

G. B. BROWN.

METHOD OF RECHARGING SMELTERS' CRUCIBLES.

(Application filed Apr. 3, 1901.)

(No Model.)

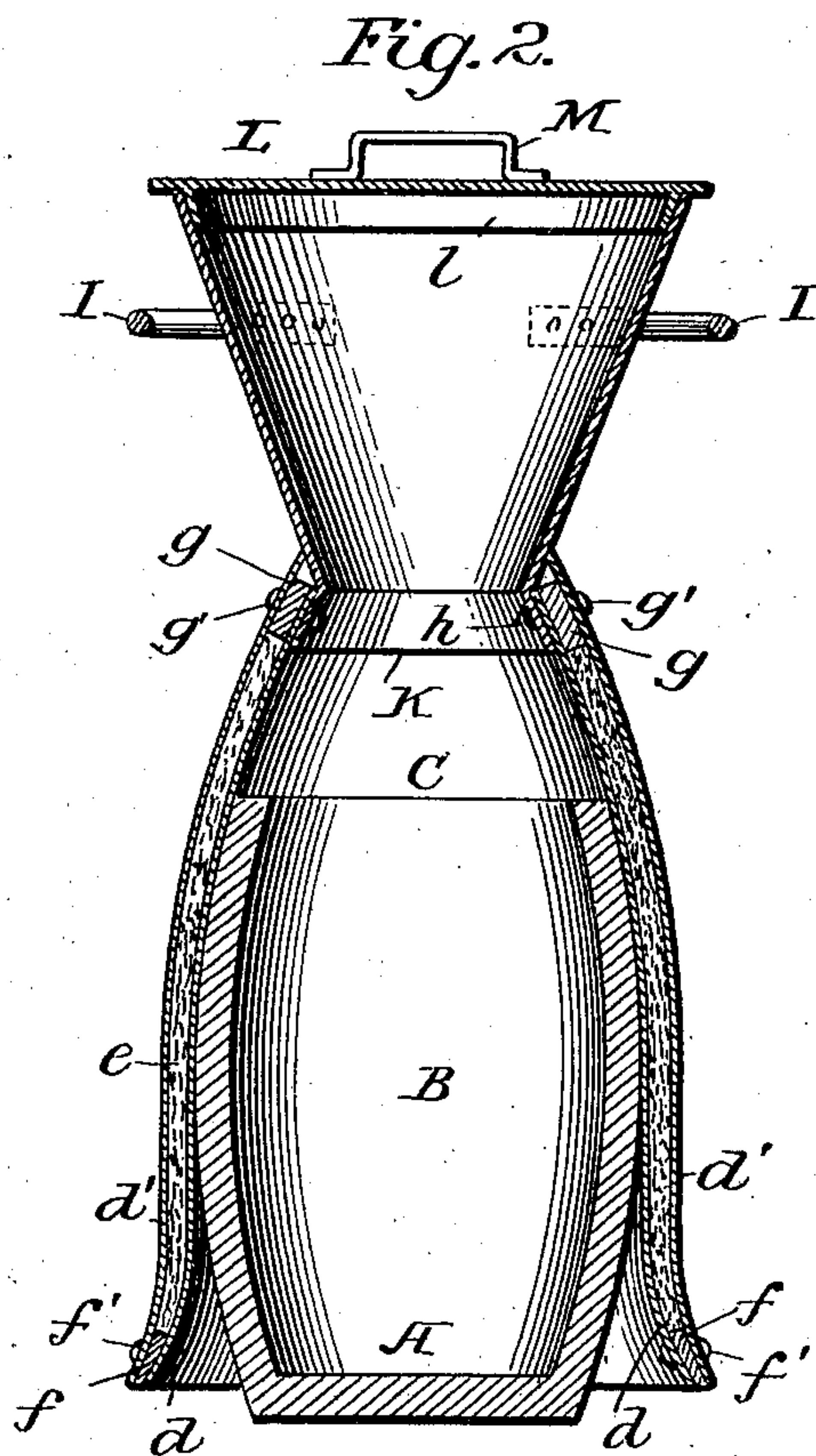
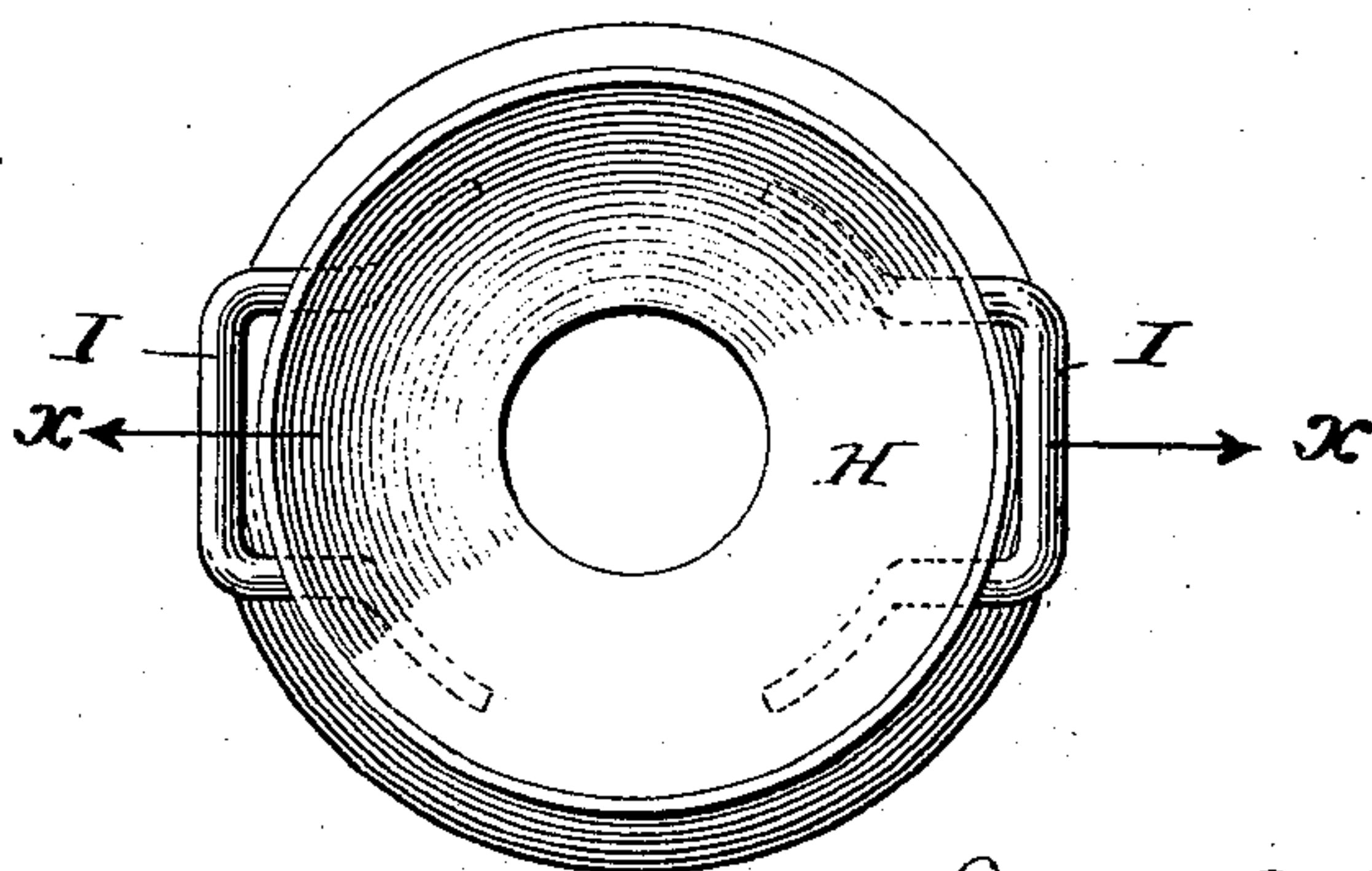


