N. R. CHEADLE.

Stone-Extracting Tools.

No. 163,636. Patented May 25, 1875.

Fig. 1

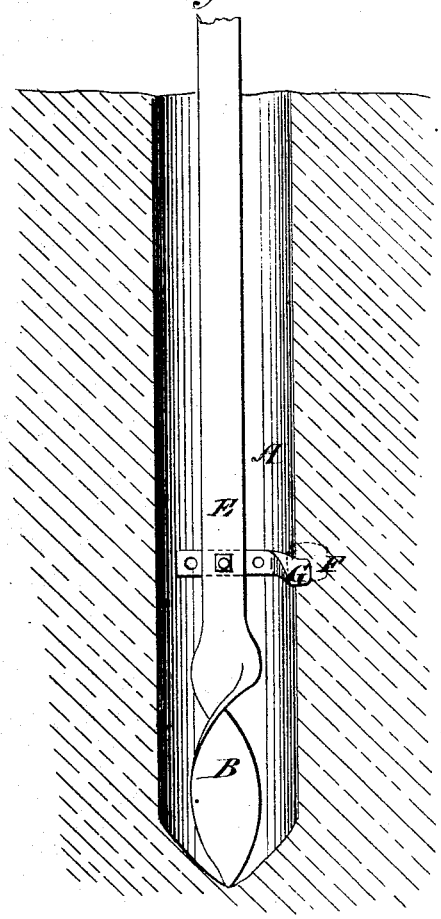


Fig. 2

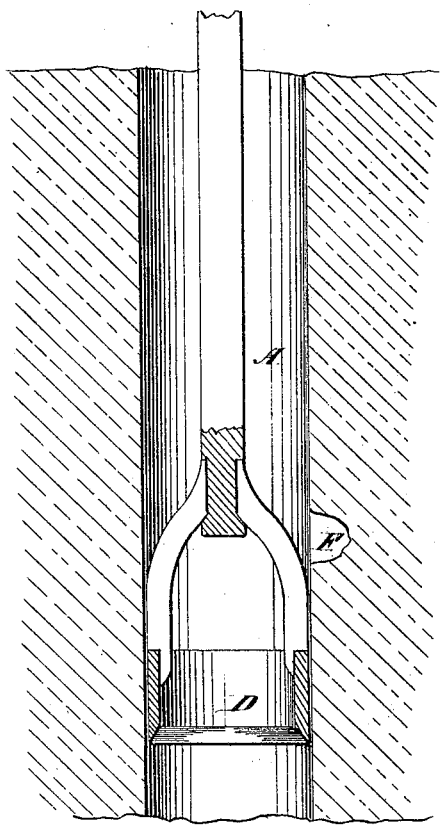
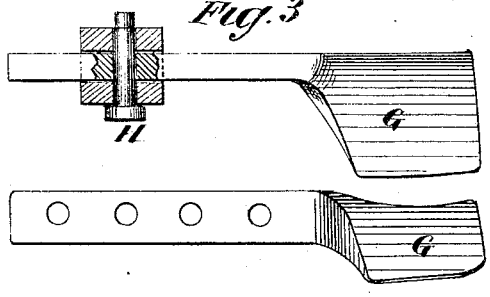


Fig. 3



WITNESSES:

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NATHAN R. CHEADLE, OF DELTA, OHIO.

IMPROVEMENT IN STONE-EXTRACTING TOOLS.

Specification forming part of Letters Patent No. **163,636**, dated May 25, 1875; application filed February 20, 1875.

To all whom it may concern:

Be it known that I, NATHAN R. CHEADLE, of Delta, in the county of Fulton and State of Ohio, have invented Novel Means for the Removal of Stones in Well-Boring, of which the following is a specification:

Figures 1 and 2 are sectional elevations, and Fig. 3 detail views.

The invention will first be fully described in connection with the drawing, and then pointed out in the claims.

A represents a well, which has been to a greater or less extent bored with a common well-auger that has passed around a side stone, F, and come in conflict with another at the bottom. In the latter case the auger is withdrawn, and there is substituted a bit, B, which is of much less diameter than the auger, and is twisted, as well as tapered, to a median point at the end. This construction enables the bit to get a hold upon and unloosen the stone, so that it will afterward readily pass up the groove of the auger. Next, in order to get rid of the stone F when it is not embedded too deeply in the side of well, I employ a reamer, G, which is fastened radially and adjustably to a rod, E, which may be the shank of bit. The rod or shank E is turned obliquely until it can be applied directly under the stone, when it assumes a perpendicular attitude, and is rotated to remove the earth under the stone, the reamer being adjusted radially until the requisite depth into the soil has been cut. I then use a drop, D, corresponding in circumference with the auger that has been used, and provided with a suitable shank or handle. The impact of this drop will dislodge the stone, and allow it to drop to the bottom. If, however, the stone is too deeply embedded for removal, I simply use the drop to break it off even with the inside wall of the well.

These means for removing stones involve but little cost, are easily applied, and entirely effectual.

Having thus described my invention, what I claim as new is—

1. The method of removing stone in well-boring by first cutting under them, and then dislodging them with a drop, as set forth.

2. The bit B, twisted and tapering to a median point, as and for the purpose specified.

3. A stone-drop, D, applied in well-boring to break or dislodge stones, in the manner described.

NATHAN R. CHEADLE.

Witnesses:
ROBERT HATTON,
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