

P u m p .

No. 201,734.

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Fig. 2.

Fig. 3.

WITNESSES

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IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **201,734**, dated March 26, 1878; application filed January 31, 1878.

To all whom it may concern:

Be it known that I, ROSCOE BEAN, of Hudson, in the county of Lenawee, and in the State of Michigan, have invented certain new and useful Improvements in Pumps; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a pump and its several parts, the peculiarities of which will be hereinafter more fully set forth.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, making part of this specification, Figure 1 represents a longitudinal section; Fig. 2, a detached part, in section; and Fig. 3, a section of the buckets with pump-rod attached.

A represents, in the figures, the body of the pump, which has formed in it two cylinders of unequal diameters. B represents the lower and larger cylinder, while C is the small or upper one.

E and F are the two buckets which play in these cylinders, and which are connected to the rods D and D'. The upper bucket, F, is in two parts. The face-nuts *m* and *n* form the two parts, and the packing *p* is placed and clamped between them.

It will be noticed that the lower bucket, E, is secured on the lower end of the rod D, and the part *n* of the upper bucket is screwed on the upper end of the same rod D. The leather cup or washer *p* is then placed over said part *n*.

The part *m* of the upper bucket is screwed on the lower end of the rod D' up to a suitable point thereon. By now uniting the two parts *m* and *n*, by screwing the end of the rod D' into the part *m*, the leather cup or washer becomes clamped between the two parts *m* and *n*, and a firm and rigid connection is made. As the packing wears, it can be expanded by simply turning one of the rods so as to bring the two parts *m* and *n* closer together, it being understood that a threaded recess is made from the top in the part *n* of

the upper bucket to allow the lower end of the rod D' to enter.

When the packing is worn out and has to be renewed, the rod D is unscrewed from part *n*, and said rod D, with the lower plunger E and the lower part *n* of the upper plunger, removed together through the lower end of the cylinder, the air-chamber G being unscrewed and the entire pump being raised for that purpose, the old leather taken off, a new one put on, and the parts reunited again, all without removing the cap of the cylinder, or in any way disturbing any joint or connection in the pump.

The lower bucket E is composed of a packing clamped between two plates, *i* and *d*, which screw up and down upon the rod D. The leather *o* is held in place by the jam-nut *l*.

By this construction of buckets and rods they may easily be taken from the pump to be refitted and repaired.

The pump-body is provided upon one side with an air pipe or chamber, G, and upon the other with a water-discharge pipe, H. Both of these connect with the body at a point between the lower and upper cylinders, as represented.

I represents the pump-curbing, which is connected to the cylinder by means of a tube or hollow rod, L, said tube being firmly connected to each, for the purpose of supporting and steadying the pump. The pump-rod passes down through this tube L. The water-discharge pipe H also passes into and through the curb. This pipe is secured to the curb by means of a set-screw, K, and thus unites with the tube L in keeping pump steady below.

In the side of the upper cylinder, near its upper end, is a hole, *a*, for a water-escape for water above the bucket. In the side of the cylinder, just by the hole *a*, is a vertical groove, which allows water upon the bucket and below the hole to escape around the bucket and pass to the cylinder below. This is to prevent freezing.

P represents a cap for the upper cylinder, forming its head and screwing over it. The tube L screws into this cap or head.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The tube L, connected to the curbing I and screwed into the cap P at its lower end, said cap being screwed to the top of the cylinder C, and said cylinder being connected by screw-threads to the lower ends of the pipes H G, the said parts being combined substantially as and for the purposes herein set forth.

2. In a pump, a divided plunger-rod, D D', each having one part of a divided plunger, F, secured on it, with packing *p* inserted between the two, and the parts screwed together, substantially as and for the purposes herein set forth.

3. The combination of the divided plunger-

rod D D', the plunger E on the lower end of the rod D, the upper plunger F, made in two parts, *m n*, secured, respectively, on the adjacent ends of the two rods, and the packing *p* clamped between the parts *m n* by uniting the two parts of the rod, as described.

In testimony that I claim the foregoing I have hereunto set my hand this 22d day of January, 1878.

ROSCOE BEAN.

Witnesses:

JAMES B. THORN,
JOHN BEAN.