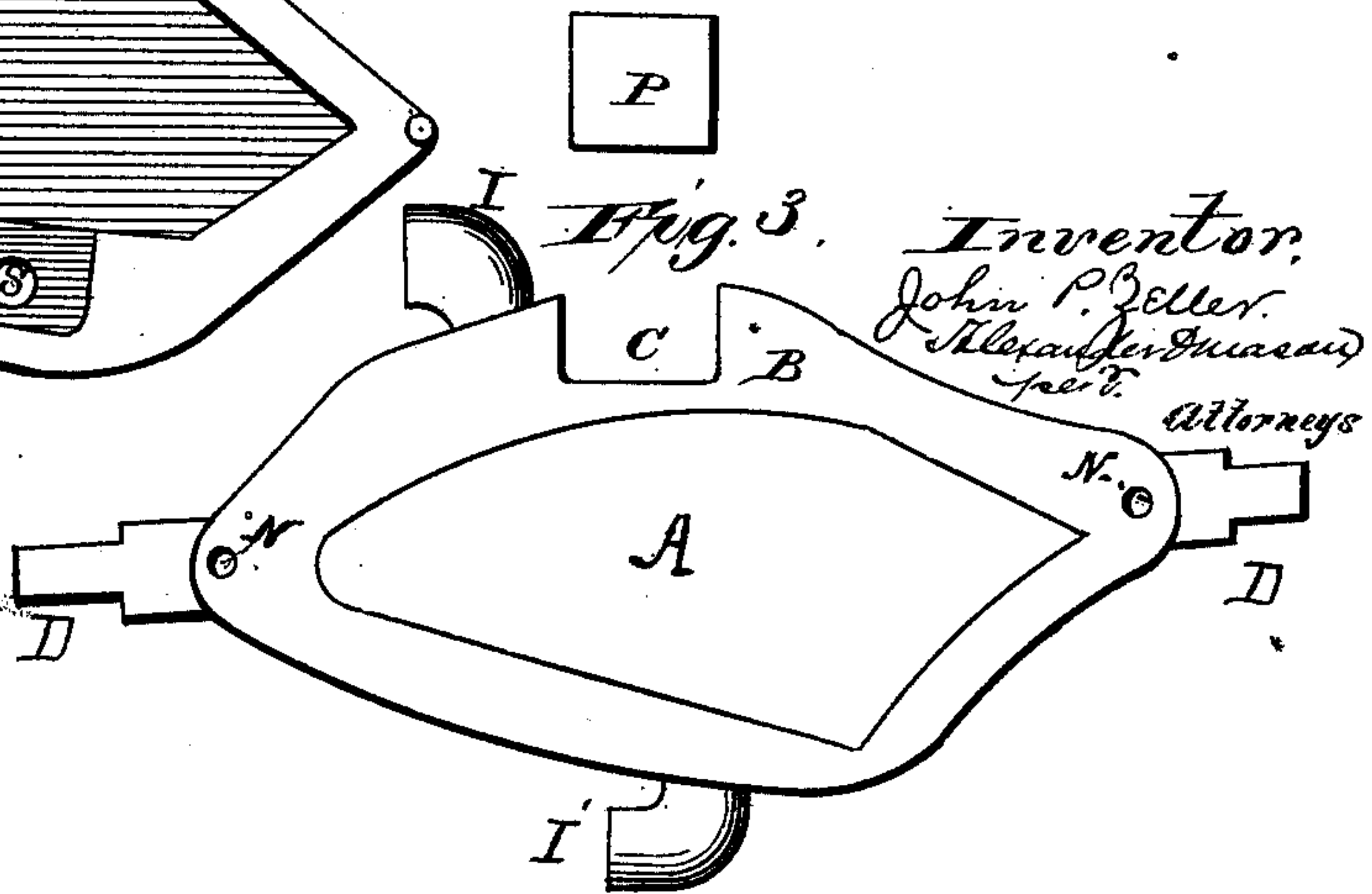
