

No. 688,439.

Patented Dec. 10, 1901.

G. C. SCOTT.
AMALGAMATING MACHINE.

(Application filed May 2, 1901.)

(No Model.)

2 Sheets—Sheet 1.

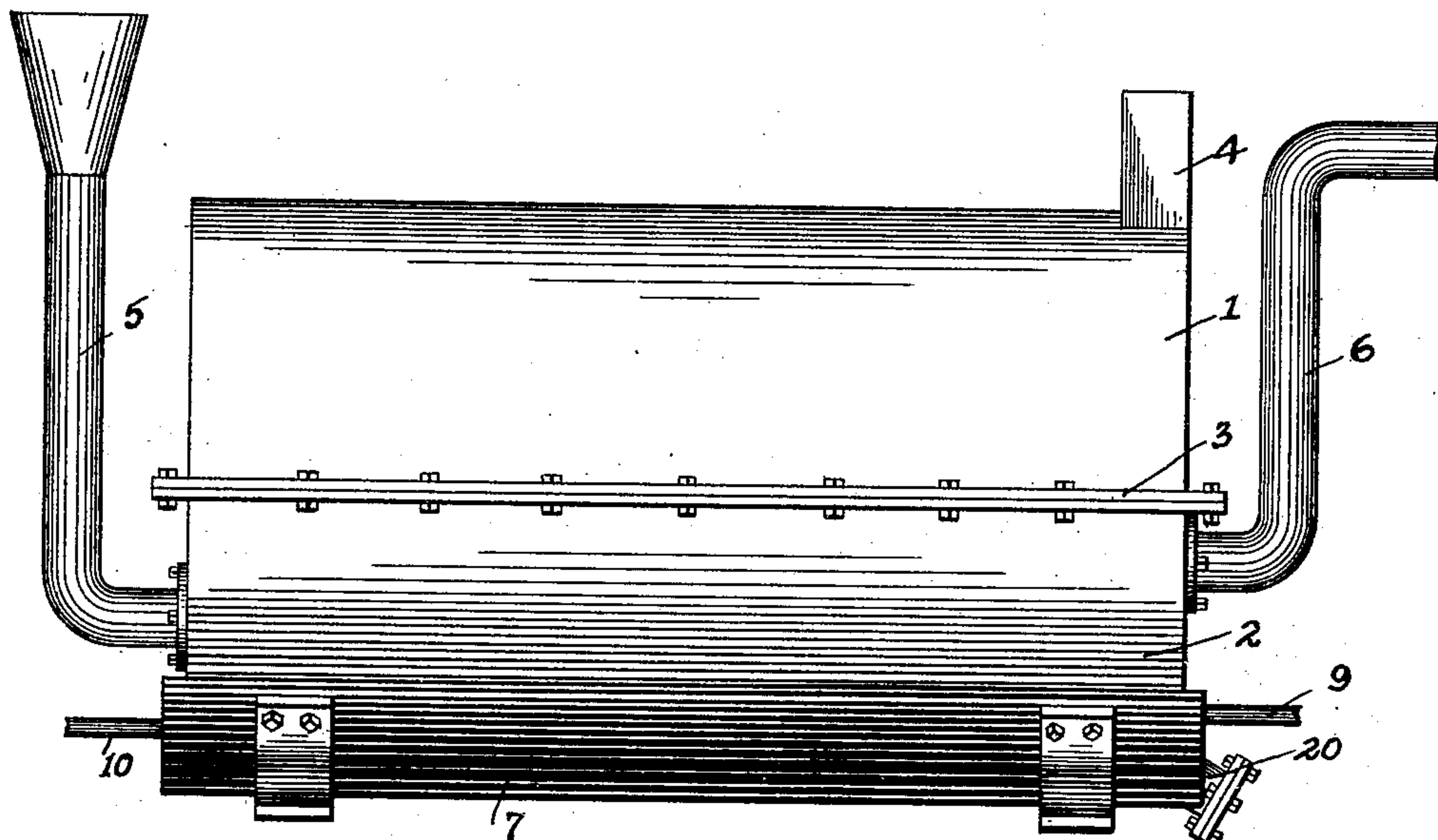


Fig. 1.

