

No. 656,994.

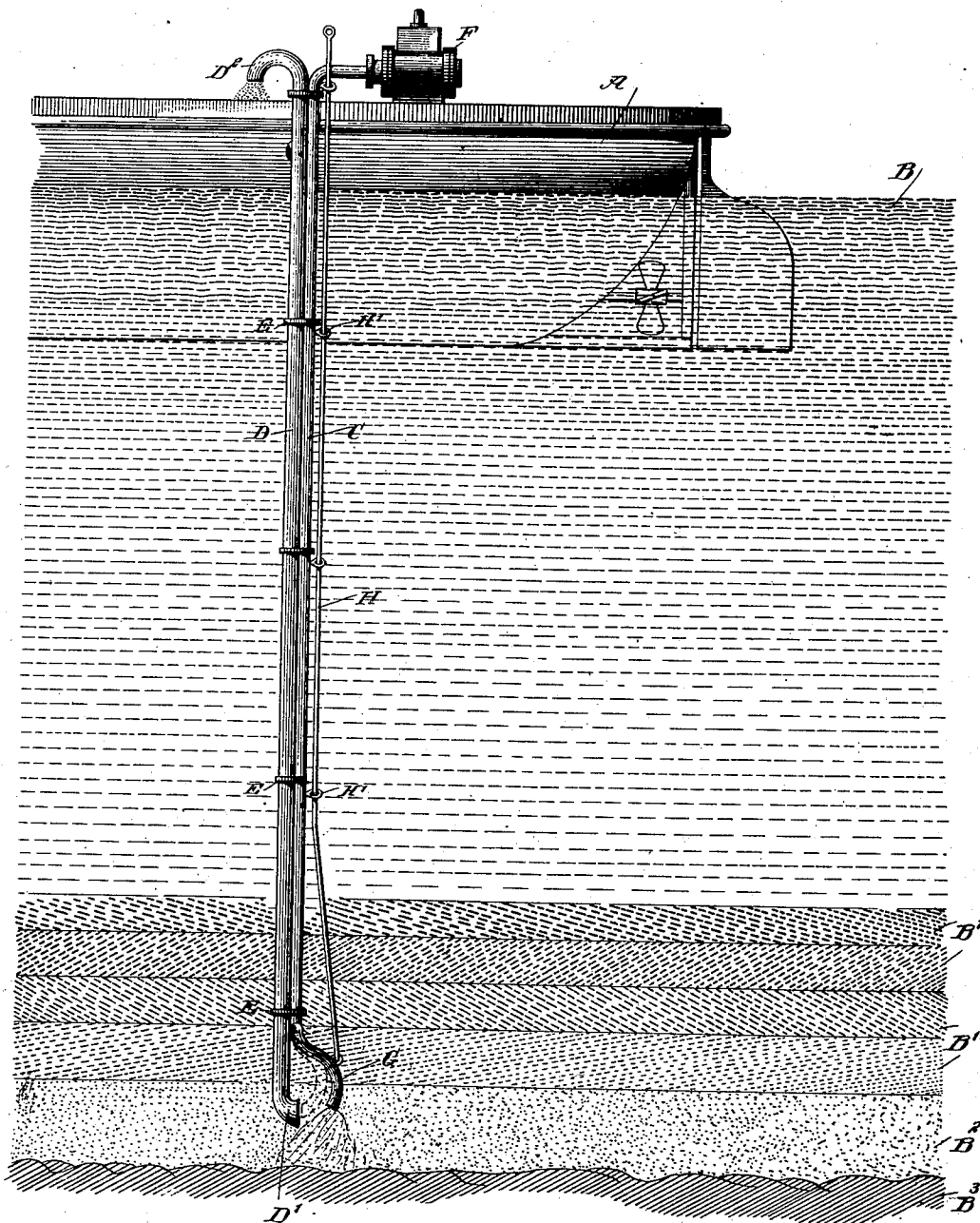
Patented Aug. 28, 1900.

H. F. MUNN.

APPARATUS FOR REMOVING MATERIAL FROM BELOW THE SURFACE.

(Application filed Apr. 21, 1900.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

HERBERT FRANCIS MUNN, OF NEW YORK, N. Y.

