E. O'CONNOR.

RETORT CHARGER.

APPLICATION FILED AUG. 21, 1917.

1,286,070.

Patented Nov. 26, 1918.

2 SHEETS—SHEET 1.

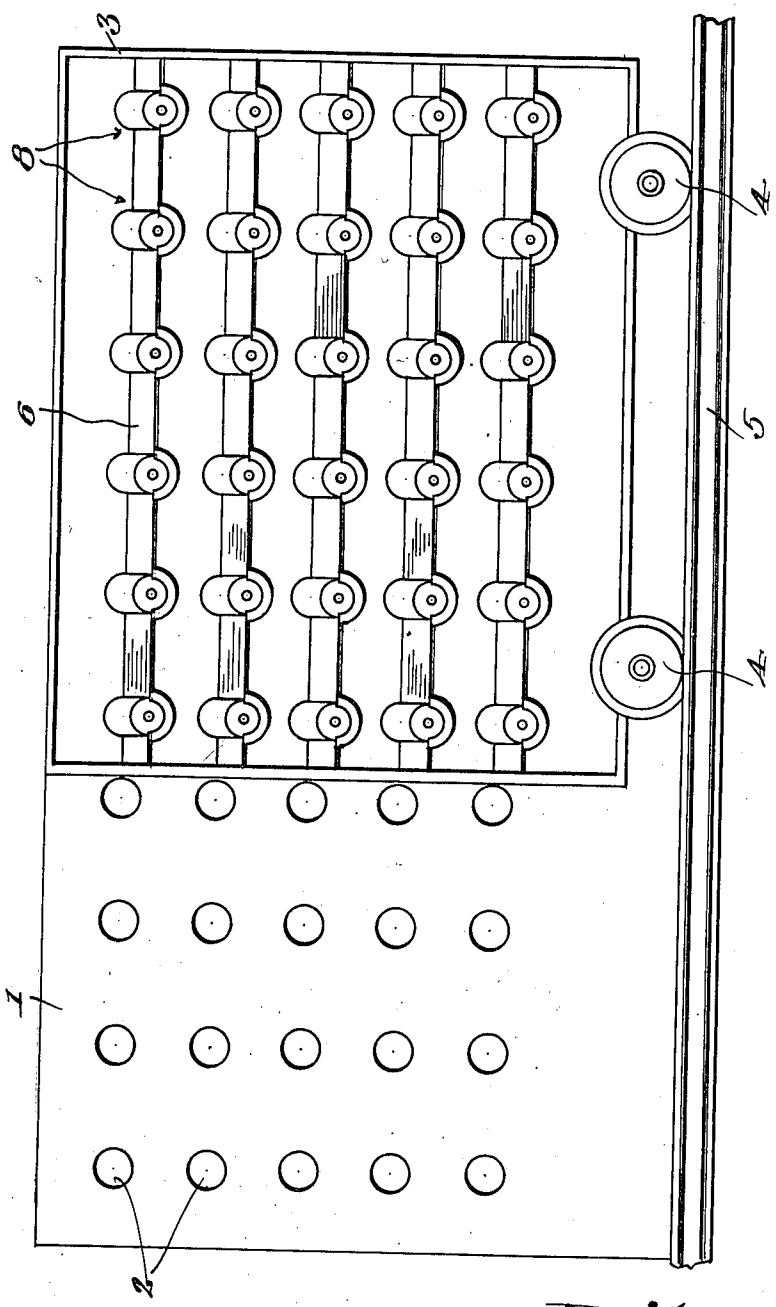


Fig. 1.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

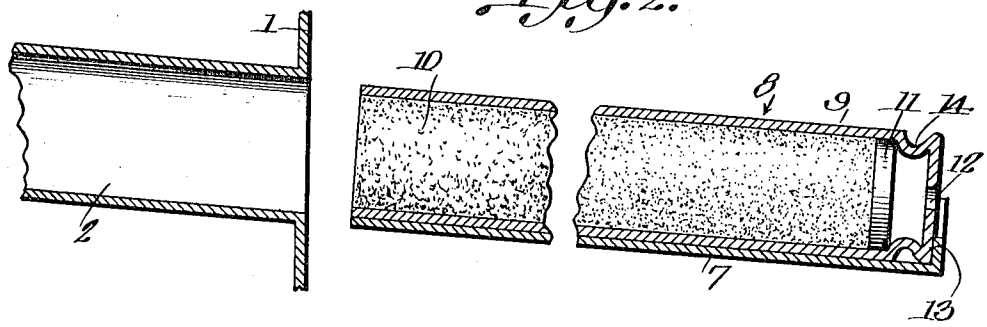


Fig. 3.

