

C. B. Tatham,

Making Shot.

N^o 23,202.

Patented Mar. 8, 1859.

Fig: 1.

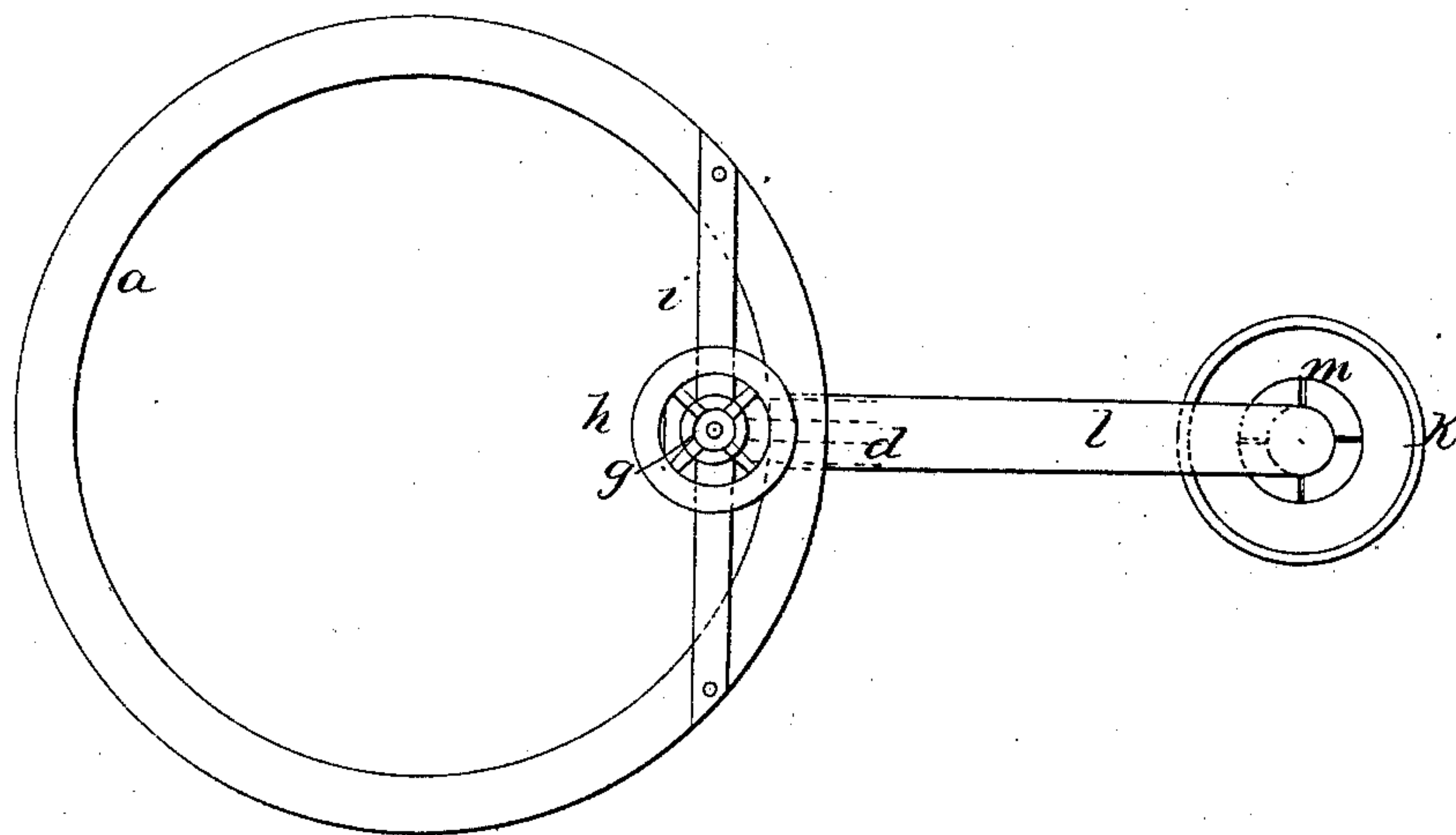
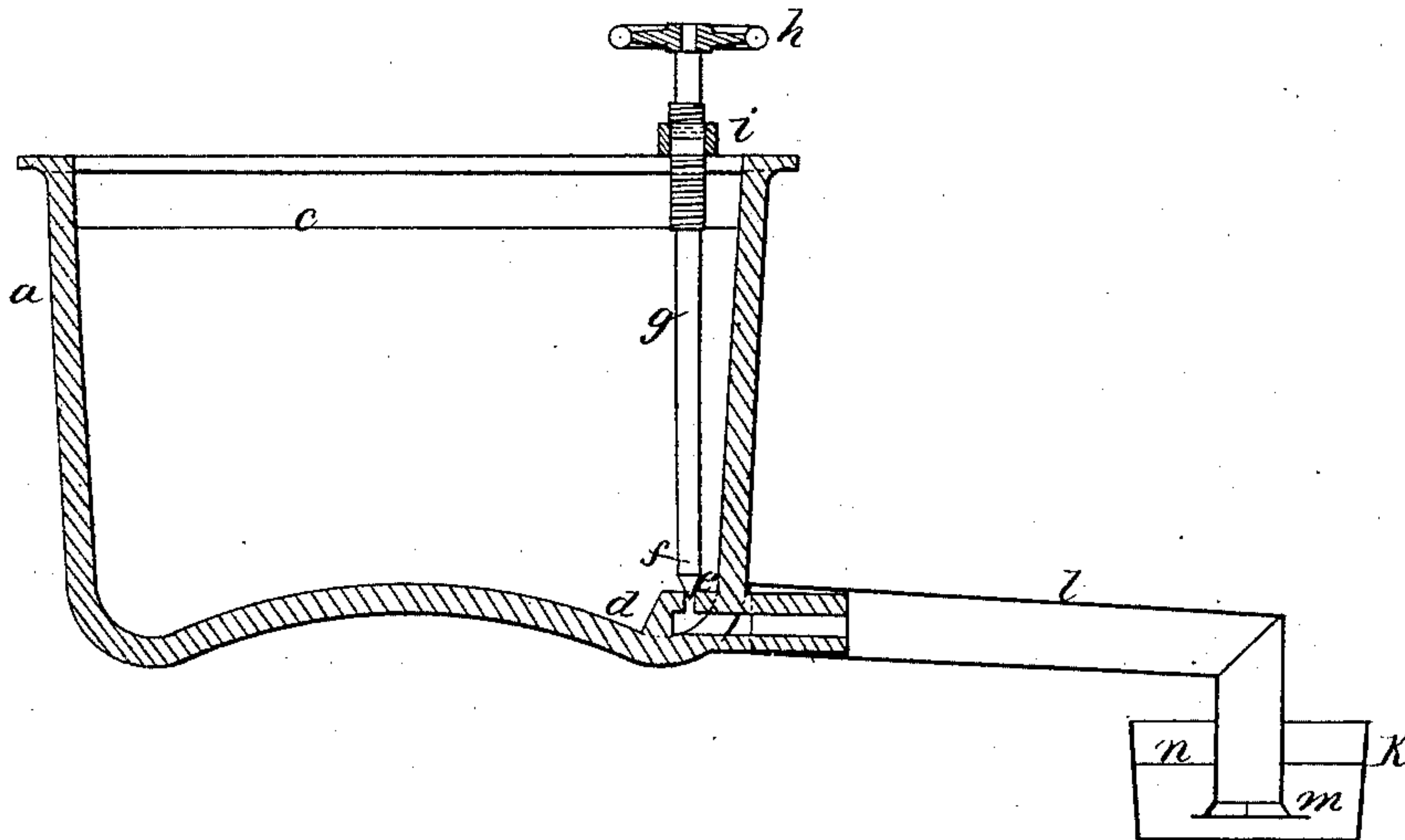