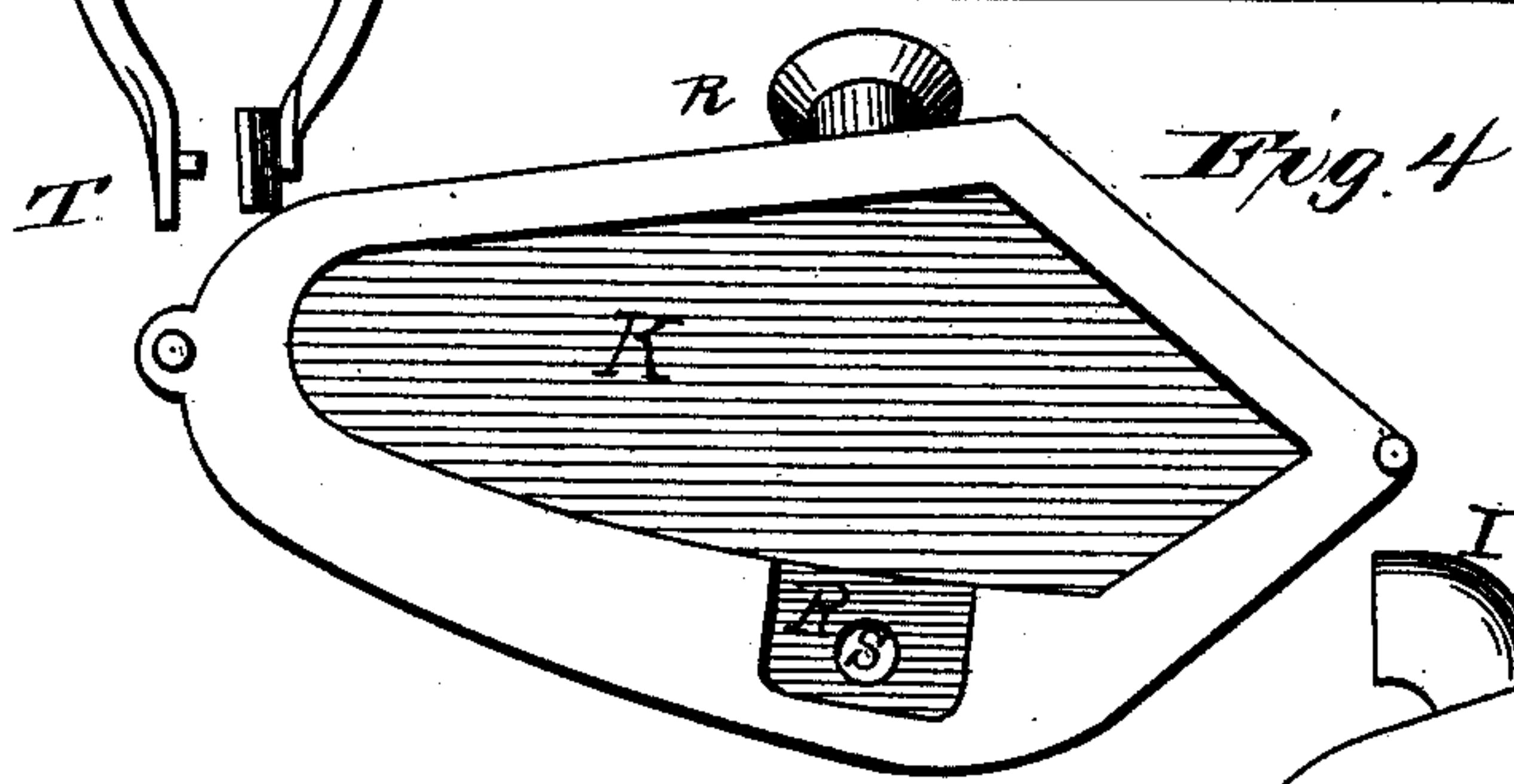
