

(No Model.)

S. H. BAKEWELL.
Pump.

No. 237,801.

Patented Feb. 15, 1881.

Fig. 1.

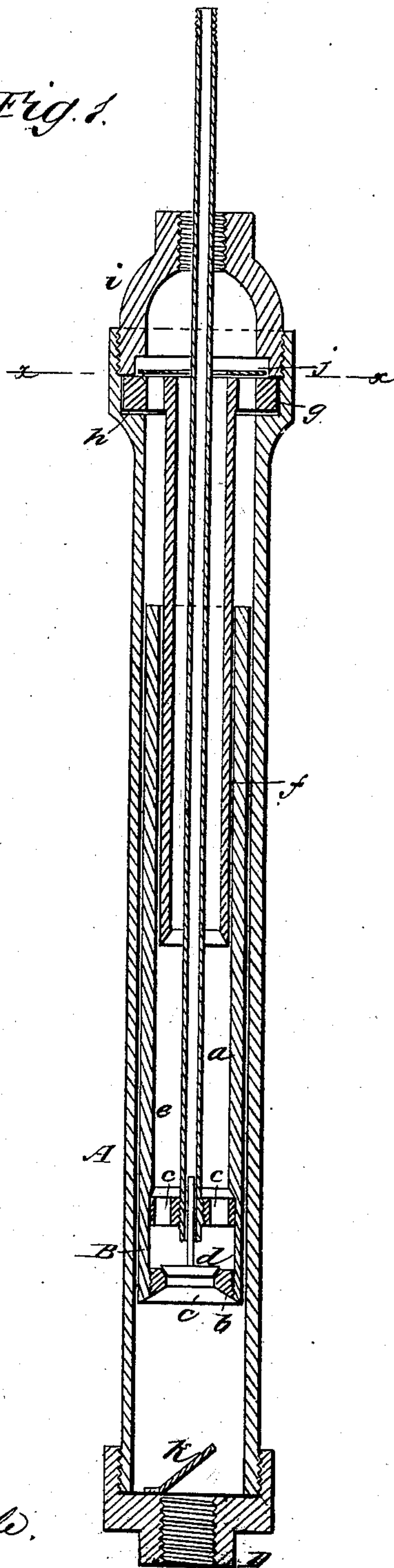


Fig. 2.

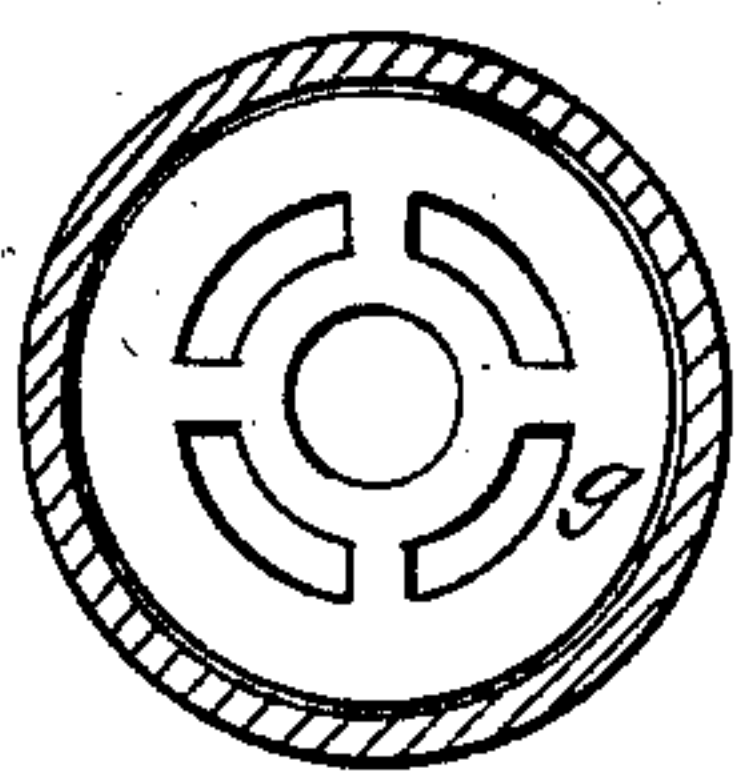
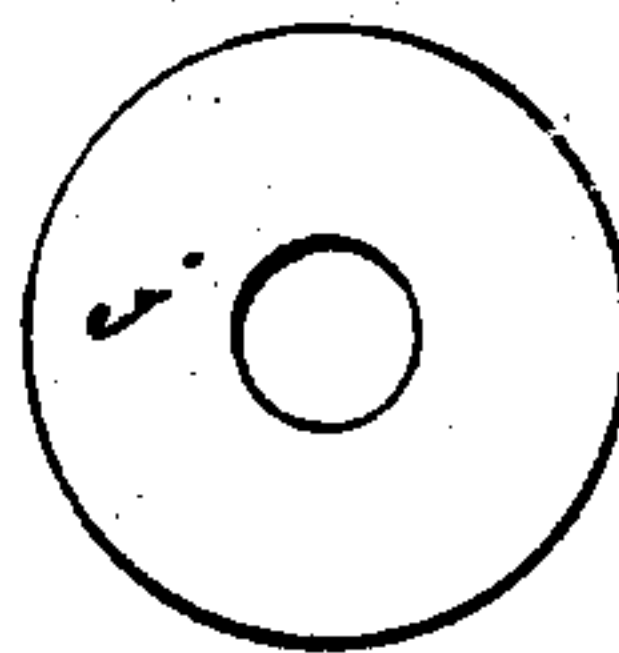