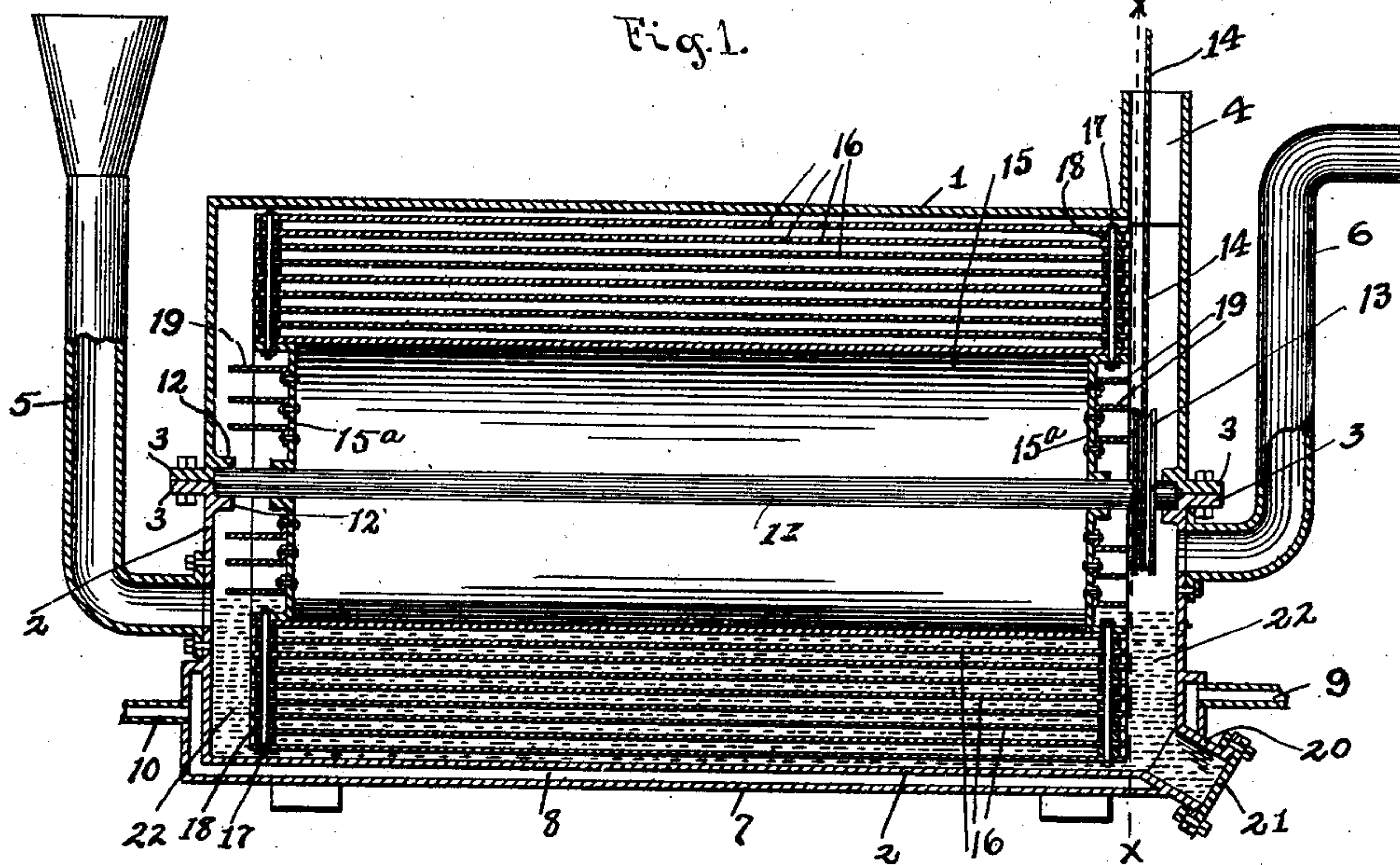


Fig. 2.

