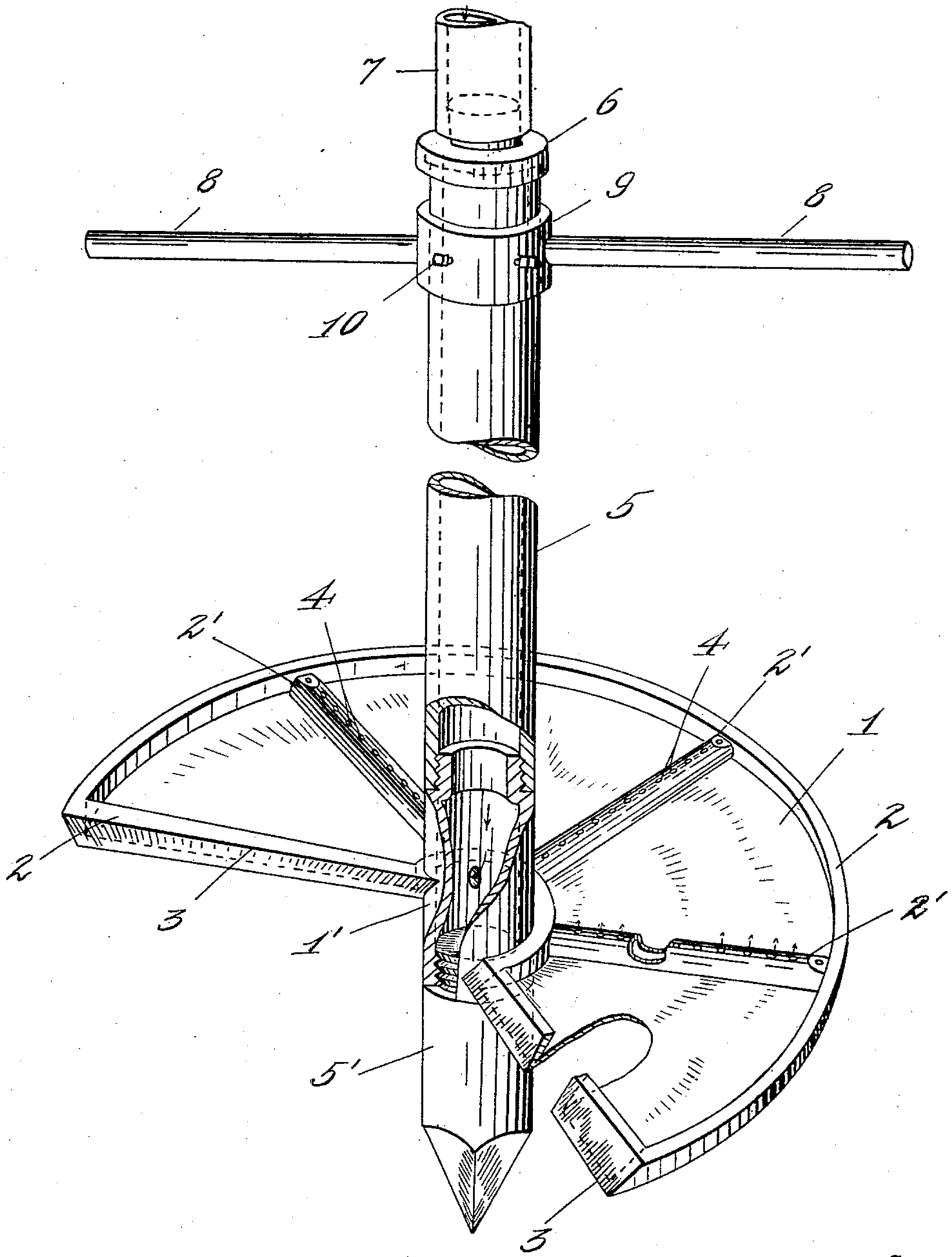
No. 863,700. PATENTED AUG. 20, 1907.

O. T. CROSBY.

APPARATUS FOR RECOVERING VALUES FROM ALLUVIAL DEPOSITS.

APPLICATION FILED JULY 5, 1906.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR RECOVERING VALUES FROM ALLUVIAL DEPOSITS.

No. 863,700. Specification of Letters Patent. Patented Aug. 20, 1907.

Application filed July 5, 1906. Serial No. 324,870.

