

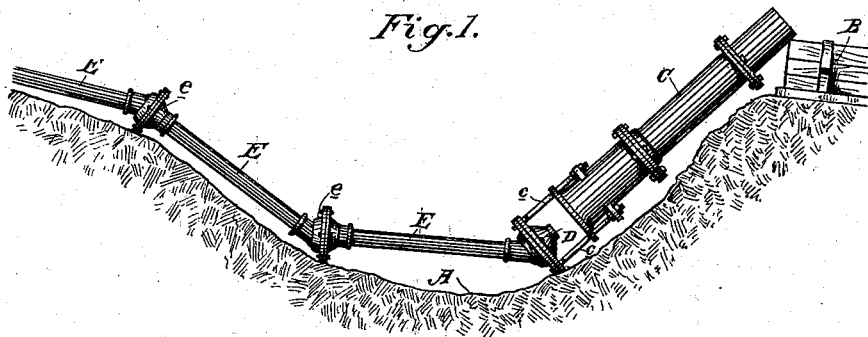
(No Model.)

J. H. MARTIN.  
HYDRAULIC PUMP.

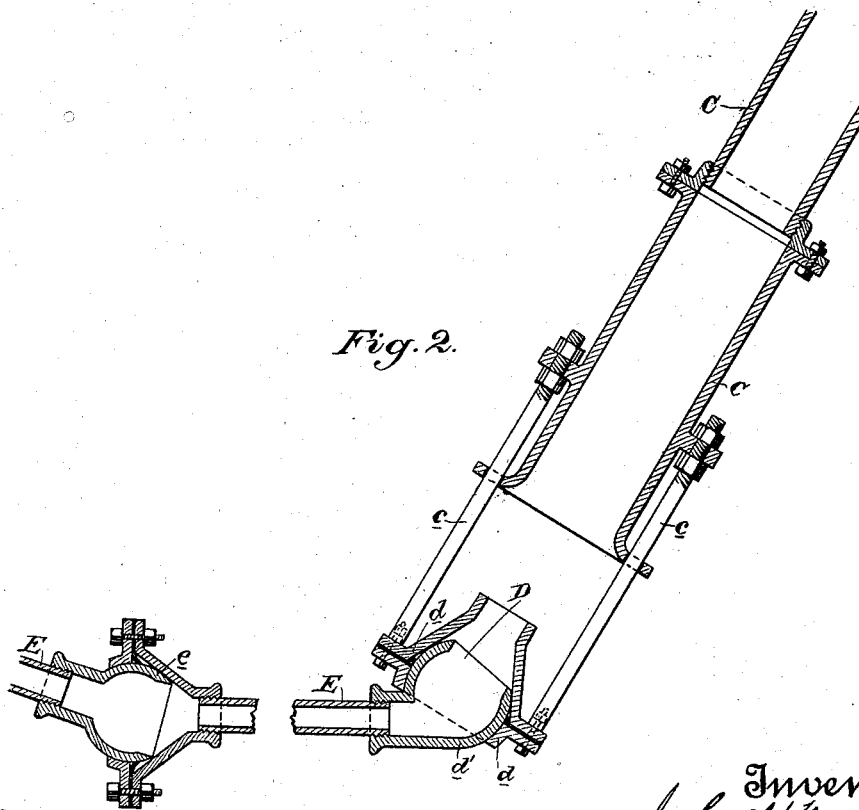
No. 384,050.

Patented June 5, 1888.

*Fig. 1.*



*Fig. 2.*



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# UNITED STATES PATENT OFFICE.

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## HYDRAULIC PUMP.

SPECIFICATION forming part of Letters Patent No. 384,050, dated June 5, 1888.

Application filed January 23, 1888. Serial No. 261,672. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN HULL MARTIN, of Oroville, Butte county, State of California, have invented an Improvement in Hydraulic Pumps; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates, broadly, to hydraulic gravel-mining, and particularly to a pump by which an excavation can be readily made in the sink or workings down to the bed-rock, preparatory to applying the ordinary hydraulic elevator, said pump being further adapted for use in river gravel-mining, acting itself as an elevator.