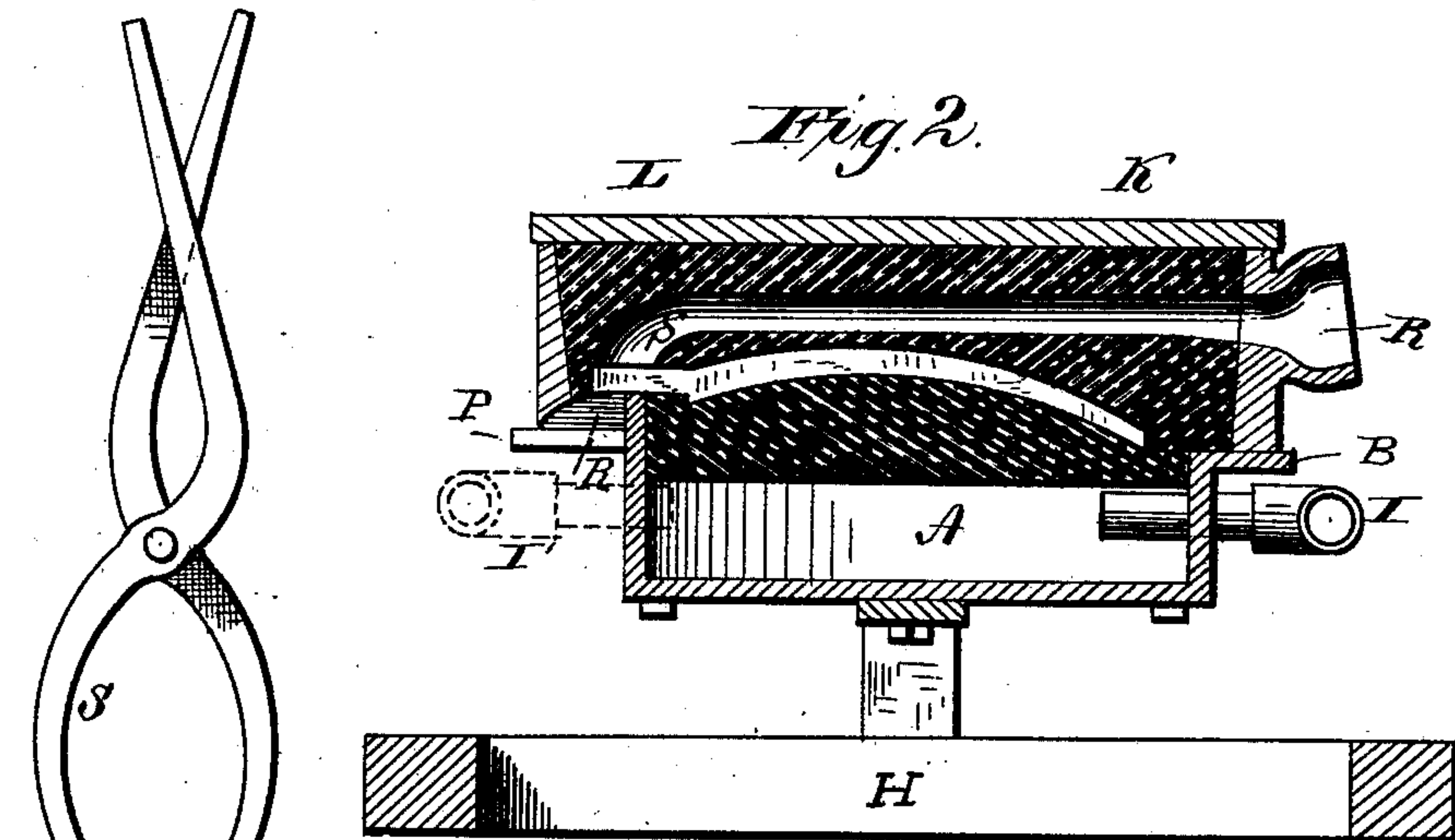
