(No Model.)

A. W. ROBINSON.

WATER JET FOR AMALGAMATING MACHINES.

No. 523,410. Patented July 24, 1894.

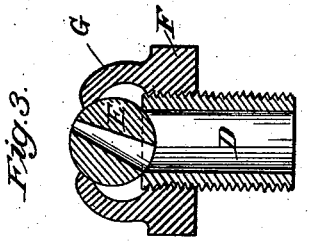

Fig. 3.

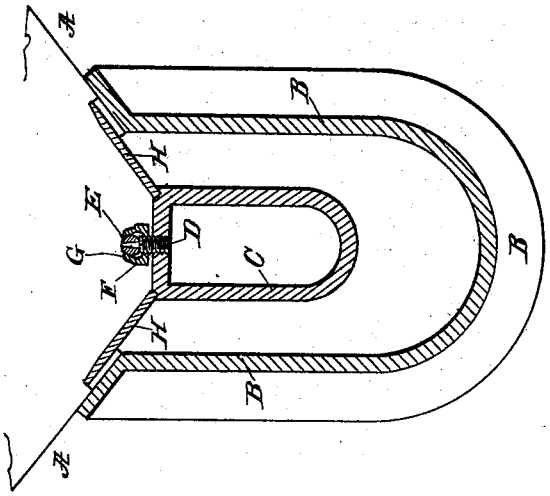

Fig. 1.

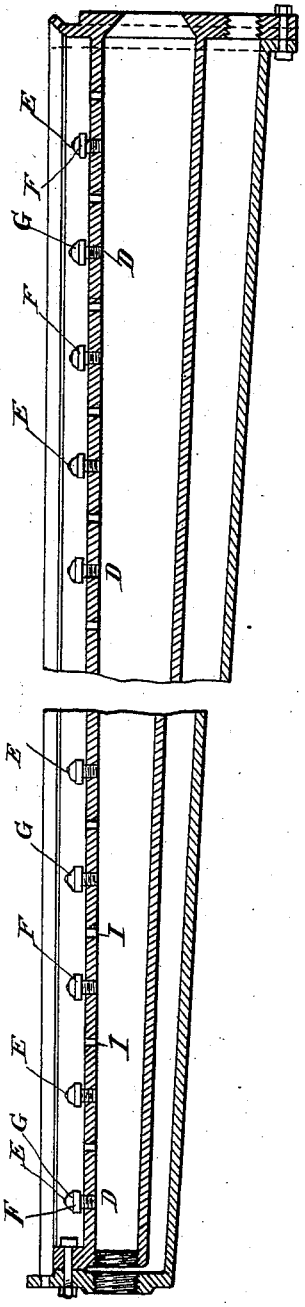

Fig. 2.

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ARTHUR W. ROBINSON, OF MILWAUKEE, WISCONSIN.

WATER-JET FOR AMALGAMATING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 523,410, dated July 24, 1894.

Application filed November 23, 1893. Serial No. 491,755. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR W. ROBINSON, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Water-Jets of Amalgamating-Machines, of which the following is a specification.

The object of my invention is to provide means whereby the direction of the jets of water in the bottom of the valley or valleys of the amalgamator may be altered and adjusted at pleasure, so that the fine sand or other gold bearing material may be thrown an indefinite number of times against the plates or steps of the amalgamator, and may also be moved by the action of the jets of water either toward the tailings end of the amalgamator, or may be caused to circulate around or partially around the amalgamator according to the adjustment of the water jets. Thus the duration of the retention of the sand or gold bearing material within the amalgamator and the degree of its agitation and consequent frequency of contact with the steps of the amalgamator may be exactly regulated to secure the best results, and the process of separating the gold from the refuse may be adjusted, so as to secure the greatest possible speed. Consequently the machine can be quickly and without expense, put in condition to operate most successfully and economically upon gold bearing materials of differing qualities and characteristics.