To all whom it may concern:

Be it known that I, OLE T. CROSBY, a citizen of the United States of America, and a resident of the city of Nome, District of Alaska, have invented certain new and useful Improvements in Apparatus for Recovering Values from Alluvial Deposits, of which the following is a specification.

The object of my invention is to provide a simple and efficient apparatus particularly adapted for the carrying out of the method of working alluvial deposits or like beds of material containing free metal, as gold, for the purpose of recovering such values, set forth in my application Serial No. 324,869, filed July 5, 1906.

With the above object in view the invention resides in the construction, combination and arrangement of parts as set forth in this specification and defined in the appended claims.

In the accompanying drawing, wherein similar numerals designate corresponding parts throughout, I have shown by a single perspective view one form of the invention capable of carrying the same into successful operation, portions of some of the parts being broken away.

With reference to the drawing, numeral 1 indicates suitable means capable of being moved into a bed of material to loosen the same and catch particles thereof. The said means, as shown, consists of a comparatively broad, thin blade of spiral form which is somewhat less in length than a complete convolution and provided with an upwardly projecting flange 2 extending along its peripheral portion and across each end. The said end portions of the flange are undercut so that their inner sides are inclined upwardly in a rearward direction and their outer sides are beveled to provide cutting edges, as 3, at the ends of the blade.

Extending across the upper face of blade 1 are tubular ribs or ridges as 2′ which are each provided with suitable discharge orifices 4. The said ribs or ridges and the flange 2 serve to retain particles of material collecting on the blade during its operation, as will be later understood.

In the construction shown the blade 1 is formed with a hub 1′ having screw threaded connections at its upper and lower ends respectively with a tubular stem 5 and a guide 5′, the latter of which is pointed at its lower extremity. The stem 5 has communication through hub 1′ with the passages in the ribs or ridges 2′ and carries at its upper end a suitable swivel coupling 6 by means of which it is connected with a conduit 7 leading from a suitable source of fluid supply, as an air compressor located at any convenient point. To conveniently operate the blade 1 handles as 8 are provided which are secured to a sleeve 9 slidably fitting upon stem 2 and being secured thereto by means of set screws 10.

In operation, stem 5 is connected with an air compressor, as heretofore intimated and blade 1 is forced downwardly and simultaneously rotated in the proper direction, by pressure applied to the handles 8, to cause it to enter the bed of materials to be operated. As the blade 1 is moved into the materials it takes a spiral course, and serves to loosen or disintegrate the same, while the fluid passing under pressure from the orifices 4 is confined between the blade and the materials thereabove and tends to keep the loose particles of lesser density from being caught and carried along with the blade while permitting those of greater density to gravitate to the blade where they are retained for movement therewith by the flange 2 and ribs or ridges 2′. After the blade has been inserted to the required depth it is operated in the reverse direction, thereby reworking the materials through which it passed on its downward journey.

The above described apparatus is especially useful in working ocean beaches where the tide and turbulent state of the water renders it impracticable to attempt to remove great quantities of material for subsequent treatment.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States of America, is:—

1. An apparatus of the nature indicated comprising a hollow stem in communication with a source of fluid supply, a blade secured to said stem and extending spirally, said blade being provided on its upper face with spaced ribs forming retaining means for particles of material collecting on said blade during its operation, means whereby fluid is directed for discharge above said blade, and means for rotating said stem.

2. An apparatus for working alluvial deposits or beds of a like nature comprising a stem, a blade secured to said stem and extending spirally, said blade being provided on its upper face with spaced ribs, means connected with said stem for rotating the same, and means whereby fluid is directed for discharge through the ribs of said blade.

3. An apparatus of the nature indicated comprising a stem, a blade secured to said stem and extending spirally, an upwardly projecting flange secured to the outer edge of said blade and extending across the ends thereof, spaced ribs on the upper face of said blade, and means whereby fluid is directed for discharge between the upper face of said blade and the material thereabove.

4. An apparatus of the nature indicated comprising a hollow hub, a blade secured to said stem and extending spirally, said blade having an end flange whose rear face is inclined upwardly in a rearward direction and an edge flange, radial ribs spaced apart on the upper face of said blade, a guide removably secured in the lower end of said hub, and a stem removably secured to the upper end of said hub.

Signed at Seattle, Washington this 23 day of June 1906.

OLE T. CROSBY.

Witnesses:
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