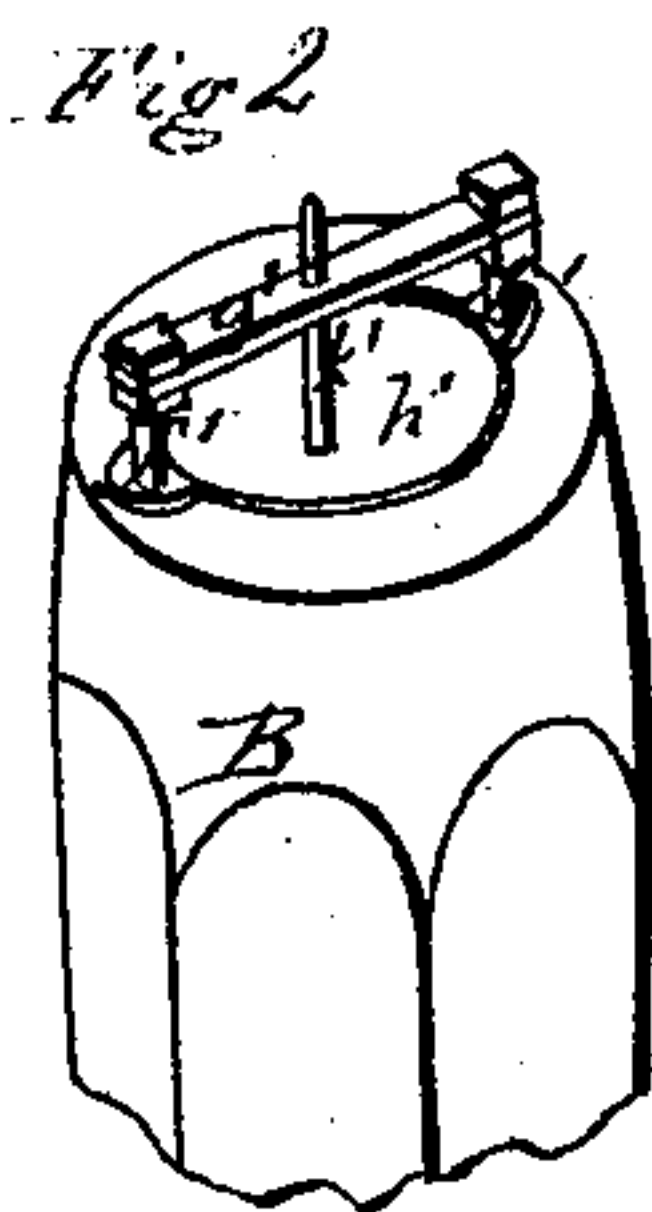
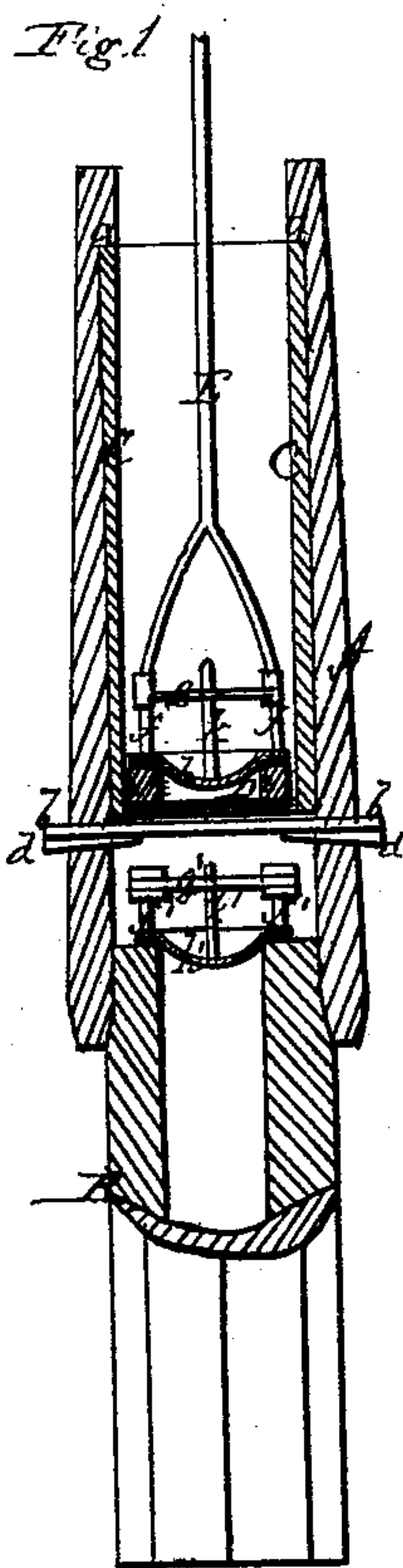


*T. De Witt,*

*Lift Pump.*

*No. 102511.*

*Patented May 3. 1870.*



*Witnesses.*

*Harry King.*

*C. L. Every*

*Inventor*

*Thos. De Witt*

*per*

*Alexander Mason*

*Attys*

# United States Patent Office.

THOMAS DE WITT, OF DETROIT, MICHIGAN, ASSIGNOR TO JOHN T. MAXSON, OF DE WITT, IOWA.

Letters Patent No. 102,511, dated May 3, 1870.

## IMPROVEMENT IN PUMPS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, THOMAS DE WITT, of Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Pumps; and do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in the construction of perpendicularly-operating valves in a pump and pump-plunger; and also in the manner of securing a glass lining for the plunger to operate in.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings which form a part of this specification, and in which—

Figure 1 is a longitudinal vertical section of my pump, and

Figure 2 is a perspective view of the lower section of the pump, on which the lower valve is placed.

A represents the upper section of the pump in which the plunger works, and

B represents the lower section, in which the lower valve is placed.

The upper section A is provided with glass lining C, which is secured in the following manner: The lining is inserted from the lower end of the section A, and moved upward until it bears against a shoulder, *a*, formed for that purpose on the inside of the section. Under the lower end of the lining C, through the section A, is passed a bar, *b*, which is secured by means of wedge-keys *d d*, as shown in fig. 1.

The plunger D is formed of a wooden ring, *e*, of suitable dimensions, having packing *i* around it and a metal ring, *m*, on its under side. This plunger is attached to two rods, *f f*, which extend upward perpendicularly for a suitable distance, and then unite, forming the plunger-rod E. The two perpendicular rods, *f f*, are connected by means of a bar, *g*.

The valve *h* of the plunger D is in the shape of a round cup or dish, the rim of which rests upon the ring *e*, while the bowl of the same fits within said ring. This valve is provided with ears, through which the rods *f f* pass; and it has, also, in its center a rod, *k*, which passes up through the bar *g*. The valve *h*, it will be seen, thus works perpendicularly, being guided by the rods *f f* and *k*.

The valve in the lower section B is constructed and operates in precisely the same manner, *h'* being the valve, *k'* the central rod, *f' f'* the side rods, and *g'* the cross-bar.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The glass lining C, secured by means of the shoulder *a*, bar *b*, and wedge-keys *d d*, substantially as herein set forth.

2. The combination of the sections A B, glass lining C, with bar *b* and keys *d d*, plunger D, and vertically-operating valves *h h'*, all substantially as herein set forth.

THOMAS DE WITT.

Witnesses:

PETER GEUNTER,  
NICHOLAS TISLER.