightening the clamp-plates 29.

The pump-handle 26 has pivotally connected thereto at both sides of its pivot the upper ends of the opposite pump-rods 35, that are guided to pass through the opposite tubular guide-castings 36, formed at the base of the stand 20 at opposite sides thereof, and the lower ends of said pump-rods work through guide-openings 27 in the upper cylinder-cap 2 and are connected to valved plungers 38, working within the cylinders 1 alternately with respect to each other. At a point slightly above the pump-cylinders a suitable intermediate pump-rod guide 39 may be clamped onto the pipe 19 to steady and guide the rods 35 as they reciprocate.

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

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. The combination of a pump stand provided at its upper end with a recessed lug, a pump handle provided with a bearing lug having oppositely disposed spindles working in the recess of said lug, opposite clamp plates fitting against opposite sides of the lug and provided with inwardly disposed combined bearing and clamp flanges embracing the upper sides of said oppositely disposed spindles, and a bolt detachably clamping said plates to said lug, substantially as set forth.

2. The combination of a pump stand provided at its upper end with an attaching lug having opposite beveled and an upper recessed side, a pump handle provided with an integral bearing lug having oppositely disposed tapered spindles registering in the upper recessed sides of said attaching lug, opposite clamp plates having inner beveled sides fitting the similar sides of said attaching lug, and inwardly disposed curved combined bearing and clamp flanges embracing said oppositely disposed spindles, and a bolt detachably clamping said plates to said lugs, substantially as set forth.

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

P. E. WISTRAND.

Witnesses:
JOHN H. SIGGERS,
HAROLD H. SIMMS.