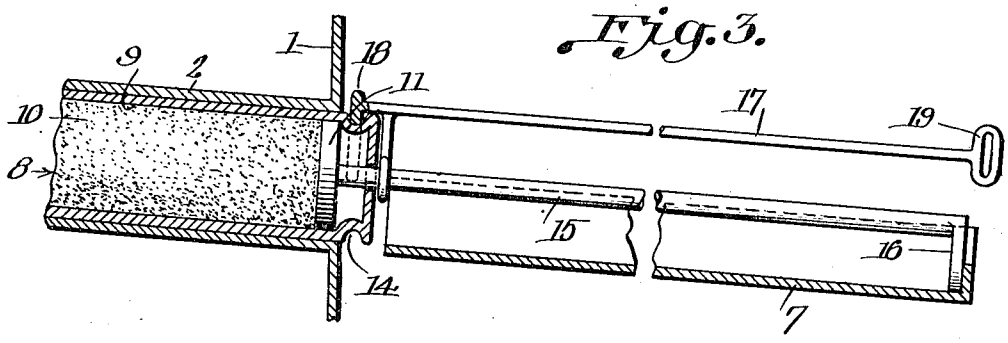
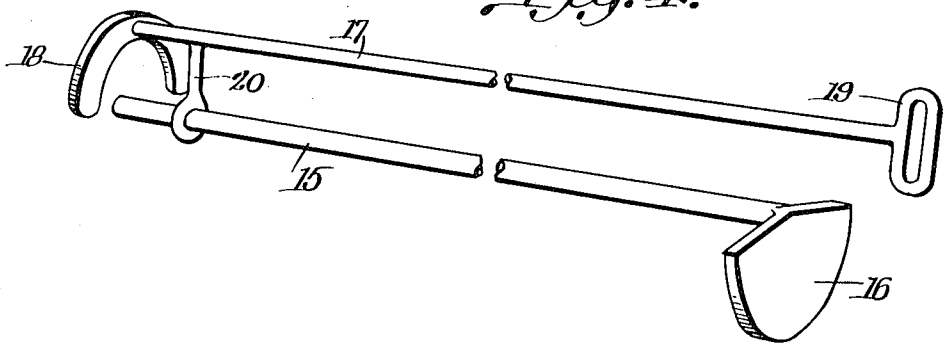


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWARD O'CONNOR, OF PITTSBURG, KANSAS.

RETORT-CHARGER.

1,286,070. Specification of Letters Patent. Patented Nov. 26, 1918.

Application filed August 21, 1917. Serial No. 187,374.

To all whom it may concern:

Be it known that I, EDWARD O'CONNOR, a citizen of the United States, residing at Pittsburg, in the county of Crawford and State of Kansas, have invented a new and useful Retort-Charger, of which the following is a specification.

The present invention relates to a device for charging retorts, and aims to provide a novel and improved appliance for charging zinc smelting furnaces, or the like, with ore, in a convenient and efficient manner, to eliminate the laborious methods now used of introducing the ore in the retort with a special hand tool or scoop.

The invention has for its object the provision of novel and improved means for introducing and depositing the charge in the retort, whereby to facilitate and simplify the operation.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a front view of the retort charger in front of the furnace.

Fig. 2 is a longitudinal section of one of the charging cartridges in position to be moved into the corresponding retort, portions being broken away.

Fig. 3 is a similar view showing the cartridge moved into the retort, and the implement in place for withdrawing the cartridge shell or receptacle and retaining the charge within the retort during such withdrawal.

Fig. 4 is a perspective view of the implement.

The zinc smelting furnace 1, which is illustrated diagrammatically, is provided with the rows of retorts 2 in which the ore is ordinarily introduced by a special scoop or implement, which involves considerable labor, and the ore is heated within the retort by the flames or products of combustion which circulate around them within the furnace. The present device is intended to conveniently charge the retorts, and reduce the labor and time necessary for this operation.