WITNESSES:

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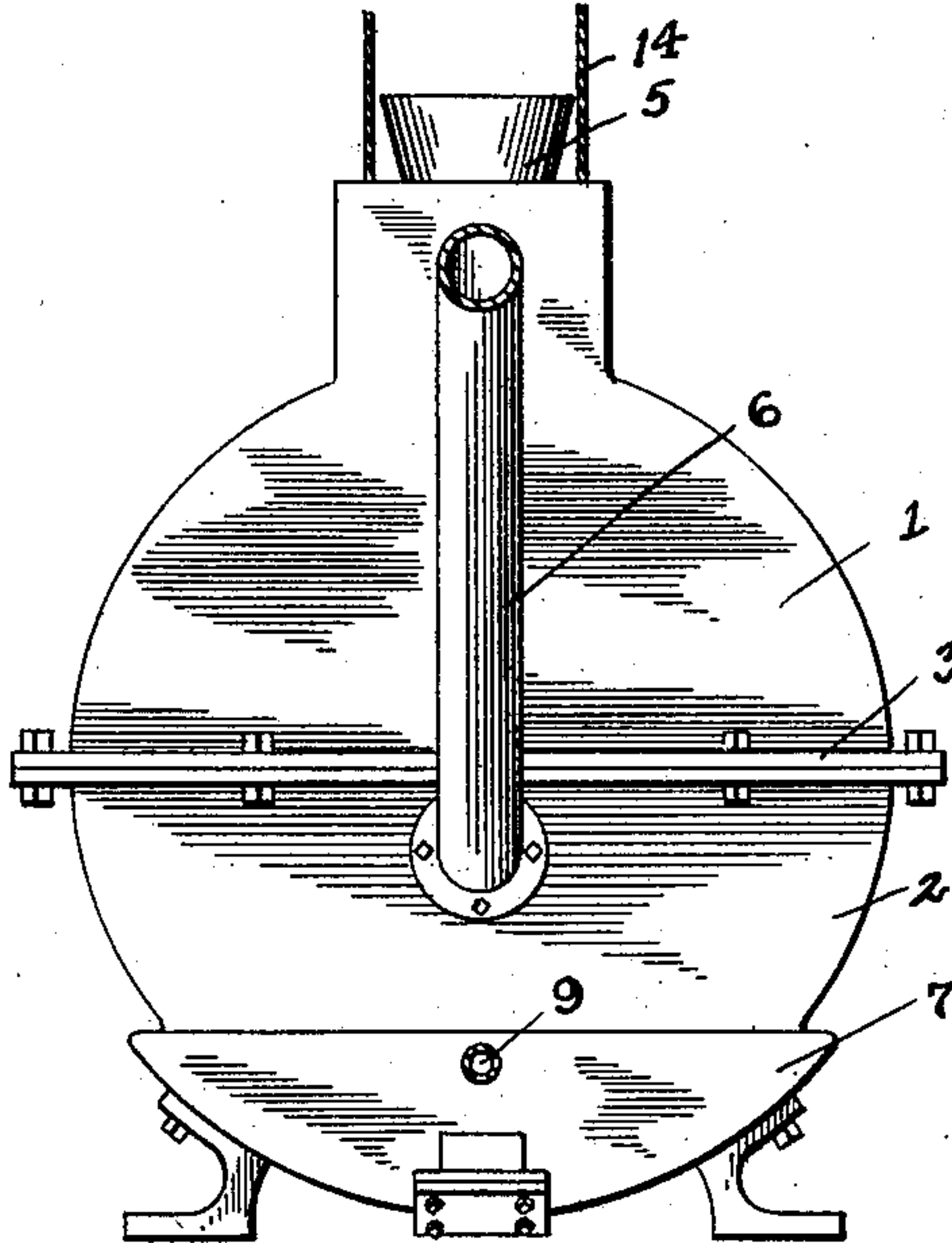


Fig. 3.