APPARATUS FOR REMOVING MATERIAL FROM BELOW THE SURFACE.

SPECIFICATION forming part of Letters Patent No. 656,994, dated August 28, 1900.

Application filed April 21, 1900. Serial No. 13,736. (No model.)

To all whom it may concern:

Be it known that I, HERBERT FRANCIS MUNN, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Apparatus for Removing Auriferous and other Material from Below the Surface, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved apparatus for removing gold-bearing sand and other material from below the surface, principally from the bed of a river, a beach, or other waterway, in a very simple, effective, and economical manner and without first requiring the removal of undesirable layers or strata of material above the material to be raised.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawing, forming a part of this specification, said drawing being a side elevation of the improvement as applied.

The apparatus illustrated in the drawing is located on a vessel A in a waterway B, having a number of strata B' of undesirable material and a lower stratum B², containing auriferous or other desirable material and located over the bed rock B³, as will be readily understood by reference to the drawing.

In order to remove the stratum B² without requiring the removal of the other strata B' above, I provide the apparatus presently to be described in detail and carried by the vessel A. This apparatus consists, essentially, of two pipes C and D, preferably fastened together by suitable clips E and extending from the vessel A down into the strata of material forming the bed of the waterway. The upper end of the pipe C is connected with a pump F, of any approved construction, for forcing a fluid—such as air, water, or steam—through the pipe C and into and through a nozzle G, pivoted on the lower end of the pipe C and extending with its mouth into the stratum B². A rod H, connected with the nozzle G, extends upward through suitable guides H' to the vessel A to enable the

operator to impart a swinging motion to the nozzle G, so as to bring the same into the desired position for loosening the material in the stratum B², as indicated in full lines in the drawing, or for moving the nozzle in such a position that it extends with its mouth close to the mouth D' of the other pipe D, which has its upper end D² formed into a discharge-spout for discharging the material into the vessel A or a receptacle contained therein. When the nozzle G is in the position shown in dotted lines in the drawing, then the fluid passing under pressure through said nozzle passes into the mouth D' and up the pipe D, thus sucking in the previously-loosened material, which thus moves with the fluid up through the pipe D to finally pass into the vessel A from the spout D². From the foregoing it is evident that the material in the stratum B² is loosened by the jet of fluid under pressure issuing through the nozzle G, and then the loosened material is forced by the ejector action of the nozzle and mouth D' up through the pipe D without requiring removal of the other strata B', located over the stratum B², containing the auriferous material.

By moving the vessel A along while the apparatus is at work, the stratum B² containing the valuable material can be completely removed, as above described, it being understood that the strata B', usually of sand or the like, permit a ready forward movement of the pipes C, D, and rod H, for the purpose mentioned.

Although I have shown the improvement applied to a waterway, I do not limit the application of the apparatus to this particular situation, as it is evident that it may be used on land for removing layers or strata in the manner described.

For waterways where there is a high tide a derrick may be used instead of the boat, the derrick carrying the pump and means for moving the pipes along. It is to be understood that the connection between the upper end of the pipe C and the pump F is preferably by a flexible hose, to allow free movement of the pipes.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. An apparatus for removing low or bed-

rock strata of material, comprising a pipe
connected at one end with a supply of fluid
under pressure, a nozzle at the lower end of
said pipe and movable relatively thereto, and
5 a discharge-pipe arranged for operation in
conjunction with said nozzle, to force the
loosened material through the discharge-pipe,
substantially as shown and described.

2. An apparatus for removing low or bed-
10 rock strata of material, comprising a pump,
a pipe connected therewith, for forcing a fluid
under pressure by the pump through the pipe
into the material to be loosened, a nozzle
pivoted on the lower end of the pipe and
15 under the control of the operator, and adapted

to discharge the fluid under pressure into the
material to be treated, to loosen the same,
and a discharge-pipe having an entrance-
mouth extending into the material, said noz-
zle being arranged to operate in conjunction 20
with said mouth, to force the loosened mate-
rial up through the discharge-pipe, as set
forth.

In testimony whereof I have signed my
name to this specification in the presence of 25
two subscribing witnesses.

HERBERT FRANCIS MUNN.

Witnesses:

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N. ROSENBAUM.