Fig: 2.



Witnesses;

John H. Bishop
Andrew De Laen

Inventor;

Chas. B. Tatham
"

UNITED STATES PATENT OFFICE.

CHARLES B. TATHAM, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN MANUFACTURE OF SHOT.

Specification forming part of Letters Patent No. 23,202, dated March 8, 1859.

To all whom it may concern:

Be it known that I, CHARLES B. TATHAM, of the city of Brooklyn, Kings county, and State of New York, have invented a new and useful Improvement in the Apparatus for Dropping the Metal in the Manufacture of Drop-Shot; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan, and Fig. 2 a vertical section, of the said improved apparatus.

The same letters indicate like parts in all the figures.

So far as I am informed the usual mode of procedure is to melt the metal in a suitable melting-pot, in which it is tempered by mixing therewith a suitable quantity of arsenic, that it may rapidly congeal or solidify when dropping through the air into the water below. By the side of the melting pot or kettle, and at the required height above the water into which the shot is to drop, there is a "set-pan" or colender, the bottom of which is perforated with holes of a suitable size, covered over with a layer of dross so placed on the said perforated bottom as to prevent the molten metal from running out too rapidly. The molten metal is dipped out of the melting-pot by a hand-ladle, and carefully poured onto the dross in the set-pan or colender, and thence, finding its way through the dross to the perforations in the bottom, escapes therefrom in drops, which in passing through the air to the water below assume the required spherical form in solidifying. As it is important that the molten metal should not be too hot, it frequently happens that it loses its heat, and to prevent it from solidifying in the set-pan the workman is required to ladle portions of it back into the melting pot or kettle to reheat it. This operation is very laborious, particularly in hot weather, and is frequently attended with loss of time and waste of fuel.

The object of my invention is to save the labor and avoid the waste of time and fuel above indicated; and to this end my said invention consists in connecting the set-pan or perforated colender with the melting pot or vessel containing the molten metal by means of a conductor governed by a valve, so that the metal shall run directly into the set-pan, the

valve enabling the workman readily to control and regulate the flow thereof.

In the accompanying drawings, *a* represents the melting-pot, which is to be mounted on a furnace in the usual manner, but which may be otherwise provided with suitable means for melting the metal and keeping it in a molten state. The line *c* indicates the surface of the molten metal. At the bottom of this pot or kettle there is a short spout, *d*, forming part of the conveyer, and the bore thereof within the pot is formed as to constitute a valve-seat, *e*, to which is fitted a conical valve, *f*, on the lower end of a rod, *g*, extending up above the upper edge of the pot, where it is provided with a hand-wheel, *h*. This rod is threaded near its upper end, and fitted to a suitable nut in a cross-bar, *i*, secured to the top of the pot. By this means the workman can by turning the hand-wheel readily open the conducting-hole of the spout and regulate the size of the aperture to govern the flow of the metal from the pot. The set-pan or colender *k* is constructed, located, and charged in the usual manner with dross spread on the perforated bottom. An elbow-tube, *l*, termed the "conductor," is formed at one end so as to be readily put on and taken from the spout of the melting-pot, and its lower end hangs centrally in the set-pan, with its discharge end a little above the perforated bottom; and to prevent the stream of molten metal from disturbing the dross a disk or plate of metal, *m*, is attached to the conductor a little distance below its delivery end to spread the molten metal as it issues into the set-pan. The line *n* indicates the height at which the molten metal should be generally maintained in the set-pan.

Before opening the valve to begin the dropping operation the conductor should be heated to prevent the cooling and setting of the metal as it first runs through. The mode which I have practiced is to take it off and heat it in the furnace, and then replace it; but instead of this it may be surrounded by a jacket and heated air from the furnace caused to circulate around it. Any other suitable mode of heating may be adopted.

From the foregoing it will be seen that the operator is entirely relieved of the labor of pouring out the metal with a ladle, and that by simply operating the valve he can control and

regulate the flow of the metal as circumstances may require, and thereby avoid all waste; and although I have above described the mode which I have adopted of constructing the valve and the mechanism for operating it, and the manner of forming the spout and conductor, I do not wish to be understood as limiting my claim of invention to such mode of construction, as other and equivalent modes of construction may be substituted without changing the principle of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the melting-pot, the regulating-valve, the conductor, and the set-pan, substantially as herein described, for dropping shot, as set forth.

CHAS. B. TATHAM.

Witnesses:

WM. H. BISHOP,
ANDREW DE LACY.