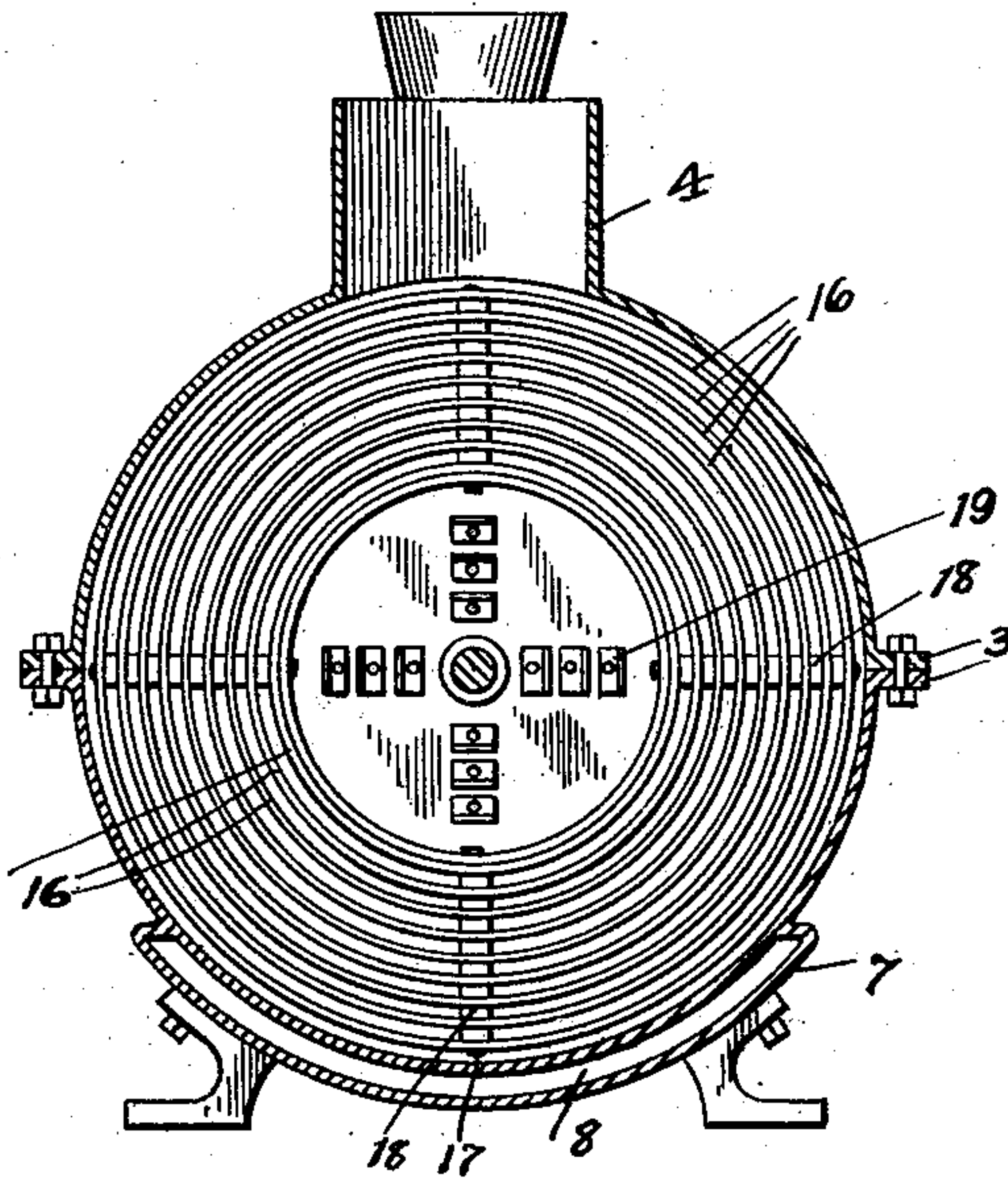


Fig. 4.

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UNITED STATES PATENT OFFICE.

GERARD C. SCOTT, OF COLUMBUS, OHIO.

AMALGAMATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 688,439, dated December 10, 1901.

Application filed May 2, 1901. Serial No. 58,414. (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 ore-amalgamating machines; and the objects of my invention are to provide an improved machine of this class of superior construction and arrangement of parts, to so construct said machine as to insure a comparatively thorough amalgamation of the ore, to provide improved mechanism for subjecting the ore-pulp to the action of mercury, to construct my improved machine in a simple and inexpensive manner, and to produce other improvements, the details 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 side elevation of my improved machine. Fig. 2 is a central longitudinal section thereof. Fig. 3 is an end view, and Fig. 4 is a transverse section on line $x x$ of Fig. 2.

Similar numerals refer to similar parts throughout the several views.

In carrying out my invention I employ a suitably-supported external casing, which is formed of detachably-connected upper and lower semicylindrical sections 1 and 2, these sections being preferably connected through the medium of outwardly-projecting end and side flanges 3, which are bolted together. Leading upward from the casing, preferably at one end, is an open flue-like projection 4.

5 represents an inlet or supply pipe which leads into one end of the lower casing-section 2, and 6 is an outlet-pipe which leads outward from the opposite end of said casing. As indicated at 7, the lower portion of the casing-section 2 is incased or inclosed by a jacket wall or plate, between which and the wall of the section 2 is formed a heating chamber or space 8. This chamber 8 has leading therein at a suitable point a steam-inlet pipe 9 and at the opposite end an outlet-pipe 10.

