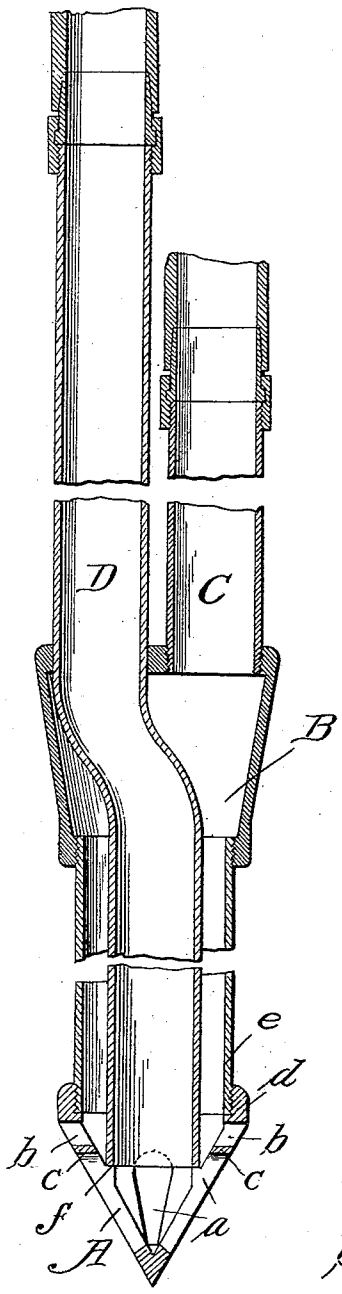
No. 623,335. Patented Apr. 18, 1899.

R. H. PINKHAM.

TESTING DEVICE.

(Application filed Dec. 17, 1898.)

(No Model.)




Attest
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# UNITED STATES PATENT OFFICE.

RALPH HOWARD PINKHAM, OF WAKEFIELD, MASSACHUSETTS.

## TESTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 623,335, dated April 18, 1899.

Application filed December 17, 1898. Serial No. 699,547. (No model.)

*To all whom it may concern:*

Be it known that I, RALPH HOWARD PINKHAM, a citizen of the United States, residing at Wakefield, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Testing Devices, of which the following is a specification.

My invention is a hydraulic ground-testing device, and comprises a tube or pipe having a shoe upon its lower end of conical shape adapted to be driven into the ground, with means for supplying a stream of water to outlets in the shoe, the shoe being supplied with inlet-openings and an inner discharge-pipe adapted to permit the upward flow of the water, with the sediment stirred up or loosened by the downward current, so that the ground may be tested for various purposes.

My invention consists particularly of an improved shoe of novel construction, and, secondly, of an improved head for receiving the supply of water for the downward current, all as hereinafter more particularly described.

In the drawing the figure shows a central vertical section through the apparatus.

The shoe shown at A is of conical shape, terminating in a point, and this is provided with elongated openings tapering downwardly, as shown at *a*, these openings allowing for the upward flow of the water. The shoe is provided with a series of openings near its upper end, as at *b*, laterally-extending webs *c* separating the upper and lower sets of openings, intended to strengthen the construction of the shoe and prevent it from collapsing under the pressure exerted in driving it into the earth. The shoe has an internal thread cut on an annular extension *d*, and into this is screwed a pipe or tube *e*. The upper end of this pipe *e* is connected to a head B, which is of box or cylindrical form and is provided with two openings in its top, one to receive the supply-pipe C for the downward current, and through the other passes the pipe D for the upward current, this pipe curving in the head and passing downwardly within the pipe *b*. The lower end of pipe D rests upon ledges *f* within the shoe. The pipes C and D may be connected, the one with a suitable source of water and the other with a suitable delivery-receptacle. Usually the pipe D is connected with a suction-pump.

It will be understood that this simple construction prevents any disarrangement of the parts and very effectually serves to test the lower strata for gold-bearing earth or for similar purposes at a minimum expense. Hot or cold water may be used, according to the requirement of the work.

What I claim is—

1. A testing device consisting of a shoe of conical shape having two sets of openings, one set being arranged above the other and independent pipes in connection with said openings, substantially as described.

2. In a testing-machine, a shoe of conical shape having a series of elongated openings in its lower part and a series of lateral openings in its upper part, and independent pipes in connection with said openings, substantially as described.

3. In a testing device, a shoe of conical shape having a series of openings in its lower part, a ledge formed in the interior, an exit-pipe supported by said ledge, a series of laterally-extending openings in the upper part of the shoe and a supply-pipe surrounding the exit-pipe and communicating with the lateral openings, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

RALPH HOWARD PINKHAM.

Witnesses:

C. H. WELCH,

F. LAZZARO.