E. FUCHS.

APPARATUS FOR CHARGING INGOTS IN OVENS.

APPLICATION FILED AUG. 10, 1917.

1,290,163.

Patented Jan. 7, 1919.

2 SHEETS—SHEET 1.

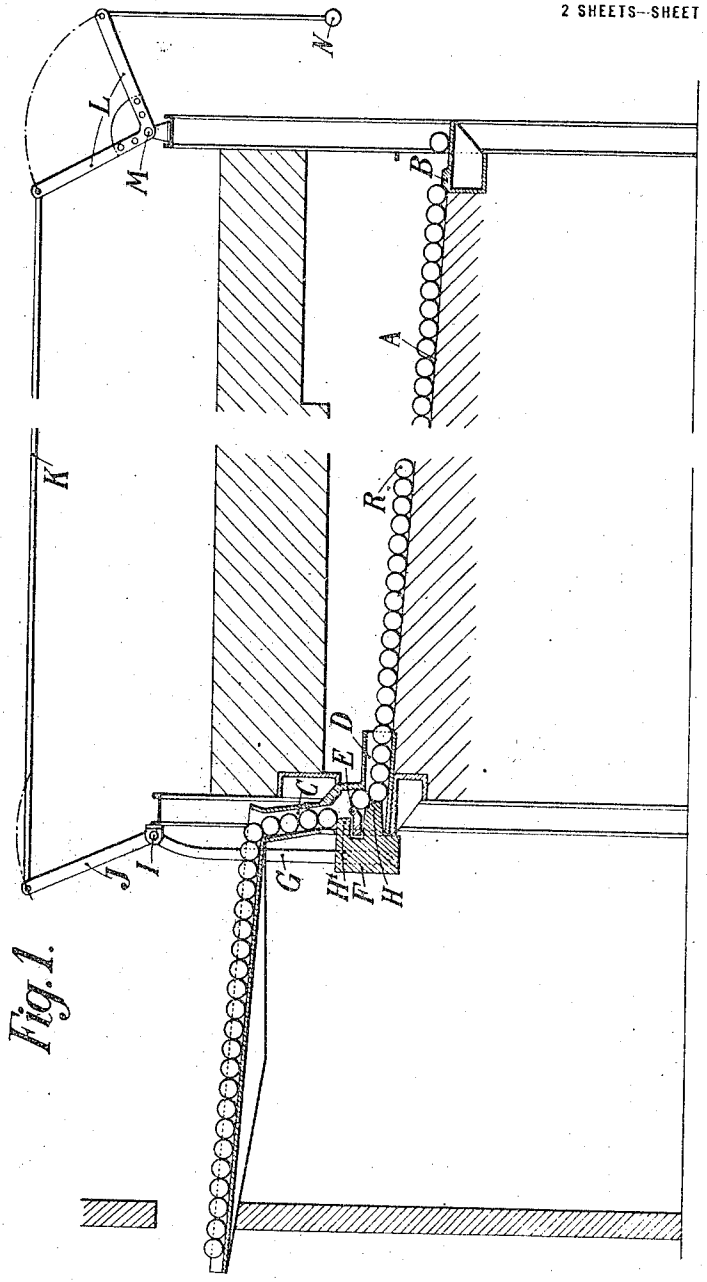


Fig. 1.

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Fig. 3

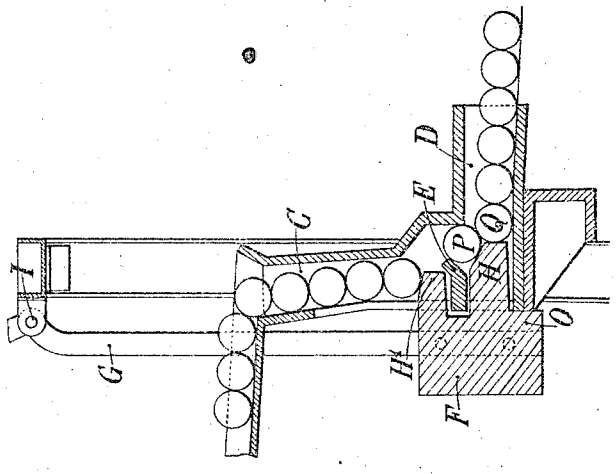
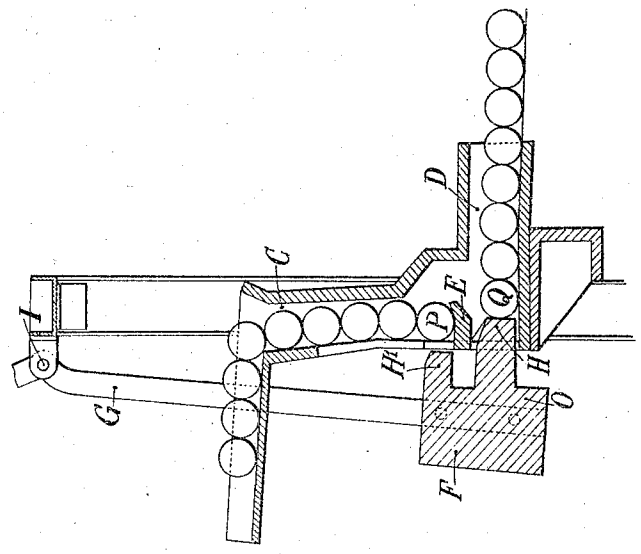


Fig. 2



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR CHARGING INGOTS IN OVENS.

