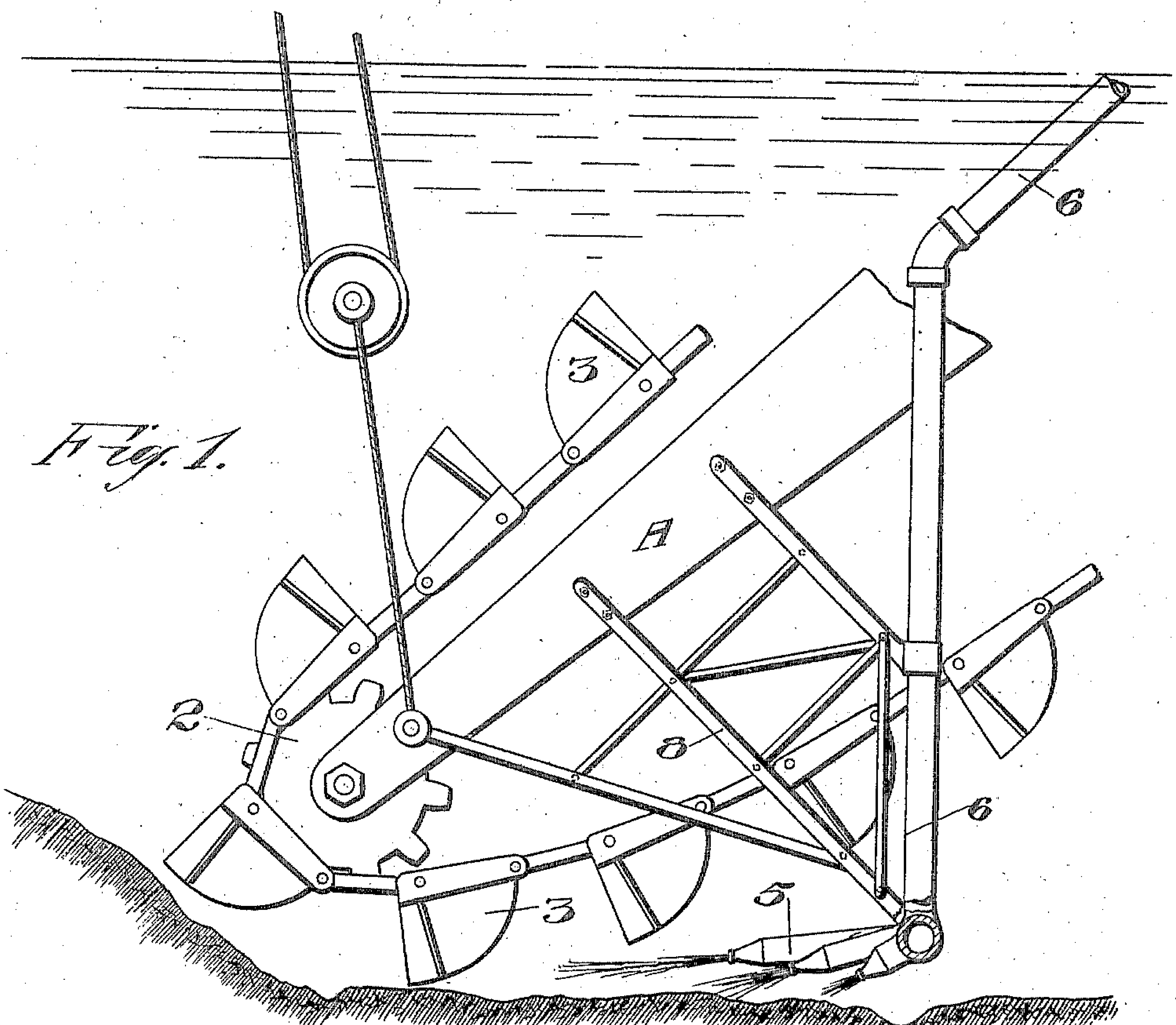
No. 816,958. PATENTED APR. 3, 1906.

P. BOUERY.

DREDGER AND BED ROCK CLEANER.

APPLICATION FILED AUG. 9, 1905.

Fig. 1.



