

No. 773,266.

PATENTED OCT. 25, 1904.

G. C. SCOTT.
AMALGAMATING MACHINE.
APPLICATION FILED AUG. 21, 1901.

NO MODEL.

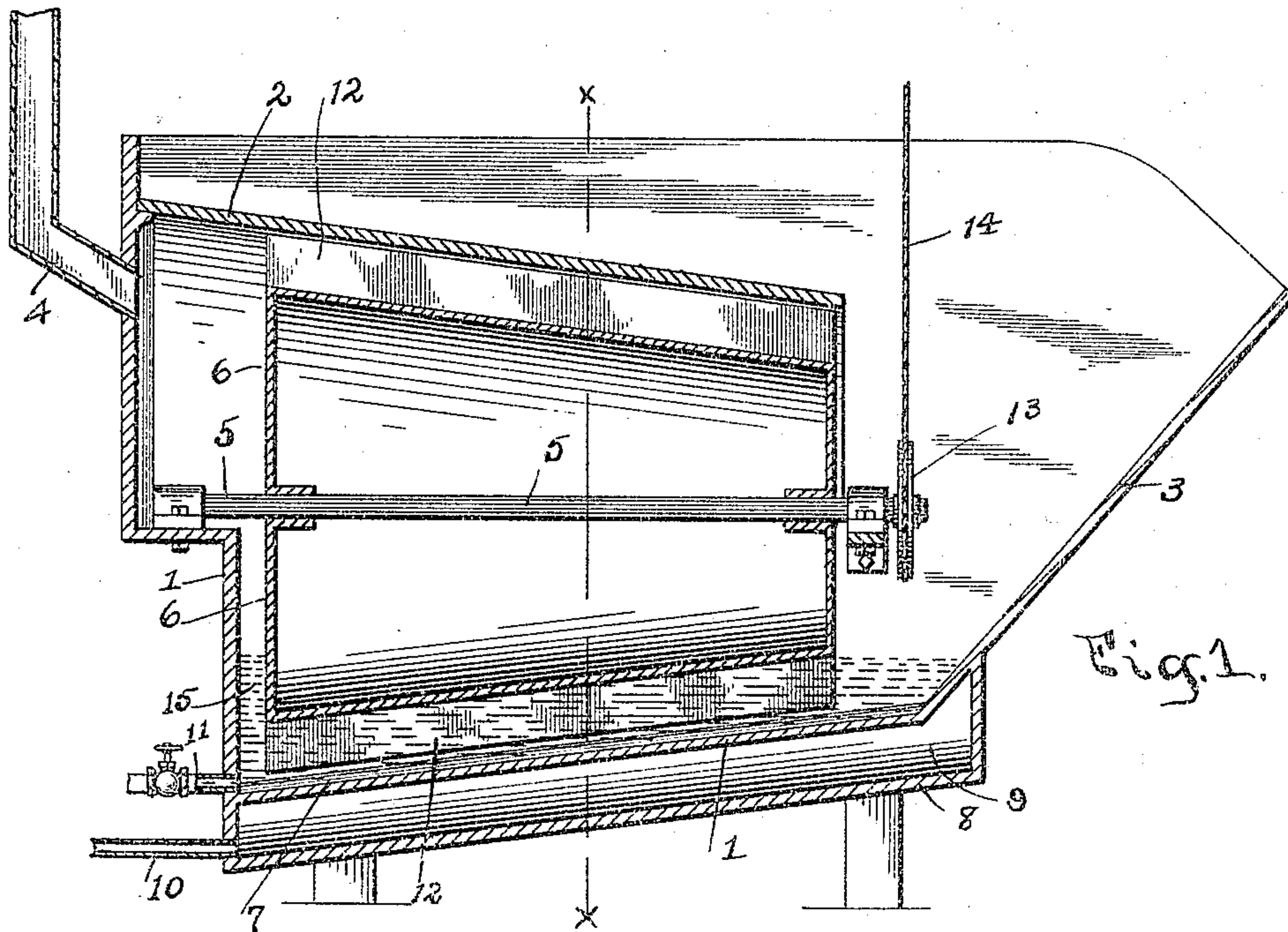


Fig. 1.