Fig. 3.



WITNESSES:

Francis McAnale,
C. Sedgwick

INVENTOR:

S. H. Bakewell

BY

Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

SAMUEL H. BAKEWELL, OF LANSING, IOWA.

PUMP.

SPECIFICATION forming part of Letters Patent No. 237,801, dated February 15, 1881.

Application filed June 15, 1880. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL H. BAKEWELL, of Lansing, in the county of Allamakee and State of Iowa, have invented new and useful
5 Improvements in Pumps, of which the following is a specification.

Pumps in general use are so constructed that the pressure of the water above the piston is the same as the weight of a column of
10 water having a base equal in area to that of a cross-section of the piston, and having a height equal to the distance from the piston to the escape-spout. In such cases the water is only thrown out as the piston ascends. To
15 reduce the comparative pressure of the water on the piston, and consequently the power required to work the pump and to throw water both as the piston ascends and descends, is the object of my improvements.

20 Figure 1 is a longitudinal vertical section of a pump involving my invention. Fig. 2 is a cross-section on line *x x*. Fig. 3 is a face view of the valve.

Similar letters of reference indicate corresponding parts.

In the form of pump shown the piston B has a caliber the area of which in cross-section is intended to be one-half that of the pump-cylinder A. The piston has an operating-rod,
30 *a*, a head, *b*, having perforations *c* to admit the water, a valve, *d*, and a tube, *e*, projecting upward to slide around a suspended tube, *f*, supported by flange *g*, clamped on a shoulder, *h*, on the pump-cylinder by screw-cap *i*. The
35 flange has valves *j* for the egress of water that may get between the pump-cylinder and the suspended tube and piston. To the cap is screwed a pipe leading to an escape-spout. On the lower end of the pump-cylinder is screwed
40 a suction-pipe, D, having a valve, *k*. The piston-tube is fitted nicely around the suspended tube and in the pump-cylinder.

The operation of the pump exhausts the air from the pump-cylinder below the piston, and in ordinary wells, not over about thirty feet
45 below the pump-cylinder, the pressure of the atmosphere forces the water up into the vacuum as the piston rises. As the piston descends the water in the pump-cylinder below it all passes through the piston-valve into the
50 piston-tube, the suspended tube, and the pump-pipe. The water is forced upward in proportion to the relative capacity of the two tubes and the pump-cylinder below the piston at its highest point. Consequently the water is
55 forced upward and out at the escape-spout at the downward plunge, as well as at the upward-lifting movement of the piston.

The parts can all be of metal, and no packing of soft material, as leather, be used.

The power required for the upward movement of the piston is diminished in proportion to the comparative size in internal cross-section of the pump-cylinder and the piston, within reasonable limits, in consequence of the
65 effect on the power required in the down-plunge of the piston.

The details of construction may be varied within the scope of my invention to adapt it to ordinary wells, driven wells, or otherwise,
70 also to cisterns and wells of various depths.

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

The combination of pump-cylinder A, having shoulder *h*, piston B, having rod *a*, head
75 *b*, perforations *c*, valve *d*, and tube *e*, suspended tube *f*, having flange *g* and valves *j*, suction-pipe D, having valve *k*, and cap *i*, substantially as described.

SAMUEL HUNT BAKEWELL.

Witnesses:

DICK HAVEY,
L. E. FELLOWS.