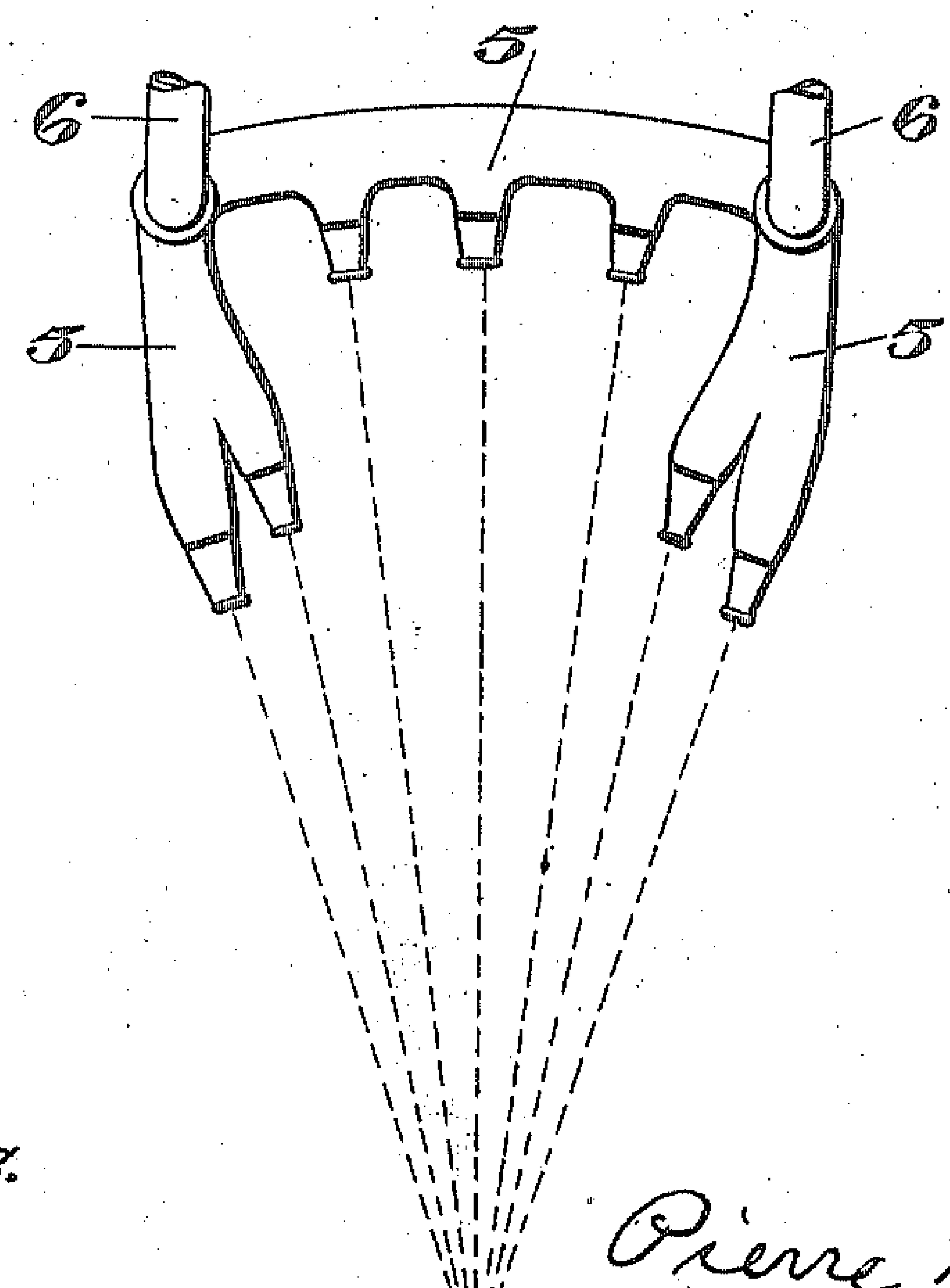


Fig. 2.

Witnesses.
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UNITED STATES PATENT OFFICE.

PIERRE BOUERY, OF WEAVERVILLE, CALIFORNIA.

DREDGER AND BED-ROCK CLEANER.

No. 816,958. Specification of Letters Patent. Patented April 3, 1906.

Application filed August 9, 1905. Serial No. 273,467.

To all whom it may concern:

Be it known that I, PIERRE BOUERY, a citizen of the United States, residing at Weaverville, in the county of Trinity and State of California, have invented new and useful Improvements in Dredgers and Bed-Rock Cleaners, of which the following is a specification.

My invention relates to an apparatus which is especially designed for cleaning up bed-rock and saving gold and valuable material which may be lodged in crevices and out of the reach of the dredge-buckets.

It consists in the combination of parts operating in conjunction with the dredge-buckets and in details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of the lower end of the dredger, showing the application of my apparatus. Fig. 2 is a plan view of the nozzle.

