W. Kelly,

Casting Hollow-Ware.

No. 7,810. Patented Dec. 3, 1850.

Fig. 1.

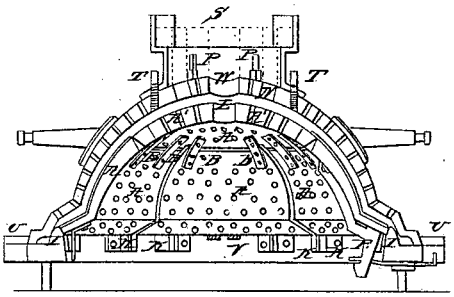


Fig. 2.

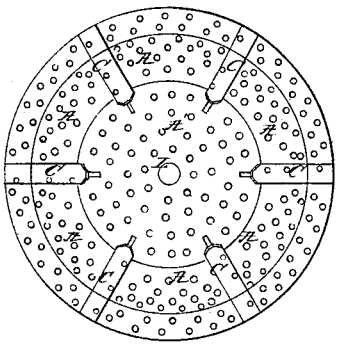


Fig 4.

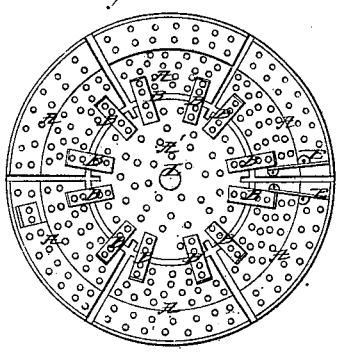


Fig. 3.

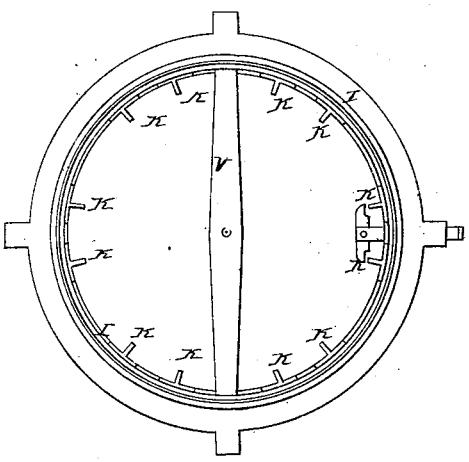


Fig. 5.

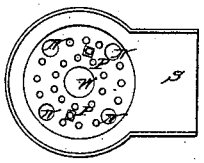


Fig. 7

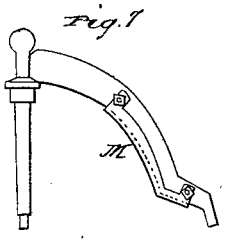
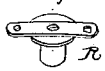


Fig. 6.



UNITED STATES PATENT OFFICE.

WILLIAM KELLY, OF EDDYVILLE, KENTUCKY.

IMPROVEMENT IN METALLIC FLASKS FOR CASTING LARGE KETTLES.

Specification forming part of Letters Patent No. 7,810, dated December 3, 1850.

To all whom it may concern:

Be it known that I, WILLIAM KELLY, of the town of Eddyville, Caldwell county, and State of Kentucky, have invented a new and Improved Flask or Mold for Casting Sugar Pans and Kettles; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 represents a vertical section through the center of the flask or mold, showing the proper position of the several parts when put together and ready for the introduction of the liquid metal to form a kettle. Fig. 2 is a plan or top view of the sectional or elastic core, showing the covering-plates arranged over the slits. Fig. 3 is a plan or top view of the foot-ring, showing the projecting ribs upon which the core rests, and the step or bearing for the sweep. Fig. 4 is a view of the sectional or elastic core inverted, showing the sections or wings and their attachment to the crown of the core. Fig. 5 is a plan showing the upper section of the cope containing the gates for the introduction of the melted metal. Fig. 6 is a perspective view of a short tube attached to the top of the cope, which forms the opening for the sinking-head in the loam when the cope is being covered. Fig. 7 is an elevation of the core-sweep, showing the counter-sweep.

My improvement consists in a certain construction of the iron flask in which are cast kettles. Iron molds are in general use for casting pans and kettles with the flange upward. I cast mine with the flange downward, and am thereby enabled to drive off the impurities contained in the iron in the same manner as they are expelled from the iron in a brick mold.

I construct my mold or flask in the following manner, differing from all other iron sugar pan or kettle molds heretofore used: The core, Figs. 1, 2, and 4, is an elastic or sectional iron skeleton provided with a sufficient number of vent-holes, and having the sides divided into a number of pieces or wings, A A, by being split at the flange and upward about three-fourths of the way to the crown A′. The wings are attached to the crown by iron straps B B, Fig. 4, which, having a slight elasticity, admit of the core contracting when the casting is shrinking. The spaces between the wings are covered with straps of thin iron, C C C, Fig. 2, to prevent the loam (with which the mold is covered) from getting between the wings. The core is held to its seat by two flexible hooks, E E, Fig. 4, fixed to the inside of the flange of the core, and passing under or hooking to the ribs of the foot-ring. The foot-ring, Fig. 3, is a circular iron plate having a vertical ring, I, connected to it, the sides of which ring run in nearly a perpendicular to the horizontal plane of the circular plate. On the inside of this ring are attached a number of ribs, K K, projecting toward the center. On these ribs are placed the core. A bar, V, is fixed across the circular plate or foot-ring, with a center hole in it. The sweep, Fig. 7, with which the core is covered, turns in this center, and also in the center hole, L, Figs. 1, 2, and 4, in the crown of the core.

The sweeps used in covering my molds are on the same principle as those generally used, excepting the counter-sweep M, Fig. 7, which is attached to the main sweep, and is used for striking on the first coat of loam and is then taken off.

My cope is in two parts or pieces, put together with bolts and keys, Fig. 1, the under part having bolts T T, with key-holes in them, Fig. 5, the upper part having lugs with holes in them to receive the bolts T. The under part of the cope is that in which the kettle or pan is cast. The upper part is that in which the sprue, gates, and part of the runner for the passage of the liquid metal is made. It consists of a cylindric chamber large enough in diameter to embrace the pouring-gates N N in the crown of Figs. 1 and 5. This cylinder or flask is about fifteen inches high, the upper half of which is about six inches in diameter larger than the under half. One side of the upper half is cut out, and a trough, S, Figs. 1 and 5, is made to branch from it at the opening. In this trough part of the runner is made. The under part of the cope, in which the kettle or pan is cast, is made in the same manner that iron copes are usually made, excepting that it has lugs or projections U U U around the the base corresponding with those on the foot-ring, Fig. 3, and also that the pouring-gates are in the crown instead of at the flange.

W is the gate for the sinking-head, being in the center of the crown of the cope.

P P are the bolts on which the cap-plate of

the short pipe, Fig. 6, is fixed. This cap-plate has a center hole in it for the cope-sweep to revolve in.

R, Fig. 6, is a short pipe attached to the cap-plate which forms the opening for the sinking-head in the loam, when the cope is being covered.

Having thus described my improved flask for casting kettles, what I claim as new and of my invention is—

The elastic iron core-supporter or inner part of the flask constructed of wings attached to the crown and provided with covering-strips, substantially as described.

WILLIAM KELLY.

Witnesses:
I. P. GRACEY,
JAMES S. ROWLAND.