S. Williamson,

Casting Carriage-Axle Boxes,

No. 39,189, Patented July 7, 1863.

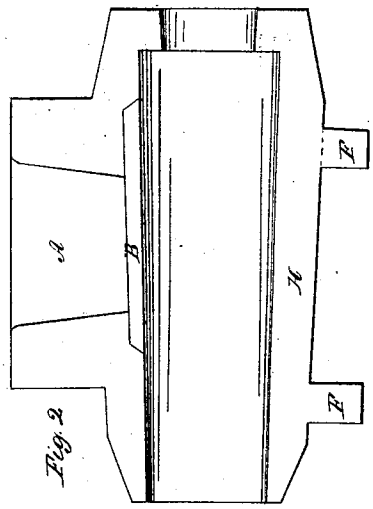

Fig. 2

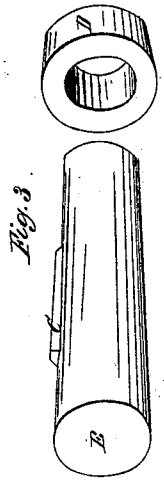

Fig. 3

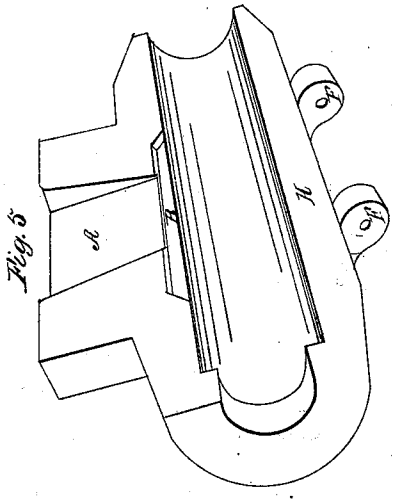

Fig. 5

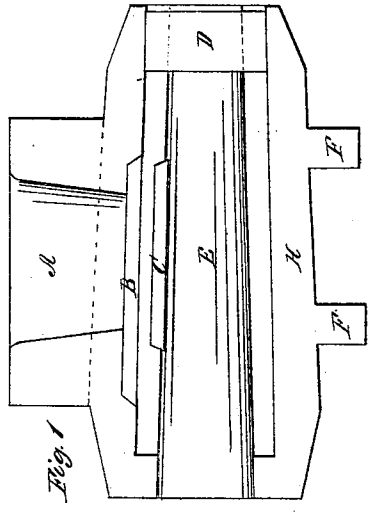

Fig. 1

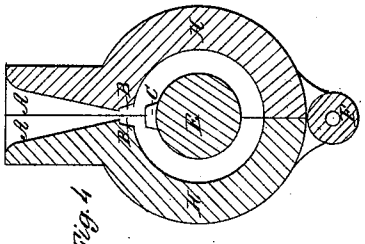

Fig. 4

UNITED STATES PATENT OFFICE.

SAMUEL WILLIAMSON, OF CINCINNATI, OHIO.

IMPROVEMENT IN CASTING BOXES FOR CARRIAGE-AXLES.

Specification forming part of Letters Patent No. **39,189**, dated July 7, 1863.

To all whom it may concern:

Be it known that I, SAMUEL WILLIAMSON, of the city of Cincinnati, county of Hamilton, State of Ohio, have invented a new and Improved Mode of Constructing Molds or Flasks for Casting Boxes for Carriage-Axles; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to letters of reference marked thereon.

The nature of my invention consists in constructing flasks or molds of cast-iron for casting boxes for carriage-axles and other like articles of a form and principle that will enable the operator entirely to dispense with the use of sand in the preparation for castings, except for the purpose and in the manner hereinafter specified; also to adapt the same mold or flask to the different length of box required, as hereinafter described.

To enable other skilled in the arts to make and use my invention, I will proceed to describe its construction and the principle of its operation.

I construct the shell of my flask or mold of cast-iron, in the form of a cylinder opening lengthwise through the center by means of hinges, and tapering to agree with the form of the box to be cast, in order that there may be an equal distribution of the iron compassing the flask or mold, so as to prevent an unequal expansion from the heat communicated to it during the operation of casting, which otherwise might cause the box cast in it to be imperfect.

In Figures 1 and 2, H H are geometrical views of the shell of my flask or mold. Fig. 2 represents the interior, with the chill or core E, Fig. 3, and the movable end of the flask D, removed. Fig. 2 represents the interior with the chill or core E and movable end D in their proper places when the mold is ready for use.

C, at Fig. 3, is a small sand core attached to the chill E, and placed directly under the gate, as shown at A, Fig. 1, on which the hot metal, when poured into the flask in the process of casting, first strikes, and is thus prevented from being chilled. The object of this arrangement is to receive upon it the iron when poured into the mold through the aperture or flat gate A, and cause it to spread and close more equally round the chill or core without injury to it.

B, Fig. 1, is an indentation in the flask or mold, made so as to form a rib on the outside of the box when cast, which is designed to prevent the box from turning round when driven in the hub.

D, Fig. 3, is a representation of the movable end of the flask or mold, which can be made of any length, the taper and diameter agreeing with the interior form of the flask or mold. The change in the length of the movable end D enables the operator to cast boxes of different length in the same mold or flask without any other change.

Fig. 4 is a transverse section of the flask or mold, showing the position, when closed, of the aperture or flat gate A A, rib B B, oil-chamber G, and chill or core E.

Fig. 5 is a geometrical view of one-half of the flask or mold, representing more clearly its form, and the hinges F F by which it is opened and closed.

Mode of operation: In preparing my flask or mold for use I coat over the inner end of the movable end D, as well as the permanent end of the flask, with any of the known substances used for like purposes, which is to prevent the too sudden chilling of the iron by coming in contact with the ends of the flask or mold, thereby preventing the box cast from injury by cracking. This done, I place the movable end D on the chill or core E at the required point to determine the length of the box to be cast, and place them in the flask or mold in the position shown in Fig. 1, then close the flask or mold around them, as shown by the transverse section, Fig. 4, which when secured in this position is ready for use.

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

The cast-iron flask H H, gate A, in combination with the sand core C, attached to the chill E, operating in the manner and for the purpose substantially as set forth.

SAM. WILLIAMSON.

Attest:

F. H. ROWEKANY,

J. R. BASSETT.