C. Batcheller,

Well Tubing.

No. 51,508, Patented Dec. 12, 1865

Fig: 1.

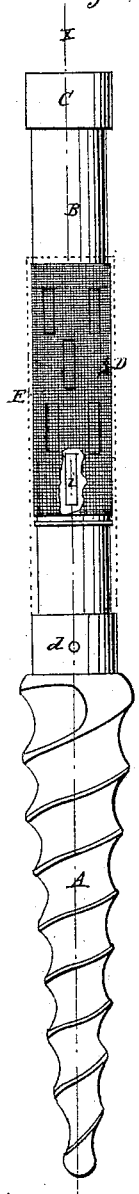


Fig: 4.

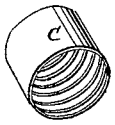


Fig: 3.

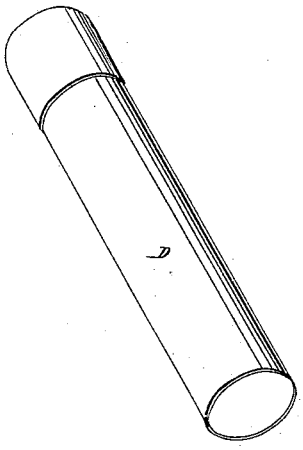


Fig: 5.

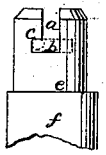
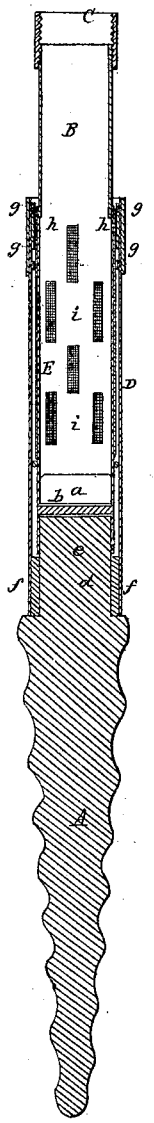


Fig: 2.



Witnesses

Isaac Stratton
Charles N. Hills

Inventor:

Charles Batcheller

UNITED STATES PATENT OFFICE.

CHARLES BATCHELLER, OF KEENE, N. H., ASSIGNOR TO HIMSELF, EDWIN PARKS, OF WINCHENDON, AND JOHN R. SHERMAN, OF ADAMS, MASS.

IMPROVED APPARATUS FOR BORING WELLS.

Specification forming part of Letters Patent No. **51,508**, dated December 12, 1865.

To all whom it may concern:

Be it known that I, CHARLES BATCHELLER, of Keene, in the county of Cheshire and State of New Hampshire, have invented certain new and useful Improvements in Apparatus for Boring Wells, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an elevation of the lower portion of a pump tube with my improvements applied thereto, the shell or outer casing being represented in red. Fig. 2 is a vertical section on the line *x x* of Fig. 1. Fig. 3 is a view of the shell or outer casing detached. Fig. 4 is a view of a coupling by which the joints of the pump-tube are united; Fig. 5, detail to be referred to.

The construction of pumps for bored wells and the methods of boring wells as heretofore practiced are objectionable for the following reasons: Where the well was sunk by boring a hole with a drill surrounded by a shell or casing which was forced down as the boring proceeded, and on the removal of the drill was left as a curb for the well and for the reception of a smaller or suction pipe, considerable difficulty was experienced in forcing down the outer shell or casing, owing to its being larger than the hole bored by the drill, and the hole was frequently obstructed, to avoid which the shell was made so thin as to weaken the pipe, and it would not then bear forcing down or drawing up. Wells have also been bored by first using a drill of a little larger diameter than the pump-tube, and on the withdrawal of the drill the pump-tube was pressed down into the hole prepared for it. The perforations in the bottom of the tube (to allow the water to flow in), were, however, constantly being obstructed with earth or gravel, and the pump would not raise the water; and where strainers were placed around the lower or perforated portion of the pipe they were also, in certain soils, frequently obstructed.

The object of my invention is to overcome the above-mentioned difficulties; and it consists in providing the lower extremity of the well-tube with a screw or auger, its upper end being of greater diameter than the tube, and having a shell or casing attached thereto, which, when the hole is being bored, incloses the lower or slotted portion of the tube with the strainer surrounding it, and when the proper depth is attained admits of the tube and strainer being drawn up within it to allow the water to enter the pump-tube through the strainer.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A is a screw or auger, the upper end of which is provided with an open slot, *a*, for the reception of a pin, *b*, which extends diametrically across the lower end of the well-tube B for the purpose of causing the auger A to revolve in common with the tube B when power is applied thereto. This tube B is composed of a series of joints, which are united by the screw-couplings C. A notch or shoulder, *c*, Fig. 5, is formed in each extremity of the slot *a* to allow of the pin *b* being turned under it to admit of the withdrawal of the auger A, when it encounters any obstructions which it is impossible to penetrate.

D is an outer shell or casing, which is securely fastened by a pin, *d*, to the head *e* of the screw A, the joint between them being snugly closed by a leather or other suitable packing, *f*. The diameter of the outer shell or casing, D, is a little greater than that of the well-tube B, which it incloses, and the inside of the upper end of the casing D is provided with circular flanges *g*, between which is placed a suitable packing, *h*, which, when the casing D is in place and the well is being bored, fits snugly around the upper portion of the strainer E, which covers the slotted portion *i* of the tube B, and thereby protects the strainer E from being obstructed or injured by the earth or gravel through which it passes, the strainer E and the slotted portion *i* of the tube being drawn out of the casing D by unlocking the pin *b* from the notch or shoulder *c* and lifting on the tube B when it is desired to ascertain if water has been reached.

Operation: The lower end of one of the joints of the well-tube being fitted to the upper end of the screw A, the pin *b* passes into the slot *a*, and the outer shell or casing, D,

is then slipped over the lower joint of the tube to its place on the packing $f^{\times}$, and securely fastened by the pin d to the head e of the screw A, the circular flange at the top of the casing fitting snugly around the top of the strainer E, so as to prevent it from being choked. The point of the screw A is pressed into the ground and the operator turns the tube B until only the upper portion of the tube remains above the surface, when another joint is united thereto by means of a coupling, C. This operation is repeated until it is desired to ascertain if water has been reached, when the tube B is turned back slightly, so as to unlock the pin b from the notch c, when the tube B may be lifted so as to withdraw its slotted portion i and strainer E from the casing D, and a common suction-pump is then attached to the upper joint. If a sufficient supply of water has not been reached or the quality of the water be objectionable, the tube is again pressed down into place, so as to be protected by the casing D, and the pin b being brought under the notch c, the operation of boring is continued by again turning the tube B, as before described.

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

The auger A, in combination with a slotted well-tube, B, strainer E, and outer casing, D, substantially as described.

CHARLES BATCHELLER.

Witnesses:
ISAAC STRATTON,
CHARLES N. HILLS.