Nov. 4, 1952 W. T. VOGELPOEL 2,616,560

MACHINE FOR MINING PRECIOUS METALS OR STONES IN RIVERS BENEATH THE SURFACE THEREOF

Filed Nov. 10, 1947

Fig. 1

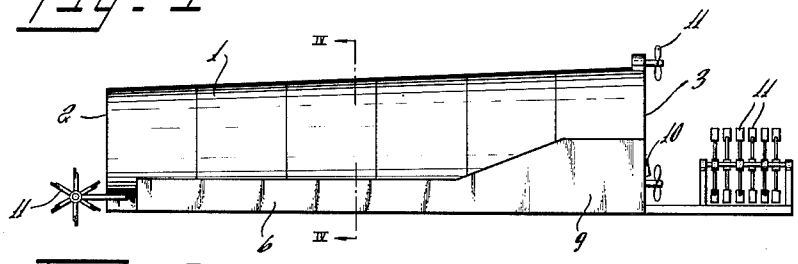



Fig. 2

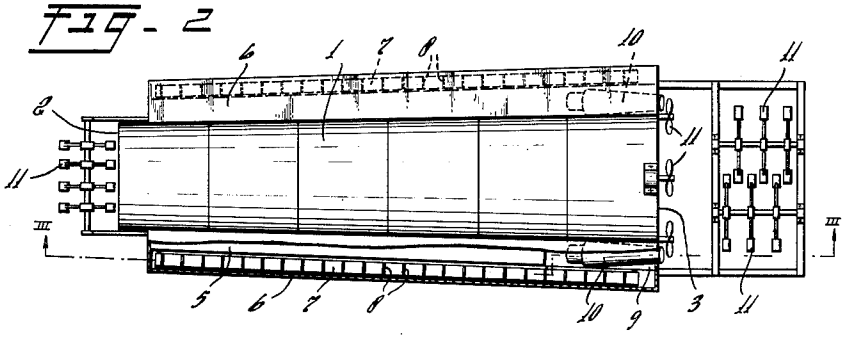



Fig. 3

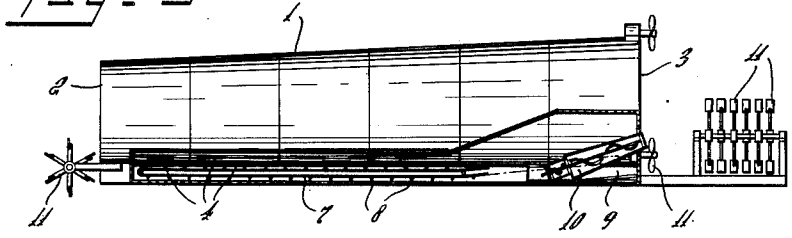
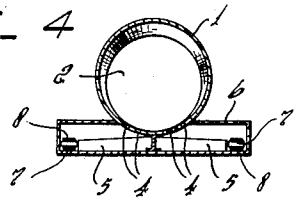


Fig. 4



INVENTOR.

Willem Theodorus Vogelpoel

BY Wenderoth, Reid & Pennock

ATTORNEYS

Patented Nov. 4, 1952 2,616,560

# UNITED STATES PATENT OFFICE

2,616,560

## MACHINE FOR MINING PRECIOUS METALS OR STONES IN RIVERS BENEATH THE SURFACE THEREOF

Willem Theodorus Vogelpoel, Surabaya, Netherlands East Indies

Application November 10, 1947, Serial No. 785,090
In the Netherlands East Indies November 24, 1946

2 Claims. (Cl. 209—17)

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The invention relates to a machine for mining precious metals or stones in a river beneath the surface thereof, which machine comprises an open tube diverging toward the outlet end and a washing device.

In order to render the operation of the machine independent of the rate of flow of the river water and to guarantee a high yield, a stirrer is provided according to the invention both in front of the inlet end and at the rear of the outlet end of the diverging tube, the perforated lower side of the tube being located above a plane sloping down to one side or to two sides in a direction perpendicular to the centre-line of the tube, a conveying device—located in a closed space—being arranged along the lower edge or edges of this plane, which device leads to a closed washing room provided with a washing device.

