(No Model.)

G. G. & T. T. PATCHEL.

PUMP.

No. 418,745. Patented Jan. 7, 1890.

Fig. 1.

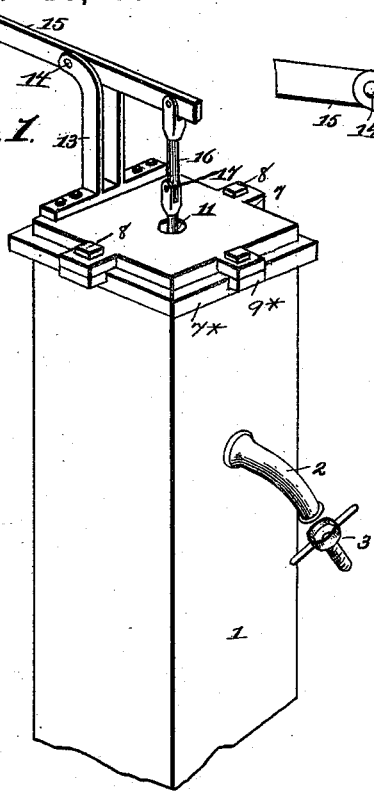


Fig. 2.

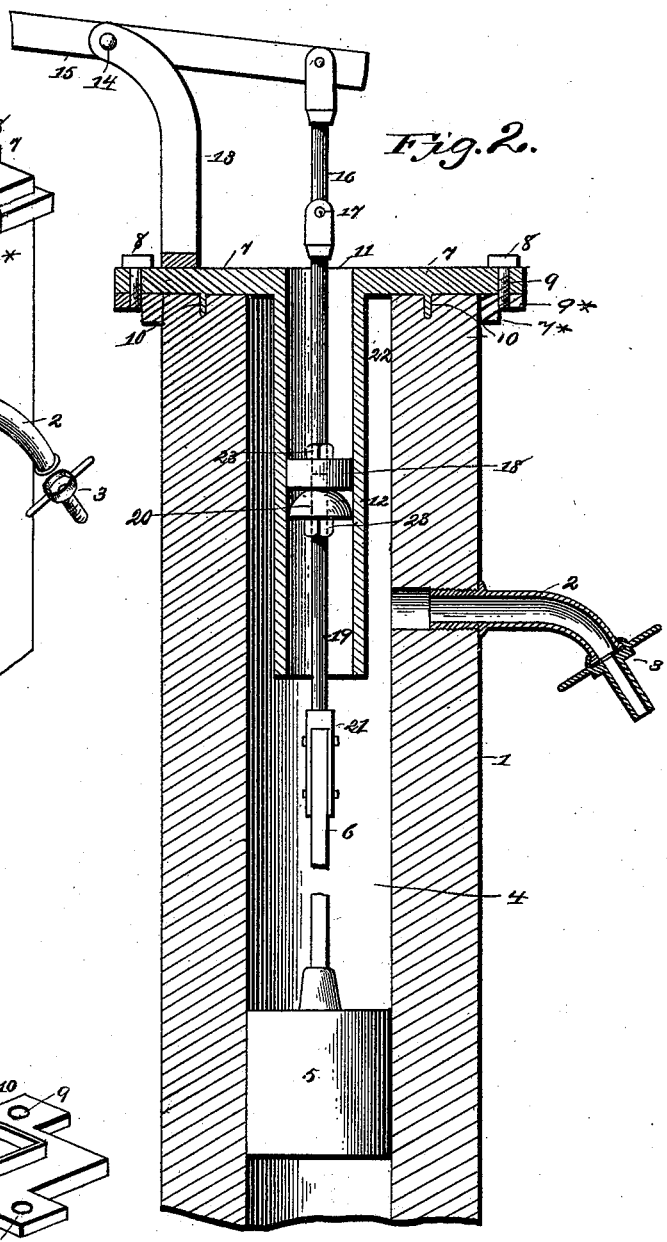
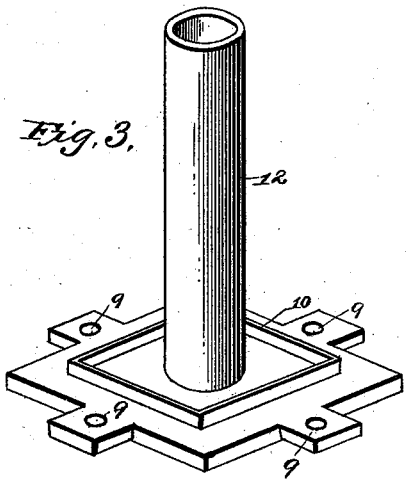


Fig. 3.