In carrying out the invention, there is provided a truck or car embodying a suitable frame 3 supported by wheels 4 which travel on a track 5 extending in front of the furnace. This frame 3 carries vertically spaced longitudinal shelves 6, preferably inclined slightly transversely thereof to correspond with the slight inclination of the retorts 2, in accordance with common practice. The shelves 6 are each provided with a longitudinal series of transverse depressions 7 for a row of charge-holding cartridges 8, whereby when the car is moved into place with the cartridges therein, the cartridges will register with the retorts and can be readily introduced or forced therein. Thus, the car can be filled with charged cartridges at one point, and then moved in front of the furnace to enable the cartridges to be slid into the retorts for charging the latter. The construction and manipulation of each cartridge is the same, and a description of one will suffice for all.

Each cartridge 8 embodies a receptacle or shell 9 having one end open to enter the retorts 2, and the receptacle contains the charge 10 of ore, a plug or disk 11 fitting slidably within the receptacle to provide a false bottom for the charge of ore. After the plug 11 is placed within the receptacle, the ore can be readily inserted within the receptacle, and the receptacle then placed in the car or truck. The other end of the receptacle 9 has an aperture 12 and the outer end of each depression or cartridge holder 7 is preferably provided with a stop flange 13 against which the outer lower end of the receptacle 9 rests, to hold it in place. The receptacle 9 has an annular groove 14 or other suitable means adjacent to its outer end, for the engagement of the implement for withdrawing or extracting the receptacle or shell after charging. It will be evident that when the receptacle 9 is slid into the retort, this will carry the charge with it into the

retort, and then by holding the plug or disk 11 and withdrawing the receptacle 9, this will deposit the charge in the retort.

A suitable implement, such as shown in Figs. 3 and 4, is used for withdrawing the receptacle 9, while the plug 11 is held to prevent the withdrawal of the charge with the receptacle. This implement as illustrated, embodies a retaining rod 15 insertible through the aperture 12 to bear against the plug 11, and provided with a head 16 or other suitable means to hold the rod in place while the receptacle is being withdrawn, said head 16 being adapted to seat in the depression 7 and bear against the stop flange 13, whereby to prevent the outward movement of the rod 15 and plug 11. The implement also includes a rod 17 for pulling the receptacle 9 out of the retort, the inner end of the rod 17 having a fork 18 or other suitable means to engage the groove 14 of the receptacle 9, and the outer end of the rod 17 having a handle 19, whereby when the fork 18 is engaged with the receptacle, the rod 17 can be pulled to withdraw the receptacle. The rod 17 is preferably provided with a guide 20 slidably engaging the rod 15, in order to guide the rod 17 and hold it in engagement with the receptacle during the withdrawal thereof. When the receptacle is slid into the retort, the rod 17 can be readily connected to the receptacle, and the rod 15 then inserted through the guide 20 and aperture 12, and its head 16 then placed behind the flange 13. Then, by pulling on the rod 17, this will withdraw the receptacle, while the rod 15 holds the plug or disk 11, to retain the charge in the retort. After the receptacle has been withdrawn from the retort back into the car, the implement can be readily removed and employed for the next cartridge.

The present apparatus, therefore, enables the retorts to be conveniently charged, requiring much less labor and time than with ordinary methods.

Having thus described the invention, what is claimed as new is:

1. A retort charger including a car, a shelf thereon having a transverse depression, a charge holding cartridge slidably mounted in the depression and insertible into a retort, and means for ejecting the charge from the cartridge and into the retort.

2. A retort charging apparatus including a car, a shelf thereon having a transverse depression, a charge holding cartridge slidably mounted in the depression and having an annular groove, said cartridge being insertible into a retort, means for holding the charge against withdrawal from the retort, and means engaging the grooved portion of the cartridge for withdrawing the cartridge from the retort and into the depression in the shelf.

3. A retort charger embodying cartridge-holding means to register with a retort, a cartridge held by said means including a receptacle for the charge and a false bottom slidable within the receptacle to hold the charge in the retort, a rod to bear against said false bottom and having means to engage the cartridge-holding means for holding the false bottom in place while the receptacle is withdrawn from the retort, and means engagable with the receptacle for withdrawing it from the retort back into the cartridge-holding means.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

EDWARD O'CONNOR.

Witnesses:
TOM WILLIS,
DENNIS MOYER.