

George V. Sheffield's Submarine Excavator.

Fig. 1.

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PATENTED JUL 11 1871

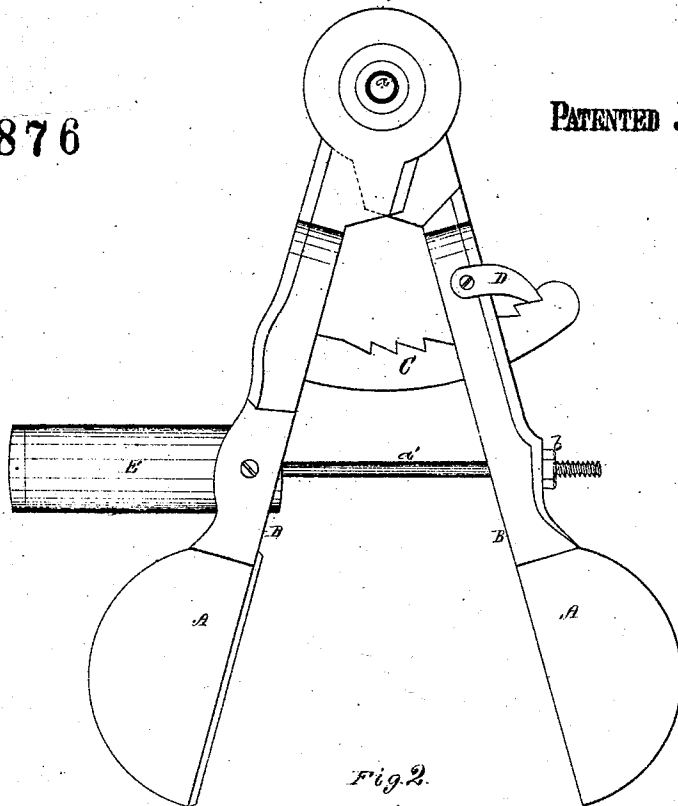
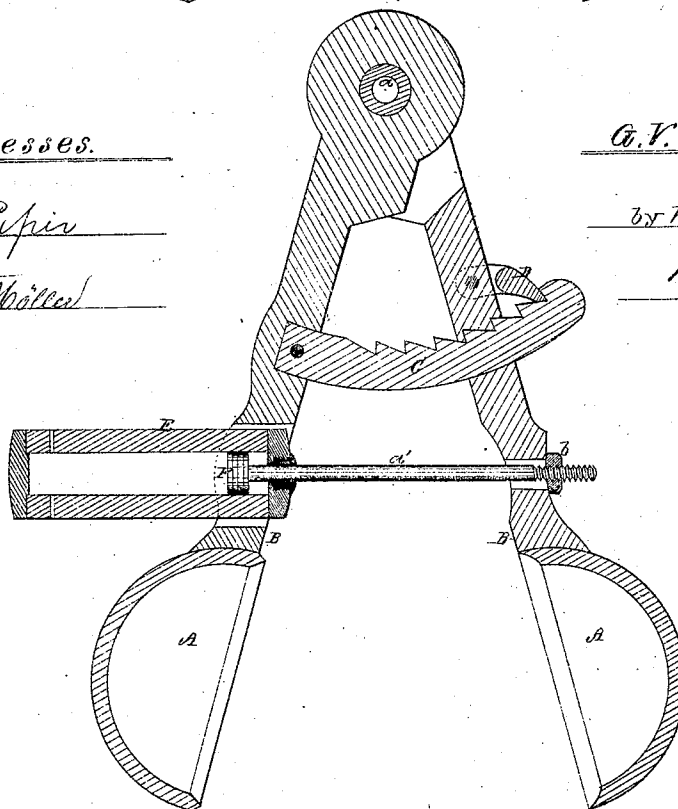


Fig. 2.



Witnesses.

S. N. Phipps

L. N. Moore

G. V. Sheffield.

by his attorney.

H. W. Ledy

UNITED STATES PATENT OFFICE.

GEORGE V. SHEFFIELD, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF
AND LYMAN A. COOK, OF WOONSOCKET, RHODE ISLAND.

IMPROVEMENT IN SUBMARINE EXCAVATORS.

Specification forming part of Letters Patent No. 116,876, dated July 11, 1871.

To all whom it may concern:

Be it known that I, GEORGE V. SHEFFIELD, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Submarine Excavator; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a side elevation, and Fig. 2 a vertical section of it.

It is composed in part of two hollow hemispheres, claws, or scoops, A A, fixed to the ends of a pair of arms, B B, which, at their other ends, are jointed together like the legs of a pair of draughtman's dividers, a hole, *a*, being made centrally through the joint. From one of the arms a curved rack, C, is extended to and through a slot in the other arm, as shown, there being a retaining-pawl, D, pivoted to the said arm to engage with the teeth of the rack. Furthermore, there is pivoted to the other arm, and extended through it, a cylinder, E, provided with a piston, F, whose rod *a'* extends through the other arm, a nut, *b*, being screwed on the rod, as shown. There may be one or more openings made laterally in the cylinder, to allow of the escape of the smoke and gas produced by the explosion of a charge of powder when placed between the piston-head and the inner head of the cylinder. It is intended for the jaws or scoops to be closed

together by the force of the explosion of a charge when exploded within the cylinder, and for the purpose of effecting the said explosion of such charge there may be a rod suitably applied to the cylinder to extend down between the scoops in such manner as, when the scoops are extended apart, and the machine is lowered to the bottom of a river, or the sea, or a lake, the wire may, by contact with the said bottom, be moved against a percussion or explosive priming so as to explode such, and thereby fire the main charge in the cylinder.

The machine is intended for making submarine excavations, whether for scientific or useful purposes. The jaws or scoops, being forcibly closed together by the explosion of the charge in the cylinder, will scoop up the earth, and will be held together by the pawl and rack while the machine may be in the act of being drawn up to and above the surface of the water.

I claim—

The machine substantially as described—that is, as composed of the scoops A A, the arms B B, the rack C, the pawl D, the piston F, and cylinder E, combined and arranged in manner and so as to operate as and for the purpose specified.

GEORGE V. SHEFFIELD.

Witnesses:

R. H. EDDY,
J. R. SNOW.