Witnesses:

E. Wurdeman

M. S. Lovell

Inventors

Geo. G. Patchel and Thomas T. Patchel

By their Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

GEORGE G. PATCHEL AND THOMAS T. PATCHEL, OF DARBY, PENNSYLVANIA.

PUMP.

SPECIFICATION forming part of Letters Patent No. 418,745, dated January 7, 1890.

Application filed August 13, 1889. Serial No. 320,609. (No model.)

To all whom it may concern:

Be it known that we, GEORGE G. PATCHEL and THOMAS T. PATCHEL, citizens of the United States, residing at Darby, in the county of Delaware and State of Pennsylvania, have invented a new and useful Pump, of which the following is a specification.

This invention has relation to pumps, and has special reference to an attachment designed to be applied to an ordinary wooden pump-stock of the old style or to a pump when manufactured, whereby the same is converted into a force-pump capable of throwing a strong, steady, and unbroken stream of water.

The invention consists in certain features of construction hereinafter specified, and more particularly pointed out in the appended claim.

Referring to the drawings, Figure 1 represents a perspective of a pump-stock provided with our improved attachment. Fig. 2 is a vertical central section of the same; Fig. 3, a detail bottom perspective of the pump-cap.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 represents an ordinary pump-stock provided with the usual spout 2, of cast metal, which I prefer to provide with the removable coupling 3 for the attachment of a hose-section. The pump-stock is internally bored, as at 4, and within the same reciprocates the bucket 5, of ordinary construction, which is suspended by the pump-rod 6. Upon the upper end of the stock is secured a collar 7*, having perforated lugs 9*.

7 represents a cast-metal pump-cap of a contour in plan adapted for the character of pump to which it is to be applied, said cap being bolted to the lugs 9* by bolts 8, inserted through openings 9, formed at intervals in the cap, said cap also being provided with an annular or other shaped integrally-cast depending rib or fin 10, adapted to take into the pump-stock and form an air-tight connection therewith. The cap 7 is provided with a central opening 11, and surrounding the opening and depending from the cap and integral therewith is a tube 12, the end of which extends down within the bore 4 of the stock and preferably below the spout 2 and into the water within the stock.

Suitably secured to the cap 7, and in this instance by the bolts 8, is cast a metal standard 13, having upper handle-receiving bearings 14, in which is pivoted the operating-handle 15, the inner end of which projects beyond the bearings 14 and into line with the depending tube 12. Loosely connected with the inner end of the handle 15 is a rod 16, broken at its middle, as at 17, and having its lower end threaded and provided with a plunger 18, said plunger serving as a coupling for connecting the rod 16 with a second rod 19, having a packing 20, which, with the plunger, is mounted for reciprocation in the depending tube 12, the lower end of the rod 19 being rigidly connected to the upper end of the pump-rod 6, as at 21.

By reason of the tube 12 being smaller than the bore 4 an annular air-chamber 22 is provided at the upper end of the bore 4, thus making the pump double acting.

The operation of the pump will be apparent from the above description in that by rocking the operating lever or handle water will be drawn up and forced out of the spout 2 at both the up and down stroke of the piston and bucket, and by reason of the relative difference in size between the depending tube 12 and the bore of the stock great force will be given the flow of water, and this, too, with comparatively slight exertion. By reason of the tube terminating within the body of water in the pump the connection between the piston 18 and the packing 20 and the tube is maintained air-tight, and also is sufficiently lubricated for easy operation.

Any form of piston and packing may be substituted for those shown, which in this instance I maintain in proper position by means of opposite jam-nuts 23.

Having described our invention, what we claim is—

The combination, with the pump-stock 1, having the transverse spout 2 and central vertical bore 4, the inclosed bucket 5, and rod 6, of the cast-metal collar 7*, having perforated lugs 9*, cap 7, perforated, as at 9, and having perforated lugs registering with those of the collar and bolted to the same, as at 8, and having the air-tight depending flange 10, forced into the stock and having the opening 11, surrounded by the depending tube 12, terminating below the inner end of the spout 2, the

standards 13, bolted to the cap and having bearings 14, the lever 15, pivoted in the bearings, the rod 16, broken, as at 17, and having its upper end connected pivotally with the inner end of the lever, and the rod 19, connected at its lower end, as at 21, to the upper end of the rod 6, and the piston and packing 18 and 20, connecting the adjacent ends of the rods 16 and 19 and having the jam-nuts 23, said piston and packing being mounted within the tube 12, all combined and operated substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

GEO. G. PATCHEL.
THOMAS T. PATCHEL.

Witnesses:
D. F. SWISHER,
E. VERLENDEN, Jr.