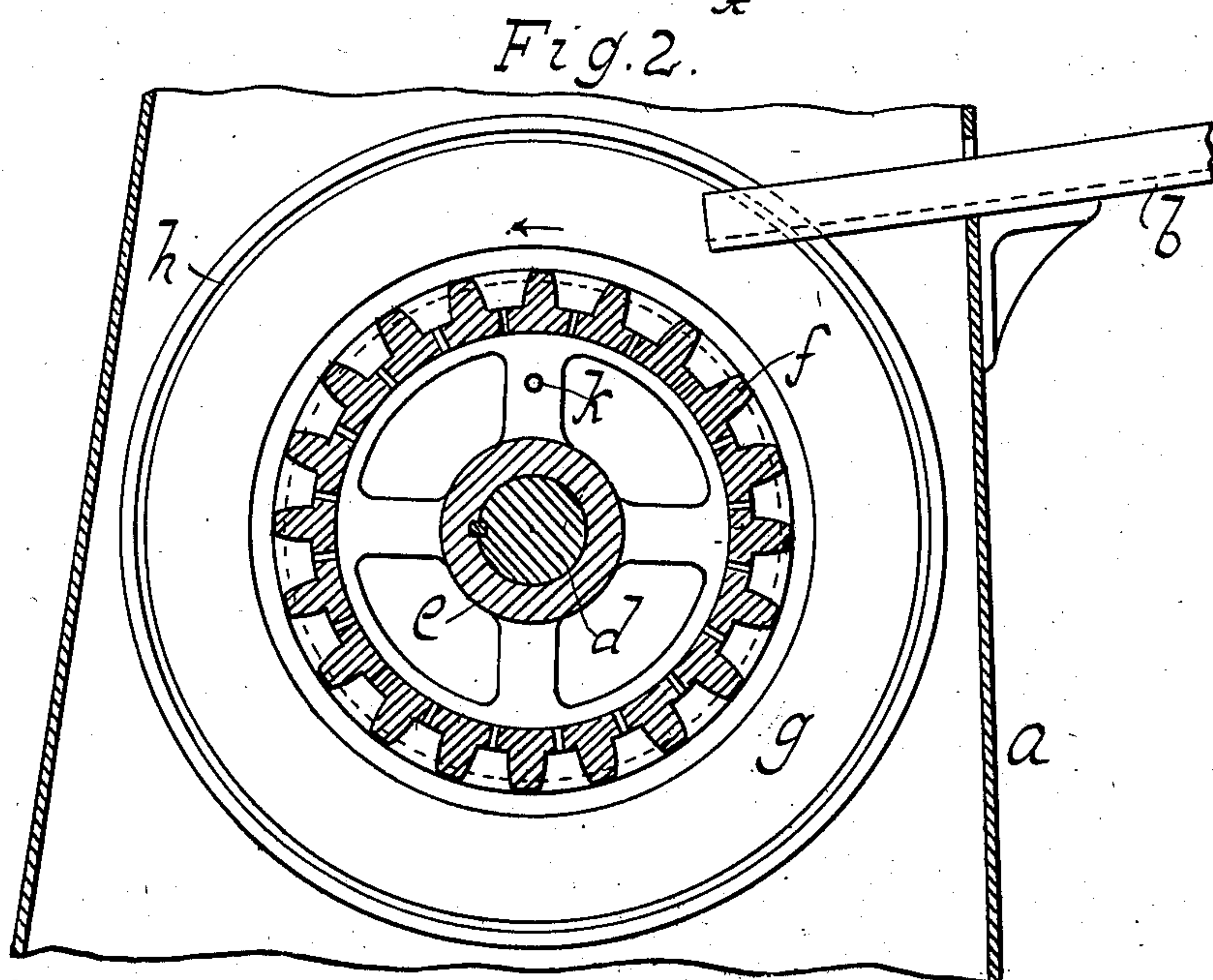
