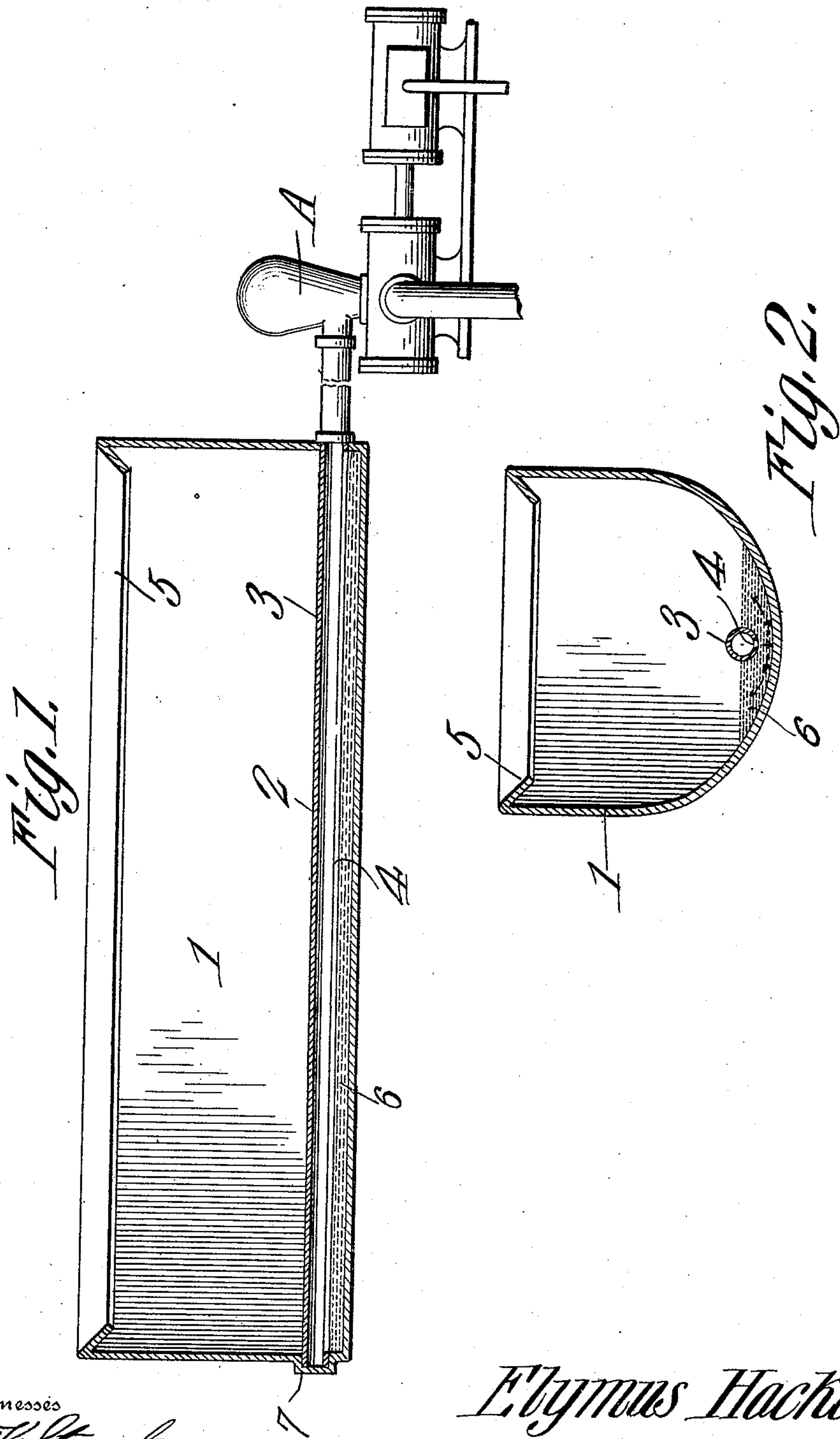


E. HACKETT.
AMALGAMATOR.

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929,086.

Patented July 27, 1909.



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UNITED STATES PATENT OFFICE.

ELYMUS HACKETT, OF NORTH YAKIMA, WASHINGTON.

AMALGAMATOR.

No. 929,086.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed November 20, 1907. Serial No. 403,080.

