(No Model.)

A. L. LOWERY & J. N. WYANT.

WELL BORING APPARATUS.

No. 400,466. Patented Apr. 2, 1889.

Fig. 1.

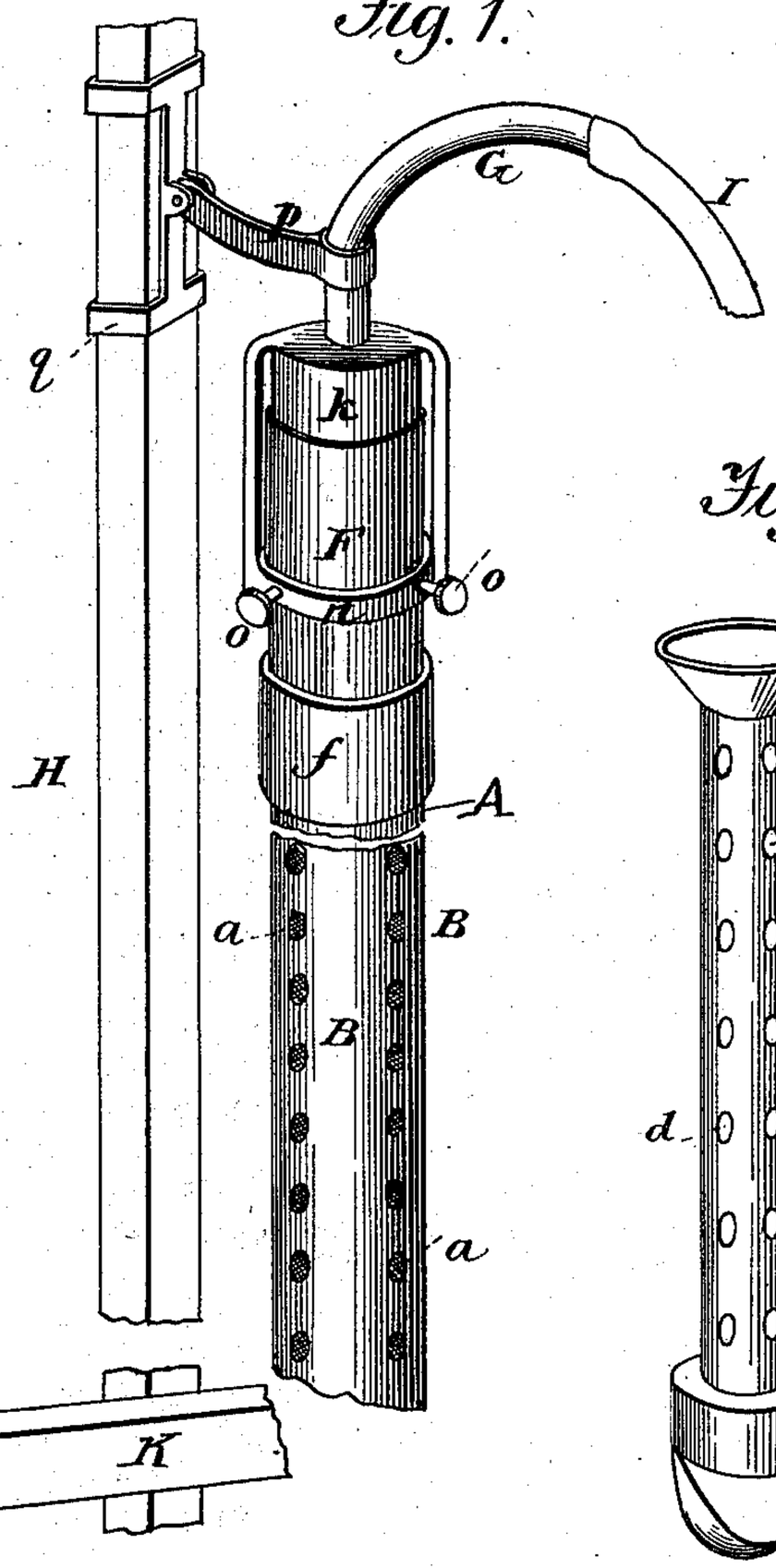

Fig. 3.