11 represents a central horizontal operating-shaft, the ends of which are journaled in suitable bearings which are preferably formed partly in the upper casing-section 1

and partly in the lower casing-section 2, as indicated at 12. Adjacent to one of its ends this shaft 11 may be made to carry a suitable power-contributing wheel 13, the operating belt or cord 14 of which may pass outward through the opening 4. Upon the shaft 11 is mounted within the central portion of the casing 1 2 a horizontally-arranged drum or closed cylinder 15. Surrounding the drum 15 and arranged at desirable intervals one from the other is a plurality of cylinders 16, the latter being formed of copper plate. These cylinders are so telescoped one within the other as to leave a desirable space between the same. The cylinders 16 are united, preferably adjacent to their ends, by radially-arranged bolts 17, which pass through cylinder-supporting washers or blocks 18, and the inner ends of which are connected, as shown, with the outturned rim-flanges of the heads 15^a of the drum 15. Projecting from the outer faces of these heads at suitable intervals are angular agitating fingers or plates 19.

Extending from the lower portion of the casing 2, preferably at one corner, as shown, is an outlet-neck 20, the outer end of which is provided with a removable head or end plate 21.

In utilizing my invention the lower portion of the casing 1 2 has introduced therein a body of mercury, which is indicated by the dotted lines and by the reference-numeral 22, this mercury preferably being of a height within said casing which brings its level to or slightly beyond the periphery of the drum 15. The ore-pulp or mingled ground or crushed ore and water is introduced into the casing under pressure through the inlet or supply pipe 5, and rotary motion having been contributed to the shaft 11, its drum 15, and the copper-plate cylinders 16 it is obvious that the incoming ore-pulp will pass between and be carried about the cylinders 16 and that said cylinders as well as the pulp will thus be carried through and subjected to contact with the body of mercury which is contained in the lower portion of the casing. In this manner it is obvious that not only is a desirable contact of the ore and mercury produced, but that the cylinders 16 in their passage through the body of the mercury are subjected to the desirable mercurial coating action.

Owing to the fact that the ore-pulp is driven into the machine under pressure it is obvious that having passed through or between the cylinders and been subjected to the amalgamating process the tailings will find an escape through the outlet or discharging pipe 6. In order to insure a retention of the mercury at a desirable temperature, I have provided the heating-chamber 8, which may impart to the body of mercury the needed heat. In order to drain the casing, I have provided the drain-outlet 20, which may be opened by removal of the head-plate 21.

It is obvious that by detaching the casing-section 1 the shaft 11 will be so released from its bearings as to permit of the same, together with the drum 15 and cylinders 16, being lifted or detached from the casing for the cleaning of the parts or removal of the gold or other ore which has been separated from the pulp by the action above described.

It will be observed that my improved amalgamating-machine is simple of construction and operation and that the parts thereof are so arranged as to insure the ore-pulp being properly subjected to the action of the mercury and the amalgamating plates or cylinders.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an amalgamating-machine, the combination with a casing having inlet and outlet openings and a body of mercury contained therein, of a plurality of copper-plate cylinders

arranged one within the other, said cylinders being connected and mounted to rotate within said casing and travel through said body of mercury, substantially as and for the purpose specified.

2. In an amalgamating-machine, the combination with a casing having inlet and outlet openings, a rotatably-mounted drum therein, a plurality of copper-plate cylinders surrounding and connected with said drum and a body of mercury in said casing, substantially as specified.

3. In an amalgamating-machine, the combination with a casing, a shaft journaled therein and means for imparting a rotary motion to the latter, of a closed drum or body mounted on said shaft, a plurality of cylindrical plates arranged one within the other surrounding and connected with said drum or body, a body of mercury contained in said casing, the latter having inlet and outlet openings, substantially as specified.

4. In an amalgamating-machine, the combination of a casing formed of upper and lower detachable sections, a drum removably journaled in said casing, a plurality of cylindrical plates surrounding and connected with said drum, a body of mercury contained in the casing, said casing having inlet and outlet openings, substantially as specified.

GERARD C. SCOTT.

In presence of—

C. C. SHEPHERD,
W. L. MORROW.