No. 649,680. Patented May 15, 1900.

J. SCOTT.

SPRAYING APPARATUS.

(Application filed Dec. 31, 1896.)

(No Model.)

Fig. 1.

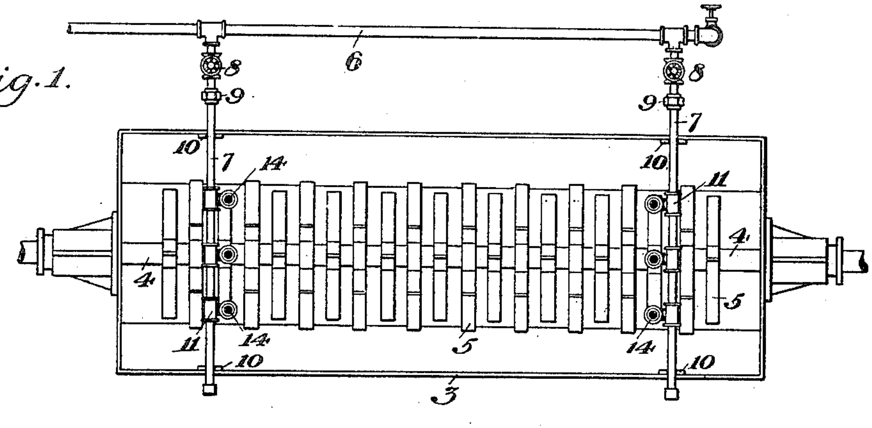


Fig. 2.

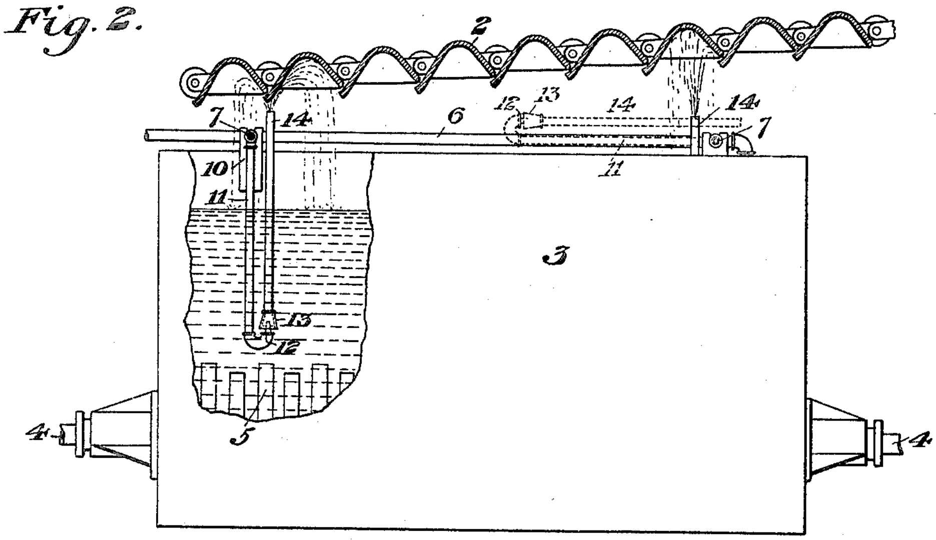


Fig. 3.

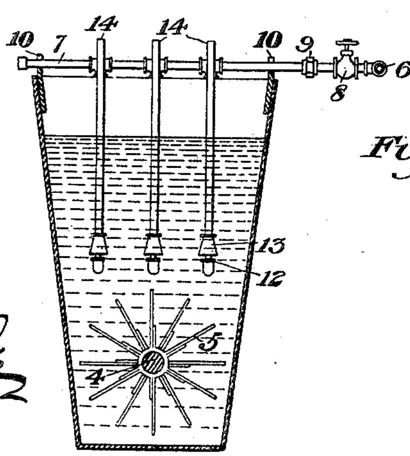
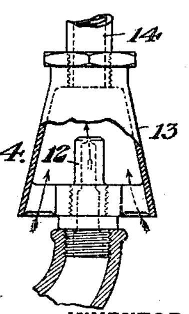


Fig. 4.



WITNESSES

INVENTOR

James Scott
by Bakewell & Bakewell
his attys.