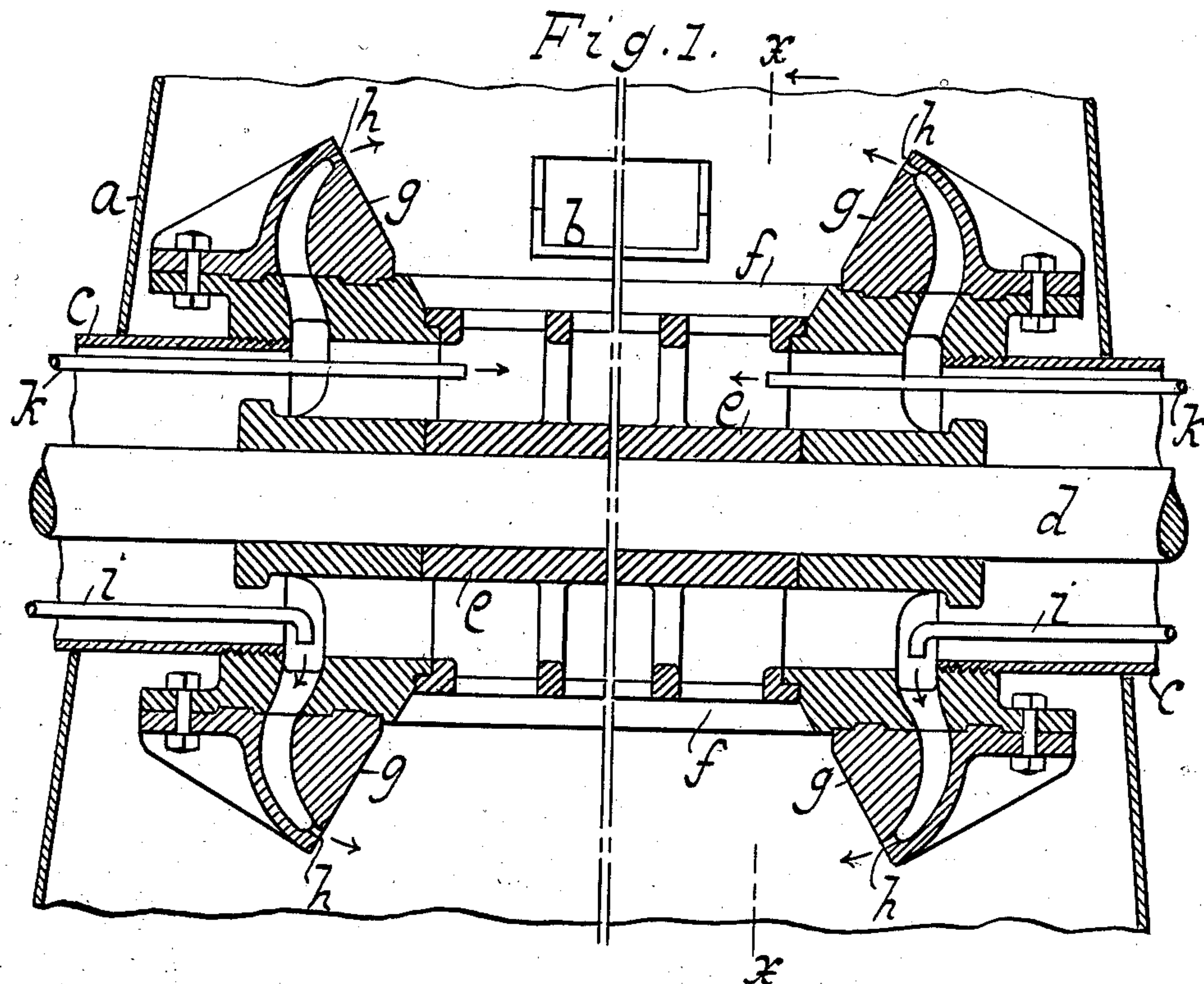


