

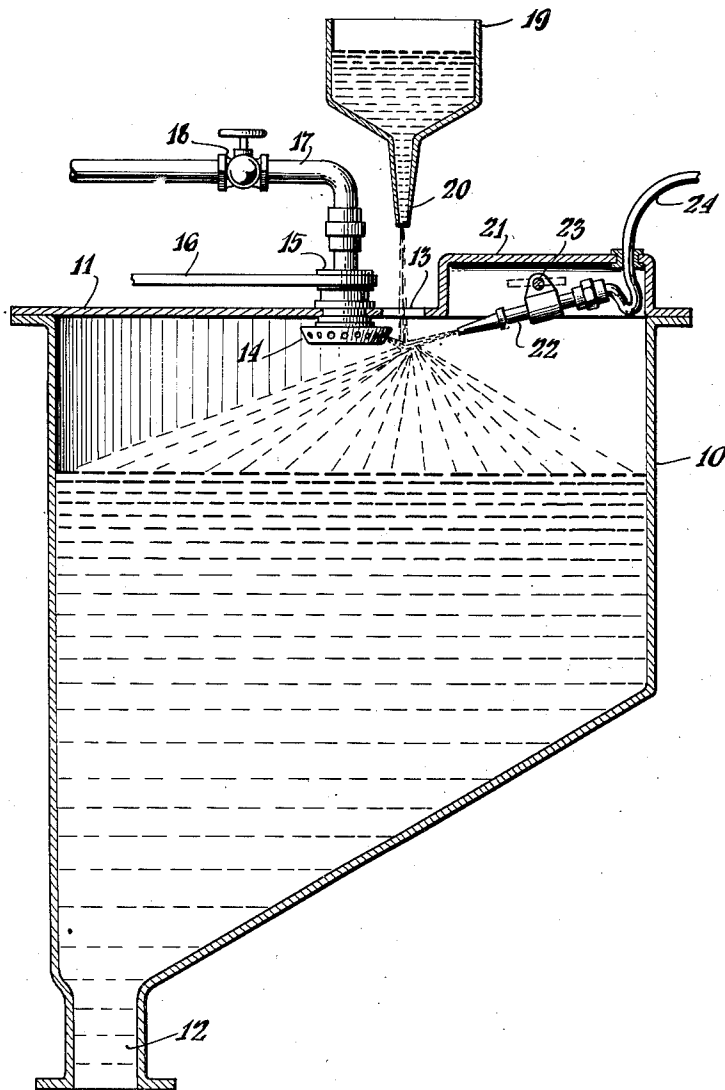
May 17, 1949.

M. H. MEIGHAN ET AL

2,470,569

APPARATUS FOR COMMINUTION OF MOLTEN METALS

Filed Feb. 1, 1947



Merl H. Meighan
Kenneth N. Brown
INVENTORS

BY *James J. Cannon*

ATTORNEY

UNITED STATES PATENT OFFICE

2,470,569

APPARATUS FOR COMMINATION OF
MOLTEN METALS

Merl H. Meighan, River Edge, and Kenneth N. Brown, Teaneck, N. J., assignors to F. W. Berk & Company, Inc., New York, N. Y., a corporation of Maryland

Application February 1, 1947, Serial No. 725,920

2 Claims. (Cl. 18—2.5)

1

This invention relates to a decided improvement in an apparatus for comminuting materials and more particularly metals and metallic alloys whereby said metals and metallic alloys may be obtained in finely subdivided condition and obtaining a greater percentage of fines than in the recognized apparatus now being used in the art.

An object of the invention is to eliminate the collection of molten metal on the side of the container and at the same time to reduce the metal which so collects under the present process into fines.

Another object of the invention is to provide an apparatus to regulate the size of the said fines from very fine fines to a coarse product.

Other objects of the invention will in part be obvious and will appear hereafter.

The invention comprises the introduction of an auxiliary jet which sprays water at various angles against the molten metal.

A diagrammatic illustration of the process is set forth in the accompanying drawing of which 10 represents a tank having a closed top 11, and a drain 12, having an opening in the top cover 13, a spraydrum 14, driving pulley 15, belt 16, a water inlet duct 17, having control valve 18, a molten metal tank 19, said molten tank may be heated by any well-known means, said molten tank having discharge nozzle 20; said tank 10 having an extension cover 21, which houses spray nozzle 22 and supporting a locking bar 23, and flexible hose 24 connected to nozzle 22.

By using said auxiliary spray 22 the molten metal is prevented from accumulating on side of tank 10 and results in more fines.

In the past the metal which accumulated on the tank had to be re-heated and necessitated a further operation to reduce said metal fines. Furthermore after a period of time the tank became clogged and it was impossible to continue the process until said molten metal was removed from the sides of the tank, thus hindering and delaying the process of making fines from molten metal.

It has been ascertained that by using said auxiliary spray at various angles one can obtain coarse fines or very fine fines.

Said auxiliary stream is operated from an opposite side of the rotating streams and impinges the molten metal at various angles and in various planes, depending upon the quality of fines desired and generally impinges the molten metal

2

at a slightly higher elevation to where said metal is impinged by the rotating course of water.

While we have described our particular apparatus, it is obvious that a slight deviation might exist without departing from the apparatus herein described and without departing from the scope or spirit of our invention which is limited only by the scope of the appended claims.

We claim:

1. In combination with a tank having an opening to receive molten metal being poured from a container above said opening, a rotary head spray adjacent said opening and beneath said opening and also beneath said opening and in juxtaposition with said rotary spray head an adjustable nozzle spray, said nozzle spray being positioned so that the water from said nozzle spray continually forces molten metal from the end of said stream of molten metal into the path of the water from the rotary spray head, substantially as described.

2. In combination with a tank having an opening to receive molten metal being poured from a container above said opening, a rotary head spray adjacent said opening and continuously supplying water under pressure of 50 pounds per square inch and also beneath said opening and in juxtaposition with said rotary spray head, an adjustable nozzle spray, said adjustable nozzle spray also supplying water continuously and at the rate of 50 pounds per square inch, and so positioned that the water from the said adjustable nozzle spray striking the end of said molten metal forces said molten metal into the path of the water being emitted from the rotary spray head, thereby preventing the accumulation of waste material on the side of the tank opposite the rotary spray and creating a greater degree of fines and also producing a more irregular fine, substantially as described.

MERL H. MEIGHAN,
KENNETH N. BROWN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,310,590	Marette	Feb. 9, 1943
2,330,038	Ervin	Sept. 21, 1943
2,384,892	Comstock	Sept. 18, 1945