In illustration of the invention an embodiment of the machine and its operation will be described with reference to the drawing.

Fig. 1 is a side elevation and

Fig. 2 is a plan view of the machine;

Fig. 3 is a section on the line III—III in Fig. 2;

Fig. 4 is a section on the line IV—IV in Fig. 1.

The machine consists of a tube 1 about 15 metres in length, the inlet end 2 of which has a diameter of 1 metre and the outlet end 3 a diameter of 1.5 metres.

The tube 1 built up from segments, is provided with perforations 4 at the lower side, which perforations are located above a plane 5 sloping down to two sides in a direction perpendicular to the centre-line of the tube.

This sloping plane 5 and the perforated lower side of the tube 1 are enclosed by a casing 6. In the casing 6 and along the two lower edges of the plane 5 a conveying device is located, which comprises a conveyor belt 7 having ribs 8 perpendicular thereto which ribs drag over the bottom of the casing 1.

The conveyor belts 7 each lead to a closed washing room 9 in which a washing device 10 is provided.

In front of the inlet end 2 and at the rear of the outlet end 3 of the tube 1 stirrers 11 are located for generating a strong flow of water in the tube 1 and for drawing heavy material consisting of gravel mixed with precious metals and stones into said tube.

In operation the machine—which has been lowered into the water until resting on the bed of the river—has the inlet end 2 of its tube 1 pointing upstream.

By putting the stirrers 11 into operation the

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velocity of the water flowing into the tube 1 is increased and stony material mixed with precious metals and stones is carried along by the water and drawn into the tube 1.

The water and the coarse stones will again leave the tube 1 at the outlet end but the other heavy material will drop through the perforations 4 in the lower side of the tube 1 onto the sloping planes 5, slide down along them and next be carried along by the conveying devices 7 to the washing rooms 9 on the bottom of which it will accumulate.

In the washing rooms which are also filled with water, this heavy material will be taken up by the washing devices 10 disposed in said rooms, which devices will separate the metals and precious stones from the lighter, valueless stony material which is returned to the river through the discharge end of the washing device.

In order to avoid an undesirable accumulation of this waste material it is dispersed by the stirrer 11 located at the outlet end of the tube 1.

After raising the machine above the surface of the water only the valuable wash residues will have remained behind in the washing devices, from which they may be easily collected.

I claim:

1. Machine for mining precious metals or stones from the bed of rivers and like water courses beneath the surface thereof, comprising a casing carrying parallel to its bottom an open tube having an inlet end and an outlet end and diverging towards said outlet end, a stirrer located in front of said inlet end, a second stirrer at the rear of said outlet end, said stirrers being adapted to pass water and soil from the river bed through said tube, said tube having perforations in its lower side, at least one plane surface located beneath said perforations and sloping downwardly in a direction normal the axis of said tube, a conveying device located in said casing and arranged along the lower edge of said plane surface, said conveying device leading to a washing-out device arranged in said casing and adapted to separate precious metals and stones from the soil, which has passed the perforations in the tube and which through the agency of said sloping plane surface and conveying device is supplied to said washing-out device.

2. Machine for mining precious metals or stones from the bed of rivers and like water courses beneath the surface thereof, comprising a casing carrying parallel to its bottom an open tube having an inlet end and an outlet end and diverging toward said outlet end, a stirrer lo-

cated in front of said inlet end, a second stirrer at the rear of said outlet end, said stirrers being adapted to pass water and soil from the river bed through said tube, said tube having perforations in its lower side, two plane surfaces located beneath said perforations, each plane surface sloping downwardly in a direction normal to the axis of said tube and oppositely to the other plane surface, a conveying device located in said casing and arranged along the lower edge of each of said plane surfaces, each said conveying device leading to a washing-out device arranged in said casing and adapted to separate precious metals and stones from the soil which has passed the perforations in the tube and which through the agency of said sloping plane surface and conveying device is supplied to said washing-out device.

WILLEM THEODORUS VOGELPOEL.




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