UNITED STATES PATENT OFFICE.

JAMES SCOTT, OF PITTSBURG, PENNSYLVANIA.

SPRAYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 649,680, dated May 15, 1900.

Application filed December 31, 1896. Serial No. 617,563. (No model.)

To all whom it may concern:

Be it known that I, JAMES SCOTT, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Spraying Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of my improved spraying apparatus. Fig. 2 is a vertical section through the spraying apparatus and the series of molds passing thereover. Fig. 3 is a vertical cross-section of the apparatus, and Fig. 4 is a detail view of the nozzle connection.

My invention relates to the apparatus employed for spraying a refractory material over the inner faces of molds and is designed to avoid the expense and labor consequent upon the use of a pump for applying pressure to drive the liquid refractory material into the mold.

To that end it consists in the combination, with an endless series of molds, of a tank arranged to contain the refractory material and a pipe for compressed air or steam leading into the tank and terminating in a nozzle arranged so that the air or steam draws the refractory wash into the spray-pipe directed upwardly, so as to drive the material into the interior of the mold, in combination with a stirrer arranged to prevent the material from precipitating to the bottom of the tank, as well as in the construction and arrangements of the parts, as hereinafter more fully described, and set forth in the claims.

In the drawings, in which similar numerals indicate corresponding parts, 2 indicates a portion of the endless series of molds on the lower portion of their travel, being turned upside down at this point. Beneath the molds is located a tank 3, having extending therethrough a shaft 4, which is provided with a series of blades or arms 5, arranged to stir up the refractory material and prevent its settling at the bottom, the shaft being rotated in any suitable way.

6 is an air-main extending along one side of the tank, from which main extend two horizontal branch pipes 7 7, which are closed at their outer ends and provided with regulating-valves 8 8. Each of these branches is provided with an intermediate loose joint 9, which is so arranged that the branch may be turned or rotated, each branch resting upon slotted brackets 10 10, secured to the tank or mixing-box. From each branch extend downwardly the injector-pipes 11, these pipes being provided with a return-bend, so that the injector 12 is directed upwardly. This injector has a screw-threaded engagement with a nozzle 13, into which the refractory material is drawn by the compressed air or steam passing through the injector, thence proceeding through the spraying-pipe 14, screwed to the nozzle, and being forced into the inner face of the molds in a continuous stream. The number of the branch pipes and the injector-pipes may of course be varied as desired or as necessity requires, and when the device is not in use in order to prevent the clogging up of the nozzle I swing the injector-pipes up into the horizontal position shown in dotted lines in Fig. 2, thus taking it out of the bath of the refractory material.

The operation will be apparent to those skilled in the art, the refractory material being drawn in and forced up through the pipes into the molds in continuous streams as long as the casting is carried on, thus giving a coating to each mold to prevent the iron or the metal from sticking thereto.

The advantages of my invention result from the fact that the use of a pump is avoided and a simple, compact, and efficient apparatus is provided which makes use of the air or steam under pressure which is present in any mill or casting plant.

Many changes in the form and arrangement of the parts may be made by the skilled mechanic without departure from my invention; since

What I claim is—

1. The combination with an endless series of molds, of a tank located beneath the same and arranged to contain a wash of refractory material, a pipe for conveying a fluid under pressure leading into the tank and terminating in an injector, an upwardly-directed nozzle leading from the injector and arranged to direct the material into the molds, and stirrers in the tank arranged to prevent precipitation of the material therein.

2. The combination with a tank arranged

to contain a wash of refractory material, of a pipe for fluid under pressure leading over the same, and an injector-pipe leading downwardly from the same and having a return-bend provided with an injector-nozzle, said pipe being arranged to be swung out of the tank when not in use.

3. The combination of an endless series of metal molds, a tank arranged to contain a wash of refractory material, a pipe for conveying the fluid under pressure leading into the tank and terminating in an injector, a pipe leading from the injector and terminating in an upwardly-directed nozzle beneath the reversed molds and arranged to direct the material thereinto, and a mechanical stirrer in the tank arranged to prevent precipitation of the material therein; substantially as described.

In testimony whereof I have hereunto set my hand.

JAMES SCOTT.

Witnesses:
F. E. GAITHER,
H. M. CORWIN.