The invention generally stated comprises a tube or nipple set in the force water pipe of the machine, which projects somewhat above its upper surface. A small globe or spherically shaped piece of metal, which has a hole through it, rests on the upper end of the tube (it may have a seat on the tube if desired) and it is held in place by a threaded nut, which engages with the thread on the nipple and an inwardly projecting circumferential flange on the nut embraces the globe above its horizontal zone, so that when the nut is loosened, a piece of wire or similar utensil may be inserted in the hole in the globe, and it (the globe) thus easily and quickly turned and adjusted, so that it will direct the water which comes through it in the desired direction; the nut being then screwed down again will grasp the globe and hold it firmly in the desired position. Inasmuch as the globular adjustable jet pieces project slightly above the surface of the trough or force water pipe, a considerable quantity of sand will precipitate between them and remain practically undisturbed. In order to raise this sand, intermediate holes are drilled in the trough or force water pipe between the adjustable jet pieces. These holes are necessarily constant in their direction but there is sufficient control of the action of the machine secured, if half of the jet pieces are adjustable.

In the drawings hereof, Figure 1, illustrates a vertical sectional view of the trough or valley bottom of an amalgamator machine, showing the mercury deposit trough, the force water trough or pipe, the sand guard plates and the adjustable water jet pieces, which latter are the subject of this invention. Fig. 2, illustrates a longitudinal vertical section of the parts as shown in Fig. 1, reduced in size and partly broken away. Fig. 3, illustrates a detail of the adjustable water jet pieces.

A, A are lines which indicate the sides of the valley of the amalgamator.

B is the mercury deposit trough.

C is the force water pipe.

D are the nipples screwed into the pipe C.

E are the globular metallic jet pieces.

F are the nuts.

G are the flanges on the nuts which engage with the globular jet pieces and hold them in position when screwed down upon them.

H, H are the sand guard plates.

I are the holes in the pipe C intermediate the adjustable water jet pieces.

Special attention is called to the peculiar construction of the jet pieces and co-acting parts; *i. e.*, the nipples are truly cylindrical and threaded from end to end. This is the most simple and cheap form. Also the jet pieces F are not, or rather, need not be, of greater diameter than that of the nipples and they are provided with holes which preferably taper somewhat, but their larger end which is adjacent to the nipple is of considerably less diameter, than the hole through the nipple. Consequently it may describe a circle of such size as necessary and it will always fall within the circle of the bore of the nipple. Thus there will always be unob-

structed water supply for the jet pieces, and furthermore, the nuts which clamp the jet pieces to the nipple-like devices are exceedingly simple in construction, and very inexpensive. These advantages have never before been attained, as I attain them, so far as I know.

I have shown in the drawings a form of construction of the parts as they are made by me in actual manufacture, and it is a very good form; but I wish it to be understood that alterations may be made in the details of construction of the devices, particularly that the parts E need not be exact spheres, nor need they engage with a nipple, so called; a threaded boss on the pipe C may take the place of the nipples.

I claim—

1. The combination of a force water pipe, a hollow nipple-like device connecting with the interior of the pipe, a perforated substantially spherical jet piece having its seat upon the upper end of the nipple and provided with a hole, the diameter of which is less than the interior bore of the nipple, and a threaded nut which overlaps the jet piece, substantially as set forth.

2. The combination in an amalgamator of a force water pipe located in the valley of the amalgamator, and having a series of holes on its upper part, a series of hollow nipple-like devices connecting with the interior of the pipe, located between the holes therein and perforated jet pieces seated upon the upper ends of the nipples and having holes through them of less diameter than the bore of the nipples, and nuts which screw upon the nipples, and overlap the jet pieces, substantially as set forth.

3. The combination of a water pipe, hollow nipple-like devices connecting with the interior of the pipe, jet pieces adapted to rest and be seated upon the upper ends of the nipple-like devices and having a tapering hole through them, the larger end of which is of less diameter than that through the nipple-like devices, and a nut to clamp the jet pieces upon the end of the nipple-like devices, substantially as set forth.

Signed at Milwaukee, in the county of Milwaukee and State of Wisconsin, this 8th day of November, A. D. 1893.

ARTHUR W. ROBINSON.

Witnesses:

JOHN C. WILLIAMS,

J. G. DAVIES.