1,290,163. Specification of Letters Patent. Patented Jan. 7, 1919.

Application filed August 10, 1917. Serial No. 185,498.

To all whom it may concern:

Be it known that I, ERNEST FUCHS, of 15 Rue Gustave Sandoz, at Billancourt, Department of the Seine, France, citizen of the French Republic, have invented certain new and useful Improvements in Apparatus for Charging Ingots in Ovens; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention has for its object to provide an arrangement for automatically charging into an oven cylindrical objects or ingots of uniform size which enables the same pieces heated to be discharged automatically at the other end of the oven.

The principal part of the apparatus consists of a pivoted block adapted to strike a row of articles placed side by side horizontally in the oven along the whole length of the bottom thereof, the blow given by said block advancing the whole row of objects and bringing about at the withdrawing end of the oven and at each stroke the exit and withdrawal of the last ingot of the row.

The said block is of suitable form so as to be capable at the same time of regulating the supply of ingots placed in a charging cone in the form of a funnel.

The apparatus may be operated from a distance manually by the workman handling the discharge and the disposal of the heated objects.

The accompanying drawings show by wav of example an installation comprising the above apparatus especially adapted for the re-heating of shells which it is desired to temper.

Figure 1 is a view in vertical section illustrating the oven, the ingots and the apparatus in question.

Fig. 2 is a detail view showing the block in contact with the first ingot of the horizontal row.

Fig. 3 is a similar view in which the block is at the extreme point of its stroke.

In Fig. 1 A indicates the bottom of the oven on which the ingots rest. The bottom A is slightly inclined toward the exit so as to facilitate the movement of the ingots. At its lower extremity a sill B maintains the row of ingots which are placed side by side as far as the upper extremity or charging orifice of the oven floor. The charging apparatus comprises a vertical passage or charging cone C combined with a horizontal guide D, and includes a part E forming a rest which supports the pile of ingots placed in the vertical passage.

A block F of suitable weight, mounted on a lever G pivoted at I to the upper portion of the oven, carries two projecting parts H and H^1 (see Fig. 2) of such a length that the part H will strike the first ingot Q of the row to be heated before the part H^1 comes in contact with the ingot P placed on the rest E.

The lever G, pivoted at I, is prolonged by a lever J, pivoted to a rod K, connected at its other end to a bell-crank lever L, capable of rotating about a pivotal point M.

A rod with a handle N, within reach of the workman supervising the tempering operation, enables, by the aid of the pivoted system described above, a pendulum movement away from the discharging apparatus to be imparted to the block F of such extent that on being released by letting go the handle N the block strikes the first ingot of the row sufficiently hard to displace all the ingots on the floor of the oven.

A stop O limits the amplitude of the movement in order that the displacement of the horizontal row may be exactly equal to the diameter of the ingots.

Owing to the projecting part H^1, the block, toward the end of its stroke, knocks the ingot P off the rest E on which it is placed. At this time the vertical pile which is in the passage C is kept up by the projection H^1, (see Fig. 3) and the ingot P, which tends to go to the back of the row, is stopped by the extremity of the projection H of the hammer.

By again actuating the handle N the hammer is withdrawn, which enables the ingot P to go into position at the back of the row and the ingots which are in the vertical passage to again rest on the piece E. The relative position of the ingots to be charged and the ingots already in the oven is the same as at the commencement of the operation, and another pull on the handle N suffices to cause another ingot to enter the oven.

It must be noted that at each entry of a new ingot into the oven a corresponding automatic exit of a heated piece takes place at the other extremity.

The invention is not, of course, limited to the apparatus described above, and it must be understood that the right is reserved to apply modifications, principally in the control mechanism of the block F.

I claim:

1. The combination with an oven having an ingot supporting surface, of an abutment at one end thereof, a feed hopper at the opposite end thereof arranged to feed a row of ingots to the supporting surface, means to impart a blow to the last ingot of said row, said means being arranged to permit an additional ingot to pass to said row, and means for causing said ingot to pass to said last mentioned means.

2. The combination with an oven having an ingot supporting surface, of an abutment at the exit end thereof arranged to engage the last of a row of ingots, a hopper for feeding the ingots to said surface, means for supporting a supply of ingots above said row, means for imparting a blow to the last ingot of the row, and means for initiating the movement of the lowermost of the supply of ingots to the row of ingots.

3. The combination with an oven having an ingot supporting surface, of an abutment at one end thereof, a hopper at the opposite end thereof having a passageway communicating with said supporting surface, a lip in said hopper for supporting a supply of ingots and a block having means adapted to engage the endmost ingot in said passageway to impart a blow thereto and having means to engage the lowermost ingot on said lip to cause the same to drop to said passageway.

In testimony whereof I affix my signature, in presence of two witnesses.

ERNEST FUCHS.

Witnesses:

CHAS. P. PRESSLY,

ALEXANDER BERTHOLL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."