To all whom it may concern:

Be it known that I, ELYMUS HACKETT, a citizen of the United States, residing at North Yakima, in the county of Yakima and State of Washington, have invented a new and useful Amalgamator, of which the following is a specification.

This invention relates to apparatus for use in amalgamating gold and its object is to provide simple and efficient means whereby gold, and particularly the finer values or the flour gold is thoroughly commingled with the mercury.

A still further object is to provide means whereby the values are forcibly projected into the bottom portion of the mercury so that gravity is utilized in addition to amalgamation for the purpose of separating the gold from impurities commingled therewith.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claim.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a longitudinal section through the amalgamator, a pump being connected thereto. Fig. 2 is a transverse section through the amalgamator.

Referring to the figures by characters of reference, 1 designates a trough of any desired proportions and having preferably a substantially semi-cylindrical bottom 2 and supported longitudinally within the trough and close to the center of the bottom thereof is a discharge pipe 3 having a longitudinal orifice or slot 4 in the lowermost portion thereof. One end of this pipe is seated and supported within a socket 7 formed in one wall of the trough, said socket constituting a closure for the pipe end. The other end of the pipe extends through the other end wall of the trough and is connected to a suitable pump A. Downwardly inclined inwardly extending flanges 5 are formed along the upper edges of the walls of the body or trough and constitute guards to prevent an undesirable overflow from the trough.

When it is desired to use the device herein described mercury is placed within the trough as indicated at 6 so as to extend about one-half or two-thirds the height of the pipe 3. Water carrying the values to be amalgamated is then forced into the pipe

3 by the pump A and will be projected forcibly downward through the slot 4 and against the center of the curved bottom 2 in a thin sheet extending throughout the length of the slot 4. The distance between the slot and the bottom of the trough is comparatively slight and therefore the water and the values carried by it is practically unhindered during its movement against the bottom of the trough. Upon reaching this point the sheet of water etc. is divided longitudinally and the water and other undesirable portions of the mixture will promptly move upward because lighter than the mercury. The gold and the gold bearing portions of the mixture will remain within the mercury because heavier than it and as soon as the gold becomes amalgamated all of the undesirable particles will rise to the surface of the mercury. The water upon rising within the trough will overflow therefrom and the flanges 5 are designed to retain any undesirable particles which may be carried upward by the water.

Importance is attached to the fact that this apparatus can be used in connection with a comparatively thin sheet of mercury and therefore the passage of values through the mercury is subjected to the minimum resistance thereby. Importance is also attached to the fact that the parts are so arranged as to cause the sheet of water etc. to split longitudinally upon the bottom of the trough when projected thereagainst. The saving of all values is thus positively insured because they are thus thoroughly spread in opposite directions at the bottom of the sheet of mercury. It will be noted that the bottom of the trough receives the full force of the mixture discharged through the pipe and there is no danger therefore of any of the values being forcibly projected through the mercury before amalgamation can occur.

By arranging the pipe 2 in the manner shown and described it is possible to remove it from the trough simply by withdrawing it longitudinally from the end wall through which it extends. It is thus possible to conveniently and quickly clean the trough and pipe.

What is claimed is:

In apparatus of the class described, a trough having a concave, substantially semi-cylindrical bottom adapted to be partly filled with mercury, a pump, a discharge pipe ex-

tending therefrom and longitudinally of the
trough and spaced above the center of the
concave bottom thereof, said pipe having a
single elongated outlet extending through-
5 out the length of the trough and in the
lowermost portion of the pipe, said slot con-
stituting means for directing a sheet of
value bearing fluid downwardly in a vertical
plane corresponding with the radius of the
10 arc of the bottom of the trough, the lower
slotted portion of the base being arranged
to be partially submerged in the mercury,
said trough bottom constituting means for
receiving the full force of the discharge

sheet of fluid and for splitting the sheet of 15
fluid longitudinally to direct it to opposite
sides of the pipe and up to the surface of
the mercury, and means depending down-
wardly and inwardly from the edges of the
trough for preventing overflow of the liquid 20
contents of the trough.

In testimony that I claim the foregoing as
my own, I have hereto affixed my signature
in the presence of two witnesses.

ELYMUS HACKETT.

Witnesses:

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AUSTIN W. BARR.