(No Model.)

F. G. CORNELL.

PUMP.

No. 261,685. Patented July 25, 1882.

Fig. 1.

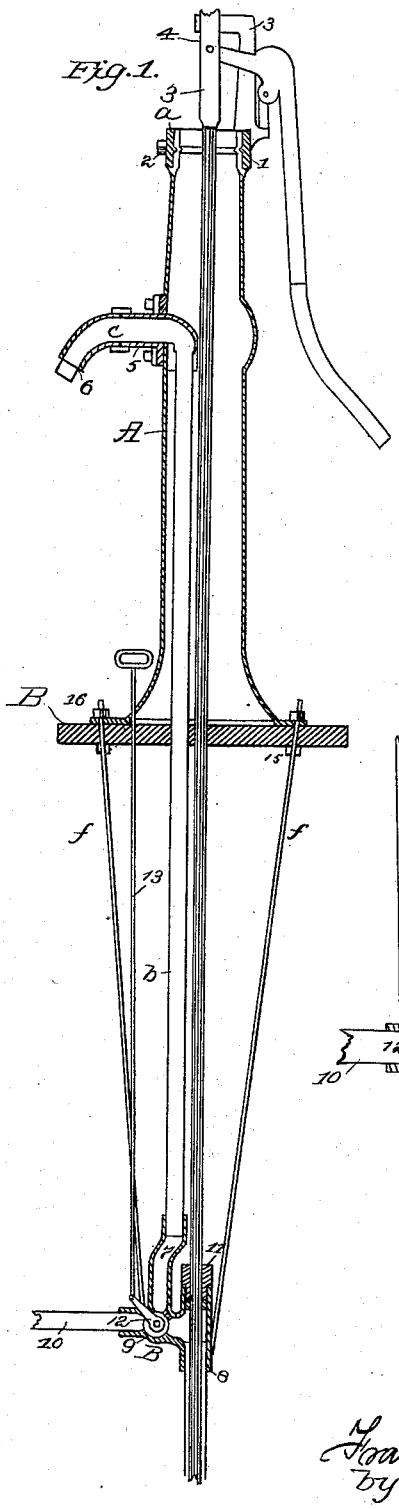
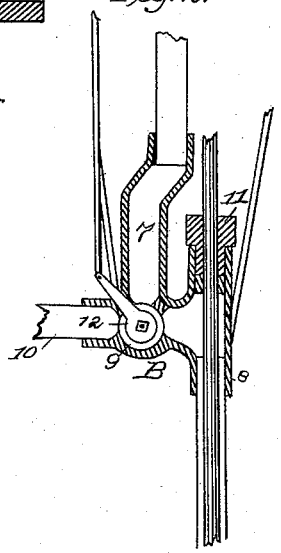


Fig. 2.



Witnesses:
Walter D. Wales
F. L. Middleton

Inventor
Frank G. Cornell
by
Geo. H. Fearn
Atty.

UNITED STATES PATENT OFFICE.

FRANK G. CORNELL, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO THE CORNELL MANUFACTURING COMPANY, OF MICHIGAN.

PUMP.

SPECIFICATION forming part of Letters Patent No. 261,685, dated July 25, 1882.

Application filed January 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, FRANK G. CORNELL, of Grand Rapids, county of Kent, State of Michigan, have invented a new and useful Improvement in Pumps; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention is an improvement in lift-pumps; and it consists in a special construction of what is technically called the "forcing-chamber," and devices for aligning and holding in place this chamber within the well underneath the platform.

The object of the invention is to simplify and cheapen the construction, and to enable ordinary workmen to set up the pump and to give the forcing-chamber secure and firm position and accurate alignment, which in light pumps is necessary in order to avoid undue wear and friction.

In the accompanying drawings, Figure 1 shows a vertical central section of the pump, some of the parts being shown in side elevation. Fig. 2 is an enlarged view of the forcing-chamber.

In these drawings, A represents an ordinary pump-barrel consisting of a hollow shell having flanges for attaching it to the platform. It is provided with a standard, 3, mounted on a ring on the top of the pump-barrel. A continuation of the piston-rod 3 passes through a guide, 4, in the usual manner. The piston-rod is provided at its lower end with an ordinary lift-valve, and passes through a stuffing-box, 11, in the tubular part 8 of the forcing-chamber, thereby driving the water through said chamber.

The forcing-chamber (marked B) consists also of a tubular part, 7, turned aside into a position near the piston-rod, where it connects with a small discharge-pipe running to the nozzle C. The pipe extending into the well or water is attached to the tubular part 8. The three-way cock 12, fitted to a seat, *g*, is provided with an arm connected to an adjusting-rod, 13, and is adapted to direct the water either up the discharge-pipe through the tube 7 or through the pipe 10 to the underground connections. This forcing-chamber is made very light of a single casting, but as it is connected to the pump by a small tube is liable sway from side to side, and is difficult to align accurately. Unless it be accurately aligned, the piston-rod will bind and cause undue friction and wear of the parts, producing leakage. In order to obtain this accuracy of alignment and support the forcing-chamber, I provide rods *f f*, attached to the chamber in any convenient manner and extending up to the platform, through which they pass, and through holes in the flange of the pump-barrel, they diverging, as shown in Fig. 1. I have shown in that figure only two; but three or more must be used, preferably four. They are held to the platform B by nuts 15 16, above and below the platform, by means of which they may be lengthened or shortened to adjust the forcing-chamber until the pump-rod works with perfect freedom. This may be done by ordinary workmen and very conveniently. It will be observed that these rods at the same time serve to align and support the forcing-chamber, and also to connect the pump-barrel to the platform.

I am aware that forcing-chambers have heretofore been suspended in the well, as in the patent of Wollf and Conner, of August 5, 1873; and I do not claim broadly supporting such a forcing-chamber, but limit myself to the arrangement of rods for aligning and sustaining the special construction, which by its peculiarity of construction and connections requires such alignment.

Having thus described my invention, what I claim is—

The forcing-chamber B, having the tubular parts connecting to the discharge-pipes, and the part 8 in line with the piston-rod, in combination with the said discharge-pipes, the pipe extending into the well with the piston-rod, and with the aligning and sustaining rods *f f*, connected to the platform, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK G. CORNELL.

Witnesses:

E. A. DICK,

WALTER DONALDSON.