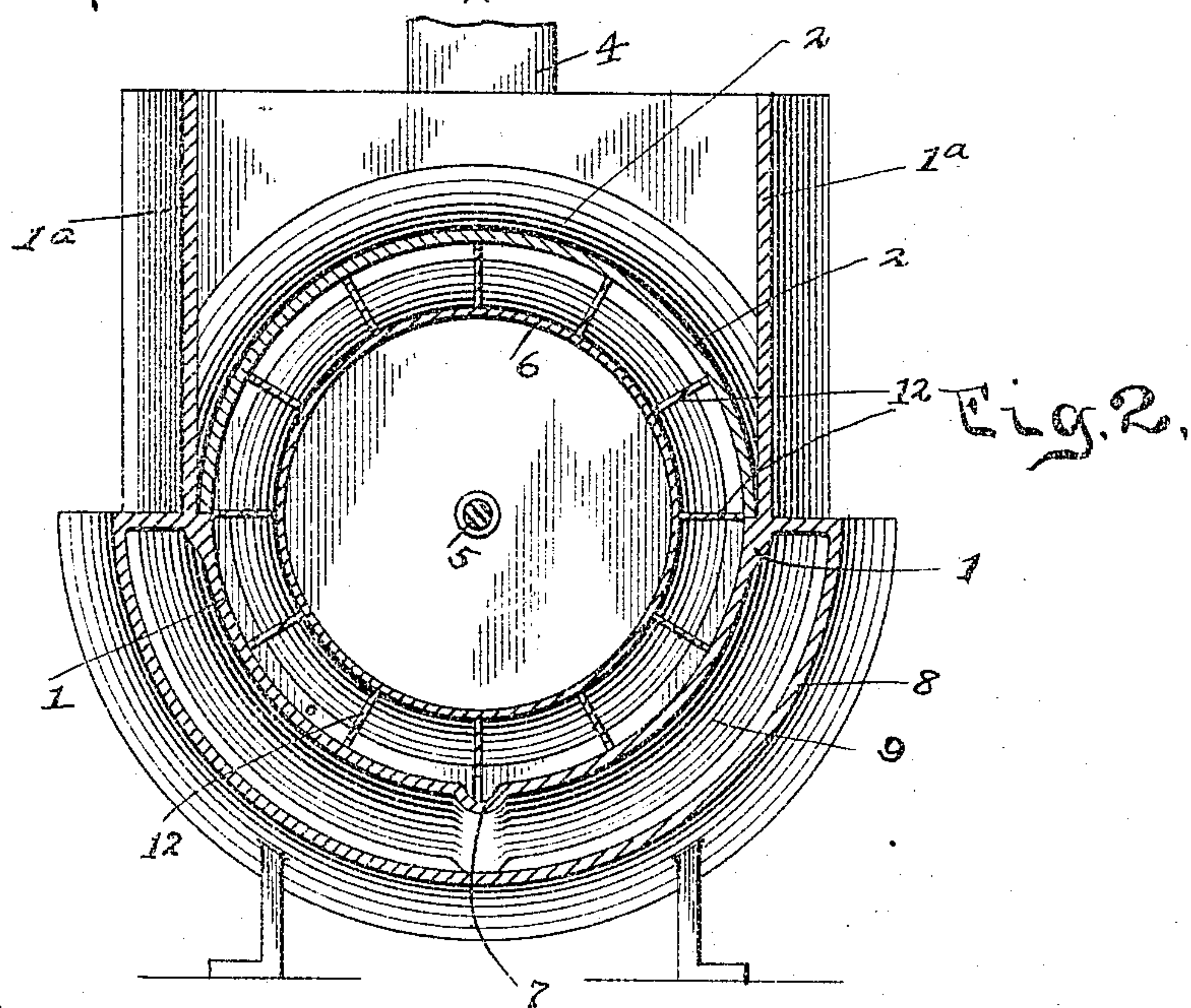


Fig. 2.

WITNESSES:

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AMALGAMATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 773,266, dated October 25, 1904.

Application filed August 21, 1901. Serial No. 72,741. (No model.)

To all whom it may concern:

Be it known that I, GERARD C. SCOTT, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Amalgamating-Machines, of which the following is a specification.

