UNITED STATES PATENT OFFICE.

OTTO BALTIN, OF LIPINE, GERMANY.

PROCESS FOR SMELTING METALLIC ORES.

1,166,171. Specification of Letters Patent. Patented Dec. 28, 1915.

No Drawing. Application filed May 28, 1914. Serial No. 841,576.

To all whom it may concern:

Be it known that I, OTTO BALTIN, a citizen of Germany, and resident of Lipine, Silesia, Germany, have invented certain new and useful Improvements in Processes for Smelting Metallic Ores, of which the following is a specification, such as will enable others skilled in the art to which it appertains to make and use the same.

The process of smelting metallic ores which are pressed into the form of bricks, as known, effected in muffle charges, and owing to the use of pitch as a binding agent in the manufacture of these bricks, obnoxious pitch vapors are caused to rise during the process of smelting which often trouble the workmen to such an extent that they find it impossible to properly perform their work in attending to the furnace.

According to this invention this drawback is removed or at least greatly reduced by the employment of other binding agents which bind quickly and satisfactorily either by themselves or in conjunction with a moderate quantity of pitch. Thus the employment of pitch and the drawback resulting therefrom are either entirely dispensed with or are considerably reduced.

It has previously been proposed in connection with brick making to employ other binding media in the manufacture of briquets or so-called patent fuel, for example cement and pitch as binding agents have been used. Cement, is however, a binding agent of very slow action and is therefore unsuitable for binding bricks which are to be made of metallic ores, as it is also unsuitable for use in many other brick presses.

The process according to this invention is distinguished from the aforesaid processes in that gypsum is used as a binding agent in the manufacture of metallic ore bricks. According to the invention gypsum may be used either by itself or with an addition of pitch. Gypsum is a binding agent which works very quickly and it is therefore particularly adapted to be used in such presses in which the metallic ores are pressed into egg-shaped blocks. A further advantage of gypsum lies in the fact that it imparts a great stability to the bricks which is maintained when the latter are subjected to the heat in the furnace. Thus a muffle charge of bricks in which gypsum has been used as a binding agent can be very easily worked off in the furnaces.

In such cases where celc pitch is used as a binding agent, an addition of gypsum will be found extremely useful. Ordinarily celc pitch is hygroscopic and bricks in which celc pitch only has been used as a binding agent are not weather proof. An addition of gypsum, however, reduces the hygroscopic nature of the celc pitch and thus increases the weatherproofness of the bricks very considerably.

Gypsum by itself may also be advantageously used as a binding agent in the manufacture of bricks from metallic ores without any addition whatever of pitch or celc pitch.

What I claim and desire to secure by Letters Patent is:—

1. A briquet comprising a compressed mixture of ore, gypsum and pitch.

2. A briquet comprising ore, celc pitch and gypsum.

In witness whereof I have hereunto set my hand in presence of two witnesses.

OTTO BALTIN.

Witnesses:
LOUIS A. KATZ,
ERNST BLIRMS.