

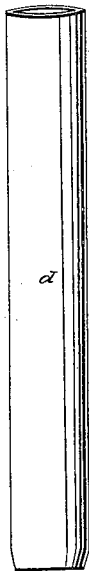
*S.B. Castle,*

*Well Tubing,*

*No 51,801.*

*Patented Jan. 2, 1866.*

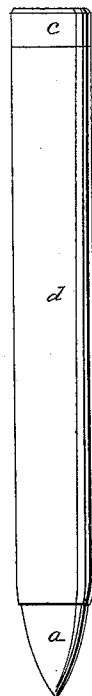
*Fig: 1*



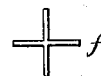
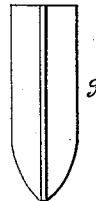
*Fig: 2*



*Fig: 3*



*Fig: 4*



Witnesses:

*R. H. Duell*  
*Edw. A. Lins*

Inventor:

*Simon Castle*

# UNITED STATES PATENT OFFICE.

SIMEON B. CASTLE, OF CORTLANDVILLE, NEW YORK.

## IMPROVED MODE OF OPERATING BORED WELLS.

Specification forming part of Letters Patent No. 51,801, dated January 2, 1866.

*To all whom it may concern:*

Be it known that I, SIMEON B. CASTLE, of Cortlandville, in the county of Cortland, in the State of New York, have invented a new and improved method of putting down and operating bored wells and driving gas-pipe; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, like letters representing like parts.

Figure 1 is a section of pipe or tubing beveled at the bottom. Fig. 2 is the drive-point and connecting-rod, with the drive-head used in driving. Fig. 3 is a perspective view of the drive-point, connecting-rod, and drive-head, with a section of pipe or tubing united as used in driving gas-pipe or in driving for wells. Fig. 4 is a stone-check, of which *f* is the plan and *g* the elevation.

The drive-point is represented by *a*, the connecting-rod by *b*, and the drive-head by *c*, while *d* represents the section of pipe beveled at the bottom.

The drive-point fills the pipe so tightly that in putting down a well or driving gas-pipe for any purpose no obstruction, such as stone, sand, &c., can enter the said pipe, the said point extending through and beyond the said pipe two or three inches, or any desired distance found convenient or necessary, as shown in Fig. 3, so that a hole is forced by the point for the said pipe, thereby preventing the strain usually attending such tubing or pipe when driven according to other methods of forcing pipe into the ground. The drive-head is screwed onto the connecting-rod at the top, and rests on or is collared to the said pipe at the top in such a manner that when driven the said pipe is forced down with the said rod and point, and consequently meets with very little resistance in comparison with the resistance attending pipes driven according to all methods heretofore known.

In putting down wells or driving gas-pipe, sections of pipe and rod may be added as often as found necessary and coupled or fastened together in the usual manner of coupling or fastening together pipe and rod used for the purposes above specified, the drive-head being taken off and fastened to each new section of

rod as it is added. The said pipe is beveled at the bottom, so as to pass easily with the said drive-point when driving a well for water or oil, as the case may be. The said point extends through the said pipe so far that when water is reached all that is necessary to have a good and substantial well is to withdraw the said drive-point with connecting-rod, insert the said check into the pipe, which I force into the ground at the bottom of the well, and fasten to the pipe or tubing at the top a suitable pump, a large cavity being easily made at the bottom by pumping out the dirt and sand, which will readily pass out with the water through the valve of the pump. The said stone-check, which I insert into the said pipe, I drive into the ground a sufficient distance so as to cause it to remain firm, while the upper end remains in the pipe. This serves to check any obstruction, such as stone, &c., from entering the said pipe which will not pass with the water freely through the valve of the pump used in connection with the pipe, and at the same time giving free circulation to the water, thereby keeping the pipe constantly clear. A further advantage gained in putting down wells after my method is that, in driving for water or oil, as the case may be, when I strike a rock I can withdraw my drive-point (the pipe up to this time having been kept clear) and drill after the usual manner of drilling through rock.

The advantage of obtaining water from the bottom of the pipe instead of through perforations and slots in the pipe (while the bottom of the pipe is closed by means of a plug) is very clear, as in my method the pipe is kept constantly free from dirt, &c., which would otherwise lodge in said pipe, and, besides, in putting down wells according to my method not so much pipe is used as is used in putting down wells according to the other said methods, while a further expense of perforating or slotting is saved. Spiral slots may be cut in the said pipe used after my method, when desired, near the bottom or from the bottom of said pipe, not, however, above the drive-point used in driving.

The pipe or tubing put down after my method may be drawn up a few inches after having been put down, if desired, to give a

larger cavity at the bottom of the well; but without this a cavity at the bottom of the well will be formed, after having pumped out the dirt and sand, sufficiently large to receive the water running in from all directions, so that one could never pump dry a well put down after my manner of putting down wells.

The advantage of putting down wells after my method over those put down after the manner of boring in the usual way is very clear. In my method the whole thing is accomplished by one simple process, which materially differs from those of all other methods, while in my method the pipe is kept constantly clear.

With the said apparatus used for driving wells I can drive gas-pipe under pavements and

sidewalks and through brick walls, &c., thereby doing away with the necessity of taking up the said pavements, sidewalks, &c., in laying gas-pipe.

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

The combination of the drive-point *a* and the drive-head *b* with the connecting-rod *c*, the stone-check *f*, as shown at Fig. 4, and the beveled pipe *d*, as and for the purposes set forth in the said or above specification.

Dated Cortlandville, November 6, 1865.

SIMEON B. CASTLE.

Witnesses:

R. H. DUELL,

ETHAN A. IVES.