15 An elevator of the ordinary type—such as shown in Patent No. 277,762, issued to me May 15, 1883—consists of a discharge-pipe the lower end of which is set down into an excavation in the workings, and the upper end is in communication with the flume or rests on the foot dam or top of the breast above. In the open lower end of this pipe is fitted the nozzle of the supply-pipe by which water under pressure is directed into the inclined discharge-pipe, the water serving to force the material up through the discharge-pipe, said material being first washed down into the excavation by means of a powerful stream of water directed upon it in the surrounding workings by a hydraulic engine or nozzle, commonly known as a "hydraulic giant." In ordinary cases the excavation in which the lower end of the elevator or discharge-pipe rests must be first made by digging in the usual manner and throwing up and disposing of the stuff and water which accumulates by a suitable means—such as by shovels, wheelbarrows, and ordinary pumps.

My invention has for its object the provision of a pump which is so constructed as to make and clear its own excavation, and which can also be used in river-mining, as it will raise the water and gravel high enough to run through flumes and gold-saving devices.

My invention consists, essentially, in a discharge-pipe to be set at an inclination with its lower end in the workings, a nozzle so jointed to the lower open end of the discharge-pipe as to permit said pipe to change its inclination, and a sectional supply-pipe with

movable or flexible joints connected with the nozzle and supplying water under pressure.

The operation of this pump will be better understood after a more particular description of its construction.

Referring to the accompanying drawings, Figure 1 is a side elevation of my hydraulic pump. Fig. 2 is a vertical section of same.

A may be supposed to be generally the gravel workings or sink, and B is the flume or other receptacle above, being on the elevation to which it is desired to raise the material in the sink.

C is the discharge-pipe, the upper end of which rests upon the flume and the lower end rests upon the ground below. The lower end of the discharge-pipe C is open, and has connected with it, by the bolts *c*, the nozzle D, which, as shown in Fig. 2, consists of a fixed portion, *d*, forming a bearing, and a curved movable portion, *d'*, fitted in the fixed portion and movable therein, though held in position in such a way that, no matter how it may turn, its stream of water is directed centrally and perfectly parallel with the walls of the discharge-pipe.

The nozzle D is connected with a supply-pipe, E, which is made in sections with flexible or movable joints *e*, constructed in any suitable manner to allow each section to vary its inclination as needed, these joints being preferably similar in construction to that by which the nozzle is jointed to the discharge-pipe. The supply-pipe may be supposed to be connected with a suitable source of water, so that water under pressure is directed through it and through the nozzle into the discharge-pipe.

In operating this pump it is properly set, in the first instance. A hydraulic nozzle or giant of ordinary kind is then used to disintegrate the material in the workings directly under and around the lower end of the discharge-pipe. This material finds its way into the open lower end of the discharge-pipe, and is thence forced on up by the water under pressure directed from the nozzle of the supply-pipe, and as the excavation caused by the operation of the giant and the disposal of the material by the pump goes on, the discharge-pipe C va-

ries its inclination, its lower end sinking down, the joint at the nozzle permitting it, and the supply-pipe itself being jointed, its sections change their inclination as the giant washes out the stuff under and around them, so that the whole apparatus goes down as the excavation proceeds, and at the same time the material of said excavation is forced upwardly and carried away by the pump. It will be seen, therefore, that the excavation is thus made of the necessary depth down to the bed-rock without the use of ordinary digging and ordinary disposal of material.

It is obvious that the pump herein described may be considered as an elevator itself, and may be used as such in river-bottoms and other places, or may be used only for the purpose of pumping water out of the sink.

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

1. A hydraulic pump consisting of a discharge-pipe having an open lower end and a nozzle for directing a stream of water under pressure into said open end, said nozzle having a fixed and movable portion whereby the inclination of the pipe may be varied, substantially as described.

2. A hydraulic pump consisting of a discharge-pipe having an open lower end, a flexi-

ble pipe for conveying water under pressure, and a nozzle connected with the supply-pipe, and with the lower open end of the discharge-pipe, said nozzle consisting of a fixed and a movable portion, forming a movable joint, whereby the discharge-pipe and supply-pipe may change their inclination, substantially as herein described.

3. A hydraulic pump consisting of a discharge-pipe having an open lower end, a sectional supply-pipe provided with flexible or movable joints for conveying water under pressure, and a nozzle for said supply-pipe connected with the discharge-pipe, said nozzle consisting of a fixed and movable portion, forming a flexible joint, whereby both pipes may automatically change their inclination, substantially as herein described.

4. In a hydraulic pump, the combination of the inclined discharge-pipe, the flexibly-jointed supply-pipe, the flexibly-jointed nozzle, and the bolts connecting the nozzle with the discharge-pipe, substantially as herein described.

In witness whereof I have hereunto set my hand.

JOHN HULL MARTIN.

Witnesses:

LEWIS B. HARRIS,  
M. MANSFIELD.