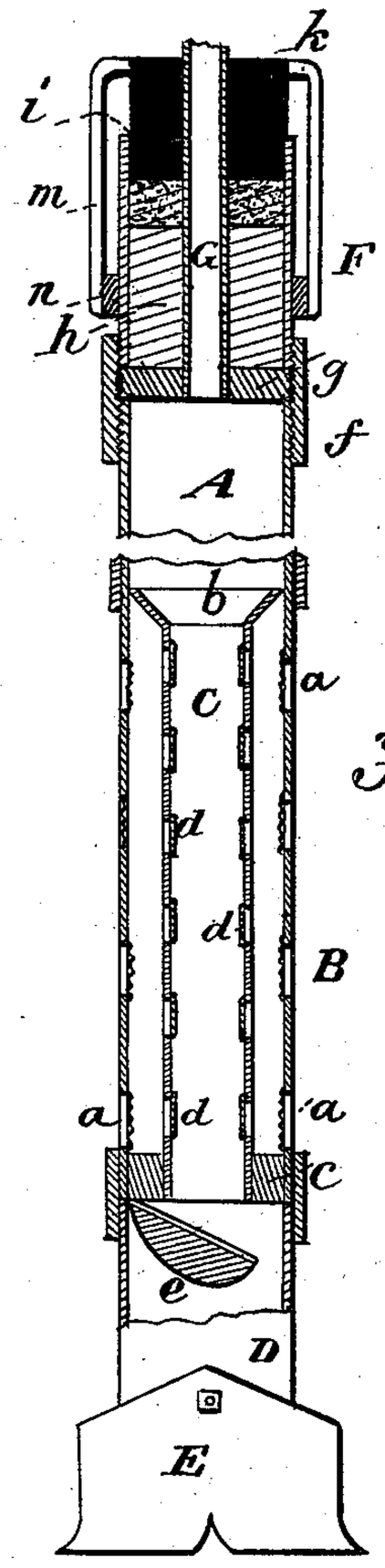

Fig. 2

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ABRAHAM L. LOWERY AND JASPER N. WYANT, OF FRANCIS, NEBRASKA.

WELL-BORING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 400,466, dated April 2, 1889.

Application filed June 27, 1888. Serial No. 278,364. (No model.)

To all whom it may concern:

Be it known that we, ABRAHAM L. LOWERY and JASPER N. WYANT, citizens of the United States, residing at Francis, in the county of Wheeler and State of Nebraska, have invented certain new and useful Improvements in Well-Boring Apparatus; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to apparatus for sinking wells; and it consists in certain improvements in such apparatus, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 represents the apparatus in position for operation. Fig. 2 is a sectional elevation of the casing-pipe and other details. Fig. 3 is a detached view of an inner pipe.

A designates the main casing-pipe, to the lower end of which is secured a perforated or open-work extension, B, being of the same diameter as pipe A and provided with openings which are covered with wire-gauze, as seen at *a*.

Within the pipe B is placed a pipe, C, which has a funnel form, *b*, at its upper end, which fits in pipe A, and the lower end of which is provided with a band, *c*, which fits in the pipe B, as shown. The said pipe C is perforated, and the perforations are provided with valves *d*, which are hung within the pipe and are so constructed that they are kept closed by water passing down through the pipe, and no water escapes through the apertures in its downward passage. Thus all water which is pumped into the main pipe A passes directly through the inner pipe, C, to the boring-tool. To the lower end of pipe B is fastened a short pipe, D, to which is secured a boring-bit, E. The inner pipe, C, is provided at its lower end with a valve, *e*, which is made of light material that will float, so that when the pipe reaches water the valve will be closed and no sand or dirt can rise in the pipe; but the valve will be opened by water descending through the pipe.

To the upper end of the main pipe A is secured a short pipe, F, of the same diameter as pipe A, by a screw-coupling, *f*. Within the pipe F is formed a swivel-connection with a small induction-pipe, G, inserted therein in the following manner: A band or disk, *g*, is fastened to the lower end of pipe G and fits in the coupling *f*. Above the band *g* is placed a filling of Babbitt metal, *h*, surrounding the pipe G. On said filling is placed a suitable packing, *i*, and on said packing and at the top of pipe F is placed a cap, *k*, the pipe G extending through a central aperture in the cap and having its upper end bent over, as shown.

The cap *k* is provided with arms *m*, which extend down outside of pipe F, the lower ends of said arms being connected with a band, *n*, on said pipe. The cap may be fixed in position and adjusted in elevation by means of the set-screws *o*.

An arm, *p*, extends from pipe G, being made fast thereto, the opposite end of the arm being connected by a hinge-coupling with a slide, *q*, which is placed on a vertical guide, H, and moves thereon as the pipe-casing sinks or is raised. The apparatus being raised in proper position, as seen in Fig. 1, with the vertical guide-piece H mounted on a horizontal bar, K, and pipe G connected by hose I with a pump, water is pumped into the main casing-pipe A and driven down through the pipe C to the boring-tool, whence it rises outside of the main pipe to the surface of the ground. The main pipe meantime being rotated by means of a tongs or other implement constructed for the purpose, the boring operation goes on, and the earth loosened by the bit E is carried up and out by the rising water. As the water comes to the surface it may be conducted to a tank or reservoir, to be again pumped to the main-pipe casing.

We claim—

1. The combination, with the main casing-pipe having an open-work extension and provided with a boring-tool, of an inner perforated pipe, C, provided with valves *d*, and a valve at its discharge end, which is adapted to be closed by contact with water in a well, substantially as set forth and described.

2. The combination, with the main casing-pipe, of the induction-pipe G, provided with an arm, *p*, and a swivel-connection with the main pipe, and a fixed vertical guide, which is provided with a slide which is connected

with arm *p*, substantially as set forth and described.

3. The combination, with pipe A, having pipe F coupled thereto, of the pipe G, provided with band *g*, Babbitt-metal filling *h*, packing *i*, and perforated cap *k*, provided with arms *m*, connected with band *n*, substantially as set forth and described.

4. The combination of the main pipe with pipe G, which is provided with band *g*, suitable filling and packing around pipe G above said band, and a perforated cap, through which pipe G extends, said cap being adjustable in elevation, substantially as and for the purposes described.

In testimony whereof we have affixed our signatures in presence of two witnesses.

ABRAHAM L. LOWERY.
JASPER N. WYANT.

Witnesses:
C. H. STOWELL,
WM. NORTON.