My invention relates to the improvement of amalgamating-machines; and the objects of my invention are to provide an amalgamating-machine in which the amalgamating-body is caused to rotate through a body of mercury of improved construction and arrangement of parts, to so construct my improved machine as to insure the carrying of the ore-pulp there-through in a uniform or substantially uniform manner regardless of the varying weight of the material forming the pulp, and to produce other improvements the details of construction and arrangement of parts of which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a central vertical longitudinal section of my improved machine, and Fig. 2 is a transverse section on line *xx* of Fig. 1.

Similar numerals refer to similar parts throughout both views.

In carrying out my invention I employ a casing comprising a main or lower section 1, which, in conjunction with an upper or convex cover-section 2, forms a substantially cylindrical body, which, owing to the tapering of its sections toward one end, imparts a truncated-cone form thereto. The main section 1, however, is provided with upwardly-extending sides 1^a, which extend above the casing-section 2 and which are also extended beyond the smaller end of the casing-body and are connected on their under sides by an upwardly-inclined extension bottom plate 3. Leading into the larger end of the casing 1 2 and in the upper portion thereof is an ore-pulp inlet 4. Journaled within the casing above described in suitable bearings is a horizontal shaft 5, on which is mounted a closed drum 6, the latter being of less diameter than said casing and converging toward its outer end to correspond with the convergence of said cas-

ing. Extending throughout the length of the inner surface and bottom of the body of the section 1 is a channel or groove 7, and below this lower section 1 is provided an external casing or jacket 8, which forms a steam-chamber 9, into which leads a steam-pipe 10. At the lower end of the channel 7 I provide a valve-controlled mercury-outlet 11.

Upon the tapering periphery of the drum 6 I provide longitudinally-arranged blades 12, the outer edges of the latter being in close proximity to the inner surface of the casing within which said drum is adapted to rotate. Both the drum and said blades are formed of copper or other suitable amalgamating material. On the outer end of the shaft 5 and within the end extension of the casing I provide a pulley or belt wheel 13, over which runs an operating cord or belt 14. As indicated by the dotted lines 15, the lower portion of the casing-section 1 is adapted to contain a body of mercury at such height as to insure the running of the lower portion of the drum 6 therein as well as the inclined blades 12.

In utilizing my invention the ore-pulp is introduced through the inlet 4 into the body of the casing under desirable pressure, and, rotary motion being contributed to the drum 6 through the belt-wheel 13, it is obvious that the ore-pulp which passes through the casing between the blades 12 and about the drum 6 will be subjected to the mercurially-treated surfaces of the revolving parts. In the rotation of the drum it is obvious that the blades 12 must pass through the body of mercury which is contained in the lower portion of the casing and that, owing to the inclination of both casing and the drum and the fact that the blades follow the inclination of said drum, it will be understood that when one of the blades is submerged in the mercury its inner end is submerged to a greater depth than its outer end. In the rotation of the drum it is obvious that, owing to the inclination of said blades and the fact that the level of the mercury is on a horizontal plane, the inner ends of the blades must enter the mercury first, said blades and the spaces

between the same being thus gradually submerged from their inner to their outer ends. In this operation it will be seen that the ore-pulp, particularly the heavier portions thereof, which through force of gravity might tend to deposit in the inner end portion of the machine, will as the blades enter the mercury be gradually displaced by the mercury, this displacement of the ore-pulp in the spaces between the blades resulting in the pulp being transferred to the opposite or outer end of the machine. In this manner it will be understood that the heavier portions of the ore are prevented from accumulating in the inner end of the machine. From the outer end of the drum the tailings are discharged over the incline 3.

It will be understood that the chamber 9 is designed to have steam introduced therein for the purpose of imparting the desired temperature to the mercury.

Having now fully described my invention,

what I claim, and desire to secure by Letters Patent, is—

In an amalgamating-machine, the combination of a substantially horizontal tapered mercury-containing casing closed at its larger end and open at its smaller end with an inlet for its larger end, a steam-jacket for the lower portion of the casing, a longitudinal substantially horizontal shaft journaled within the casing, and a closed amalgamating-body carried axially upon the shaft, tapered with the casing and provided with longitudinal substantially radial blades, means for rotating said amalgamating-body and an inclined tailings-discharge chute located adjacent to the smaller end of said tapered amalgamating-body and forming a continuation of the tapered casing.

GERARD C. SCOTT.

In presence of—

C. C. SHEPHERD,

A. L. PHELPS.