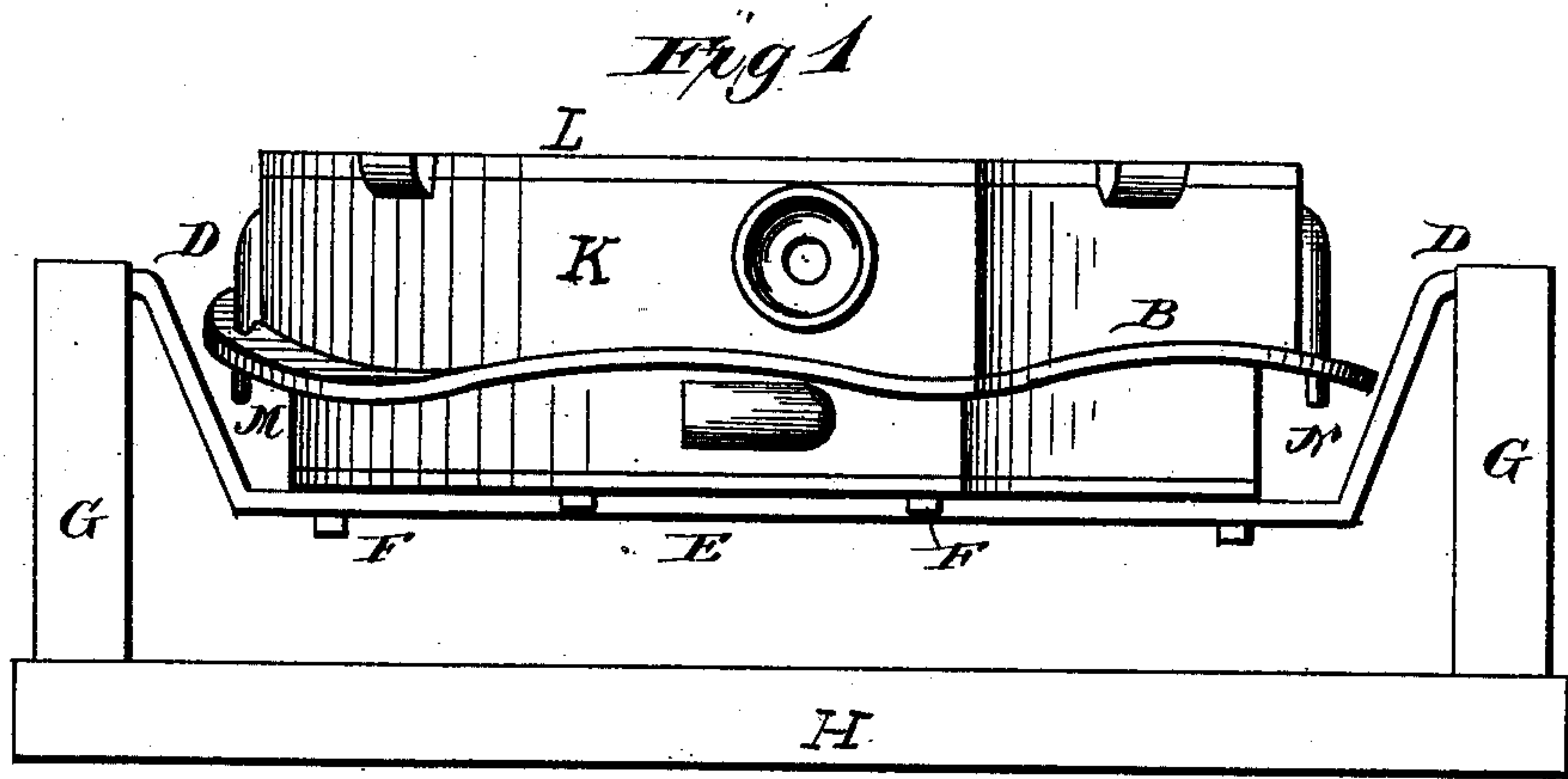


