No. 668,952.

Patented Feb. 26, 1901.

G. C. CARSON.

DESULFURIZING COPPER MATTE.

(Application filed May 4, 1900.)

(No Model.)

Fig. 1.

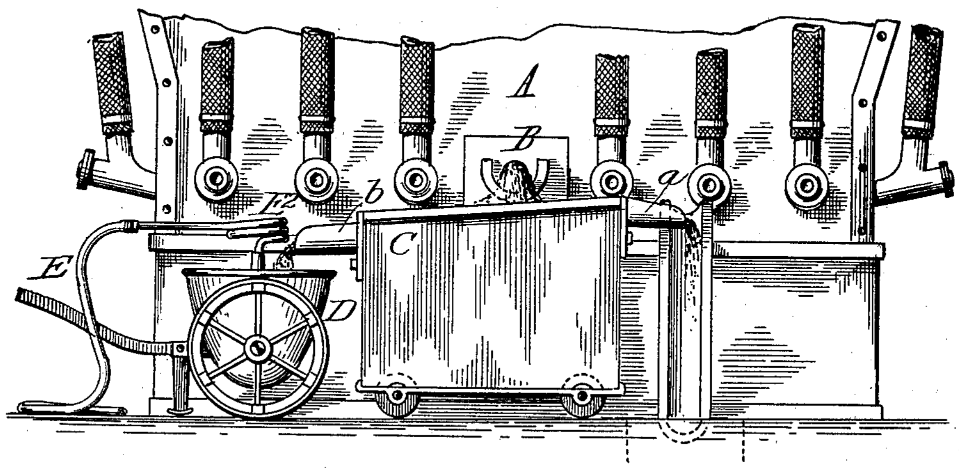
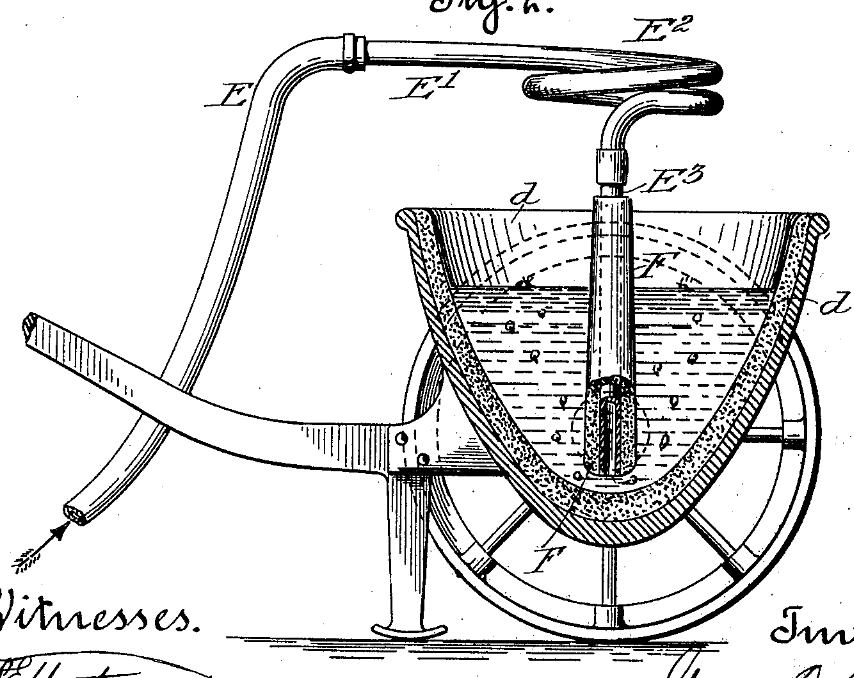


Fig. 2.



Witnesses.

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DESULFURIZING COPPER MATTE.

SPECIFICATION forming part of Letters Patent No. 668,952, dated February 26, 1901.

Application filed May 4, 1900. Serial No. 15,534. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. CARSON, a citizen of the United States, residing at Castella, in the county of Shasta and State of California, have invented certain new and useful Improvements in Desulfurizing Copper Matte, of which the following is a specification.

My invention relates to the treatment of ores, such as those of copper and of lead, in order to obtain a metallic matte and to desulfurize the latter.

My object is to shorten the process and enable it to be carried out more economically. Such mattes which are strongly impregnated with sulfur are now usually shipped from the smelters to other points where they are treated in expensive converters built on a large scale for desulfurization.

By my invention the matte is desulfurized at the smelter and by simple and inexpensive apparatus.

In the drawings, Figure 1 is an elevation of part of a smelting-furnace with the desulfurizing apparatus in position. Fig. 2 is a section of the portable pot, showing the arrangement of the air-inlet pipe relatively thereto.

A represents a smelting-furnace of a well-known construction, and B is the outlet for the fused ore. The fused ore falls into the settler C, having at one side a slag-spout *a* and opposite a spout *b* for tapping the molten metal.

D is a pot mounted upon carrying-wheels and formed of metal with a refractory lining *d*.

E represents a pipe or hose, which is flexible and extends to any suitable apparatus for supplying air under pressure. To the end of the flexible hose is connected a metallic section E′, formed with a coil E^2 and terminating in a straight pipe E^3, which is inclosed in fireclay or other refractory substance, as shown at F.

The pot D is wheeled under the spout *b* and the matte tapped and allowed to run into it. An operator holding the air-hose drops the vertical end into the pot close to the bottom and so directs the air-current into the contents. The admission of air forms sulfur dioxid, which escapes in fumes from the surface of the metal, while the agitation enables impurities, such as iron and silica, to rise and float upon the surface, from which they can be removed. Thus at one operation the molten metal can be desulfurized as it leaves the smelter, successive pots being run under the settler-spout as frequently as required. The expense of shipping the matte to converting plants and the additional expense of remelting it for desulfurizing are saved. Great economy therefore results from this method of treatment, which is a point of extreme importance in the treatment of ores. The saving of time by means of the continuous treatment is also apparent and has an important bearing upon the commercial economy of the system employed. The coil heats the blast, and in the event that the tip of the blast-jet should come in contact with the metal at the bottom of the pot the hot blast would not chill or agitate the bullion like the cold one.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In combination with a pot for receiving molten metal, a flexible hose for conveying air, in combination with a rigid extension thereof having a coil, and adapted to be inserted into said pot and the metal contained therein, said coil being arranged over the pot.

In testimony whereof I have affixed my signature, in presence of two witnesses, this 4th day of April, 1900.

GEORGE C. CARSON.

Witnesses:
C. I. MOOERS,
THOS. J. LOFTUS.