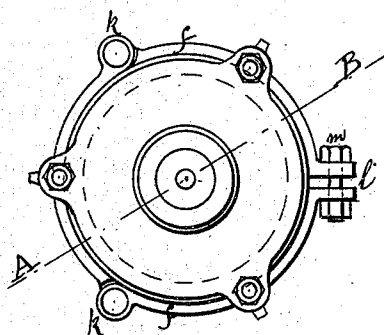
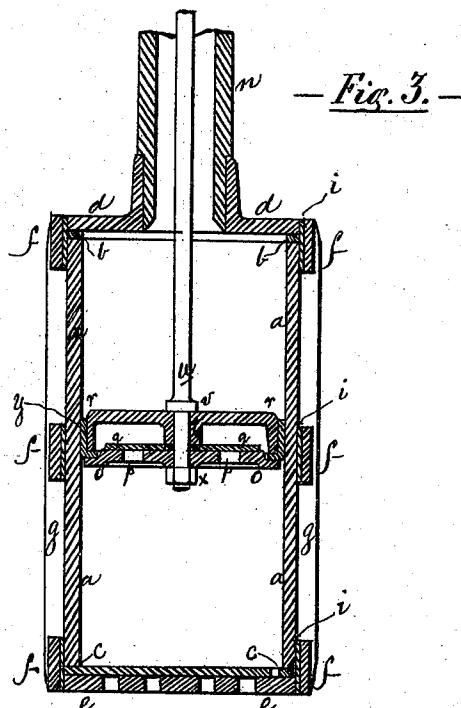
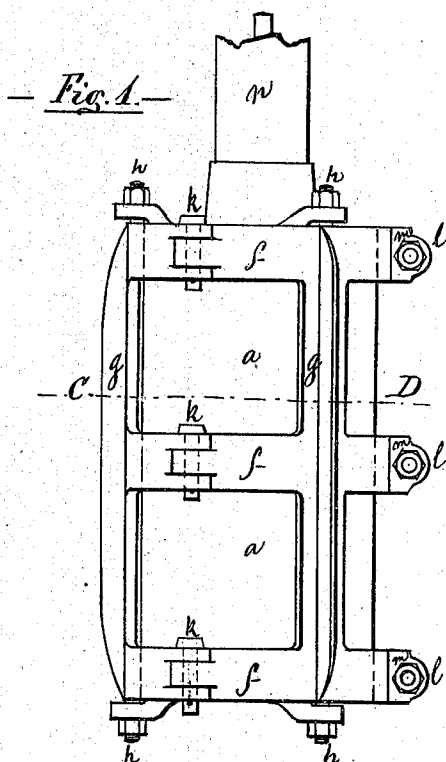


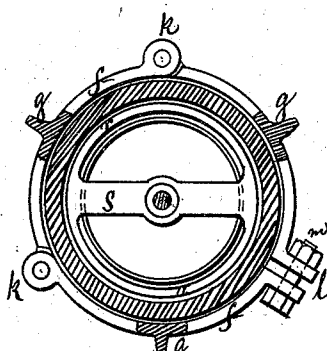
I. Tillingham,
Pamr.

No. 112,561.

Patented Mar. 14, 1871.



— *Fig. 2.* —



— *Fig. 4.* —

— *Witnesses:* —

And Vogt

Mauritz Amaren

— *Inventor:* —

Isaac Tillingham

by his attorney Albert Andrien

United States Patent Office.

ISAAC DILLINGHAM, OF ROCKBOTTOM, MASSACHUSETTS.

Letters Patent No. 112,561, dated March 14, 1871.

IMPROVEMENT IN PUMPS.

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

I, ISAAC DILLINGHAM, of Rockbottom, in the county of Middlesex and State of Massachusetts, have invented certain Improvements on "Submerged Glass Pumps," of which the following is a specification.

Nature and Objects of the Invention.

The nature of my invention relates to improvements on glass pumps, constructed in such a manner so as to prevent the breaking of the glass cylinder, which often will occur where the water is to be lifted to a considerable height; also, to an improved mode of connecting the heads of the cylinder to said cylinder in a strong and durable manner, for which purpose I construct my pumps as follows:

On the drawing—

Figure 1 is a side view;

Figure 2 is a ground plan;

Figure 3 is a longitudinal section over the line A B on fig. 2; and

Figure 4 is a cross-section over the line C D, taken on fig. 1.

Similar letters refer to similar parts wherever they occur on the drawing.

a a a is a glass cylinder, forming the barrel for the pump in question.

The glass cylinder is provided with an elastic packing-ring, *b*, in the upper end, whereupon rests the head *d*, as shown.

In the lower end is also an elastic packing, *c*, between the end of the glass cylinder and the lower perforated head *e*.

The packing *c* is cut out as a round disk, and answers also for a stop-valve for the lower end in a usual way.

Around the glass cylinder *a* I secure a number of rings, *f f f*, as shown, made in segments, and each segment cast in one piece, with an upright rod, *g g g*, provided in their upper and lower ends, with bolts, *h h h*, that project through ears, attached to the heads *d* and *e*, provided with nuts, whereby the two heads may be held securely onto the upper and lower end of the glass barrel *a*.

The rings *f f f* are provided with elastic packing-rings *i i i*, so as to prevent any damage to the glass cylinder from the contact of said rings *f f f*.

Each segment *f f f* is connected to the other by means of hinges *k k*, whereby the segments may easily be connected together or taken apart, as may be required.

The rings *f f f* are each open at one place, *l l l*, and provided with bolts, *m m m*, going through holes in the ears *l l l*, whereby the rings *f f f* may be drawn tightly around the glass barrel, so as to prevent the breaking heretofore alluded to.

To the upper head is attached a conducting-pipe, *n*, in a usual way.

In the glass cylinder *a* is a piston, movable. This piston consists of a disk, *o*, perforated with holds *p p p*.

On the upper side of the perforated disk *o* is a disk-valve, *q*, made of rubber or suitable material.

Above the valve *q* is a ring, *r*, with a cross-bar, *s*, and a hub, *t*, through which the piston-rod *u* projects.

Said piston-rod *u* is provided with a collar, *v*, and a nut, *x*, between which the different parts of the piston are securely held.

The piston is also provided with an angular packing, *y*, as shown.

The object of the hub *t* and cross-piece *s* is to obtain an even opening of the disk-valve *q* all round, and to effect an unobstructed flow of the water when pumping.

Having thus described the nature, construction, and operation of my invention,

I wish to secure by Letters Patent and claim—

The described glass pump-cylinder *a*, having the segmental rings *f* provided with packings *i*, the hinges *k*, and the vertical connections *g*, as and for the purpose herein set forth and described.

ISAAC DILLINGHAM.

Witnesses :

ALBAN ANDRÉN,
MAURITZ ANDRÉN.