Fig. 1



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GEORGE B. BROWN, OF READING, PENNSYLVANIA, ASSIGNOR TO CARPENTER STEEL COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

METHOD OF RECHARGING SMELTERS' CRUCIBLES.

SPECIFICATION forming part of Letters Patent No. 711,468, dated October 21, 1902.

Application filed April 3, 1901. Serial No. 54,219. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. BROWN, of Reading, Pennsylvania, have invented a new and useful Method of Recharging Smelters' Crucibles, of which the following is a specification.

The object of my invention is to guard smelters' crucibles from the injury to which they are liable from contraction if they are permitted to materially cool down after having once been heated.

To that end my method consists in applying a protecting-shield to the hot crucible immediately after its molten contents have been poured out, introducing the new charge into the crucible, and then removing the protecting-shield and replacing the newly-charged crucible in the smelting-furnace.

Mechanism suitable for the accomplishment of my object, which is herein shown and described merely for the purpose of illustration, forms the subject of my pending application, Serial No. 52,140, filed March 21, 1901, in which the several features of said mechanism are specifically claimed. The said mechanism embraces a protector consisting of a hollow, tapering, and preferably asbestos-filled shield, which is adapted in part to fit the upper portion of an ordinary barrel-shaped crucible and which projects somewhat above the mouth of the crucible with a continuing taper and at its upper end is united to the lower end of a hollow truncated cone, which serves as the funnel through which the charge is fed into the crucible. The funnel is provided on the opposite sides with handles for the application of manual or other power, by which the shield and crucible are shaken. Preferably the lower end of the shield is given a flaring shape to facilitate its application to the crucible.

My mechanism is advantageous in a variety of ways. It prevents the loss of heat by radiation from the crucible, it protects the bystanders from the heat of the hot crucible, it presents a convenient receptacle for the charge, and its handles facilitate the shaking by which the charge is made to settle down

from the funnel and in the crucible. Finally, it is susceptible of easy and rapid application, because being what may be called a "drop-shield" its seating upon the hot crucible is assisted by its own gravity.

The accompanying drawings, illustrating the improvement applied to a crucible, are as follows:

Figure 1 is a top view with funnel-cover removed. Fig. 2 is a central vertical section taken through the plane indicated by the dotted line xx on Fig. 1.

The drawings are designed to represent an ordinary graphite crucible having a flat bottom A and an approximately barrel-shaped body B with an open mouth C. The shield D is preferably composed of an inner comparatively thin iron shell d and an outer thicker iron shell d' , inclosing a sheet of asbestos e . A ring f , interposed between the shells d and d' , is perforated to admit the passage through it of the rivets f' , by means of which the members of the shield are secured to each other at the bottom. A similarly-perforated ring g admits the rivets g' , by which the upper ends of the shells d and d' are fastened together and to the suitably-perforated flaring lower end h of the funnel H. Handles I I are secured to opposite sides of the funnel H, preferably near its upper end, in order to afford ample leverage for tilting the shield and crucible back and forth for the purpose of settling down the charge in the crucible. The shield is intended to fit the upper tapering part of the body of the crucible and extend downwardly from the part of the body of the crucible having the largest diameter to a plane suitably higher than that of the floor upon which the crucible rests. The lower end of the shield is preferably formed with the outward flare K, which assists in the guidance of the shield downward upon the hot crucible, and which by reason of the body of air between it and the lower part of the crucible is especially effective in protecting the bystanders from the heat radiating therefrom.

Although not absolutely essential, it is pre-

ferred to so proportion the diameter of the upper end of the shield and the bottom of the funnel that the charge in falling will be directed toward the middle of the mouth of the
5 crucible.

It will be perceived that the shield, which is easily applied by merely lowering it upon the crucible, is also easily detached therefrom by raising it.

10 While the mechanism herein described is that which I prefer, I do not wish to be understood as limiting myself to its use, because the essential features of my method would be practiced by the prompt application of any
15 form of protecting-shield to the hot crucible and the recharging of the shielded crucible

preparatory to the introduction of the newly-charged crucible into the smelting-furnace.

What is claimed as the invention is—

The herein-described method of recharging 20 smelters' crucibles, the same consisting essentially in applying a protecting-shield to the hot crucible immediately after its molten contents have been poured out and then recharging the shielded crucible preparatory to the 25 removal of the shield and the introduction of the newly-charged crucible into the smelting-furnace.

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