(Model.)

J. P. ZELLER.
Chill for Mold Boards.

No. 235,327.

Patented Dec. 7, 1880.



Witnesses.
Frank L. Curaud
J. J. Mc Carthy.

Inventor,
John P. Zeller.
Alexander D. Massey
per D. Attorneys

UNITED STATES PATENT OFFICE.

JOHN P. ZELLER, OF ROCK ISLAND, ILLINOIS.

CHILL FOR MOLD-BOARDS.

SPECIFICATION forming part of Letters Patent No. 235,327, dated December 7, 1880.

Application filed July 21, 1880. (Model.)

To all whom it may concern:

Be it known that I, JOHN P. ZELLER, of Rock Island, in the county Rock Island, and in the State of Illinois, have invented certain new and useful Improvements in Chills for Mold-Boards for Plows; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

This invention relates to certain improvements in casting chilled mold-boards for plows; and it has for its objects to provide means whereby a single chill may be employed in connection with any number of molds in rapid succession for casting and chilling mold-boards, whereby the labor, time, and expense attendant upon the methods of casting and chilling as heretofore practiced are greatly reduced. These objects I attain by the apparatus illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of my improvement; Fig. 2, a longitudinal sectional view, and Figs. 3 and 4 detached views of portions of the apparatus and the tongs by which it is manipulated.

The letter A indicates my improved chill, which consists of a hollow metallic box, the upper surface or side of which has a configuration corresponding to the face of the mold-board to be chilled. The said upper side or face of the chill, at its edges, is provided with a flange, B, which is cut away at C, for the purpose hereinafter more fully explained. The said box or chill is provided with trunnions D at each end, which, in the present instance, are formed by the horizontal extensions at the extremities of a bent metal support, E, to which the box or chill is secured at its bottom by means of bolts F, or in any other convenient manner. The said trunnions have bearings in the standards G of a suitable frame, H, and are so located that when in a normal position the box or chill will hang with its chilling-face up. The box or chill, on opposite sides, is provided with induction and eduction tubes I I', by means of which a current of water may be passed through the box or chill, the tubes being connected to flexible hose to introduce and

carry off the water, and at the same time permit the box or chill to be turned freely on its trunnions.

The letter K indicates a flask, the lower edge of which conforms in configuration to the face of the flange at the edge of the chill, so that the two will fit together closely. The flask is provided with a detachable top, L, and at each end with pins M, which are adapted to set in apertures N at each end of the chill, in the flange thereof, to register the flask and chill in proper position with respect to each other when placed together for molding.

The lower edge of the flange of the chill is cut away or formed with a slot, as indicated by the letter C, so as to leave an opening into the interior of the mold at the lower part, whereby a tool or pattern of suitable shape may be inserted in order to form a recess or pocket, R, in the sand in the half-flask K, to connect the gate or inlet-passage S with the space formed by the mold-board pattern. The letter P represents a removable plate, by which the opening is closed after the pocket is formed. This plate is secured by any ordinary fastening devices, such as screws, clamps, or the like.

The letter S indicates a pair of tongs, formed with parallel jaws T, for grasping the flask and chill and holding the same together, and serving, also, as a means for manipulating the apparatus during the operation of casting and chilling.

The operation of my invention is as follows: The upper face of the chill forms one molding-surface for the mold-board to be cast and chilled. The other molding-surface is formed in sand in the flask by placing the flask upon the chill to which the pattern has been properly secured and manipulating in the ordinary manner of forming the upper half of a mold as practiced in casting metal. Any number of flasks can in this manner be prepared for subsequent use. In casting the chill and flask are clamped together by means of the tongs, and the two are swung into a vertical position, or in such position that the filling-conduit will be uppermost. The metal is then poured in and passes down through the passage in the sand to the pocket below, through which it enters the mold and rises upward until the mold is completely filled. Water is in the meantime admitted through

the induction-tube and passes off through the
eduction-tube, cooling and chilling the molten
metal during its passage. When the metal has
sufficiently cooled the chill and flask are shifted,
5 so that the flask will be under, and the tongs
are then removed and the mold-board is taken
away, after which the chill is returned to its
normal position, ready for the reception of a
fresh flask for subsequent casting and chilling.

10 Having thus described my invention, what I
claim, and desire to secure by Letters Patent,
is—

A chill for chilling mold-boards for plows,
consisting of a hollow metallic box having a
15 matrix for forming and chilling the face of the
mold-board, in combination with a flask in

which the matrix of the rear of the mold-board
is formed, the said chill being provided with a
flange around the edge of its face fitting the
flask, which flange is provided with a slot or 20
opening, whereby a pocket may be formed for
connecting the gate with the space formed by
the pattern, and a detachable plate for closing
the opening, substantially as specified.

In testimony that I claim the foregoing I 25
have hereunto set my hand this 19th day of
June, 1880.

JOHN P. ZELLER.

Witnesses:

J. J. MCCARTHY,

LUCIUS D. DIMICK.