W. R. WARREN.
 APPARATUS FOR GRANULATING BLAST FURNACE SLAG.
 APPLICATION FILED FEB. 11, 1910.

974,003.

Patented Oct. 25, 1910.



Witnesses:
 William Miller
 Christian Almstaedt

Inventor
 William R. Warren
 By his Attorneys
 Hauff & Barland

UNITED STATES PATENT OFFICE.

WILLIAM R. WARREN, OF NEW YORK, N. Y.

APPARATUS FOR GRANULATING BLAST-FURNACE SLAG.

974,003.

Specification of Letters Patent.

Patented Oct. 25, 1910.

Application filed February 11, 1910. Serial No. 543,389.

To all whom it may concern:

Be it known that I, WILLIAM R. WARREN, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented new and useful Improvements in Apparatus for Granulating Blast-Furnace Slag, of which the following is a specification.

This invention relates to an apparatus for securing a more thorough and complete contact between a solution in the form of spray and the particles of molten slag when thrown from the surface of a granulating drum.

This invention is set forth in the following specification and claims and illustrated in the annexed drawing in which:

Figure 1 shows a longitudinal vertical section of an apparatus embodying this invention. Fig. 2 is a vertical transverse section along the line *x x* Fig. 1.

This apparatus comprises a housing *a*. An opening or chute as indicated at *b* gives entrance into the housing. In this housing are a rotating protecting sleeve *c* and a shaft *d*. The rotary drum or its hub *e* is mounted on shaft *d*. The drum has suitable longitudinal corrugations at *f* on its surface. Between the longitudinal corrugations are openings or slits through the wall of the drum, through which solution is thrown by centrifugal force when admitted through intake pipes *h*. Suitable faces are shown at *g* which are placed at suitable angles or incline. These faces have each one or more outlet orifices *h*. A suitable number of supply tubes are indicated at *i* and *k*. Slag or material delivered from entry *b* to the rotary drum is broken up into particles by the rotation or centrifugal force of the drum. Solvent delivered through the supply tubes *i* and *k* and passing out from the slits or orifices is sprayed by the rapid rotation of the drum and attached faces and scattered in a spray and comes in contact with the particles of slag thrown from the drum. The rotation of the drum *e* and of the faces *g* thereon can be effected by any suitable mechanism. A suitable communication allows the solvent delivered from tubes *i* to pass to and out from orifices *h*.

I claim:

1. A device of the kind described comprising a housing with an entrance, a rotary body comprising a drum, and face portions having an outlet orifice. 55

2. A device of the kind described comprising a housing with an entrance, a rotary body comprising a slitted drum and face portions having an outlet orifice, said face portions being located at each side of the drum so as to supply solvent to material thrown from the drum. 60

3. A device of the kind described comprising a housing with an entrance, a rotary body comprising a drum and face portions having an outlet orifice, said face portions being located at each side of the drum so as to supply solvent to material thrown from the drum and said drum having corrugations to project such material. 65 70

4. A device of the kind described comprising a housing with an entrance, a rotary body comprising a drum and a face portion having outlet orifices at suitable angle to supply solvent from each side to material coming from the drum. 75

5. A device of the kind described comprising a housing with an entrance, a rotary body comprising a slitted drum, and a face portion having outlet orifices, said face portion having the outlet portion suitably directed to cause material coming from the drum and material from the outlets to come effectively into contact. 80 85

6. A device of the kind described comprising a housing with a chute, a rotary body comprising a drum, and a face portion having outlet orifices combined with a rotating sleeve containing supply tubes for solvent and having communication with the outlet orifices. 90

7. A device of the kind described comprising a housing with an entrance, a rotary body comprising a drum, and face portions having annular outlet orifices beyond the diameter of the drum. 95

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM R. WARREN.

Witnesses:

WM. E. WARLAND,
CHRISTIAN OLMSTAEDT.