In dredging operations for the saving of gold-bearing material which is submerged it is customary to employ endless-chain bucket-dredgers, which are carried upon a suitable float and with a motor by which the chain of buckets is driven, so that being carried upon a ladder which is hinged to the float, the buckets are continually driven over the submerged bottom, taking up the sand and material and bringing it to the various apparatus upon the float where the precious metal is separated from the gangue. When the bed-rock is reached, the inequalities of the surface are such that the dredging-buckets will not take up everything from this bed-rock, and the gold being heavier than the sand it is most liable to deposit in the various depressions and crevices of the rock.

It is the object of my invention to supplement the work of the buckets and to provide a means for disengaging anything which has settled into these depressions and crevices and to raise it into the path of the moving buckets, so that it will be received and carried upward by them.

In the present case I have only shown so much of the apparatus as is necessary to explain my invention.

A is a ladder, having a drum at the lower end, as shown at 2, around which a chain of buckets 3 pass when they arrive at the lower end of their travel. The lower end of the ladder is suspended by chains and suitable tackle, so that it may be raised or depressed to suit the work being done.

It will be observed that where the buckets pass down upon the lower side of their travel to the bed-rock they arrive in a curved line, the position of the curve depending upon the angle at which the ladder stands. At this point behind the line of travel of the bucket and above the surface of the bed-rock over which they are moving I fix a series of nozzles 5. These nozzles are connected with a pipe 6, carried upon the ladder and extending upwardly to a source of supply, which may be located upon the dredge-boat. This source of supply may be a pump of any suitable character to pump either air or water under pressure through the pipe and discharge the fluid medium through the nozzle.

The nozzles are disposed, as shown in the drawings, something in the form of a crab's claw. The inner nozzles on the transverse portion of the device are of the smallest diameter and increase outwardly, the exterior ones inclosing and pointing inwardly and forwardly, as plainly shown in Fig. 2, and being of larger diameter, so that these upper nozzles must control the direction of the material and keep the particles of gold and sand so as to be properly received by the buckets.

A suitable joint is made in the conducting-pipe which supplies the nozzles, this joint being so placed as to move in unison with the hinged joint of the ladder. The pressure supplied to be discharged through the nozzles will depend upon the depth of the water and the character of the work being done, and it will in all cases be sufficient to thoroughly cleanse the crevices of material lodged therein, causing it to boil up and carry out the gold and sand, and this being delivered just forward where the edges of the buckets impinge upon the bottom will be collected by the buckets and will be carried up as a part of their load.

In order to properly support the nozzles, I have shown braces 8 of any suitable character, which connect the ladder-frame A with the supply-pipe 6 and in such a manner as to steady the pipe and the nozzles, and to prevent these nozzles from being thrown backward by reaction they are thus maintained in the angular space between the bed-rock and the bottom of the buckets and near

enough to the buckets to insure the delivery of the material that will be received by the buckets as they pass.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a bucket-dredge, of a jet apparatus whereby the gold and sand is ejected from the crevices of the bed-rock and delivered into the path of travel of the buckets.

2. An endless-chain bucket-dredge, means by which the buckets are caused to travel over the submerged bottom, jet-tubes disposed in the angle between the bottom and the path of travel of the buckets before reaching said bottom, and means for supplying a medium under pressure to be discharged through said jet-tubes and in the direction of travel of the buckets.

3. The combination with an endless-bucket dredge and the support thereof, of nozzles located in an angle between the bottom and the point at which the buckets reach the bottom and discharging against the bottom and in the direction of travel of the buckets, a pipe through which the fluid under pressure is discharged through said nozzles, and supporting-braces extending from the pipe and nozzles to the bucket-chain support.

4. A device for ejecting material from the cavities of a submerged bottom and into the path of travel of a chain of dredge-buckets, said device consisting of nozzles disposed in an arc substantially inclosing the path of travel of the buckets, said nozzles discharging forwardly and inwardly, and a pipe for supplying a fluid under pressure to said nozzle.

5. A device for ejecting gold and material from the cavities of submerged bed-rock, said device consisting of nozzles extending transversely across the path of travel of dredger-buckets and in the rear and behind the point where said buckets reach the bottom, other nozzles extended in front of the transverse nozzles and discharging inwardly to intersect the discharge of the first-named nozzles, and means for supplying fluid under pressure to said nozzles.

6. A device for ejecting material from the cavities of a submerged rock bottom, said device consisting of a pipe extending transversely and having arms or branches extending upon each side and inwardly from the transverse portion, nozzles made in the transverse portion increasing in diameter from the center outward of the device, other nozzles of increased diameter made in the side arms or branches, all of said nozzles convergent to a common point in advance of the device.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

PIERRE BOUERY.

Witnesses:
J. H. PORTER,
HENRY HUTCHINS.