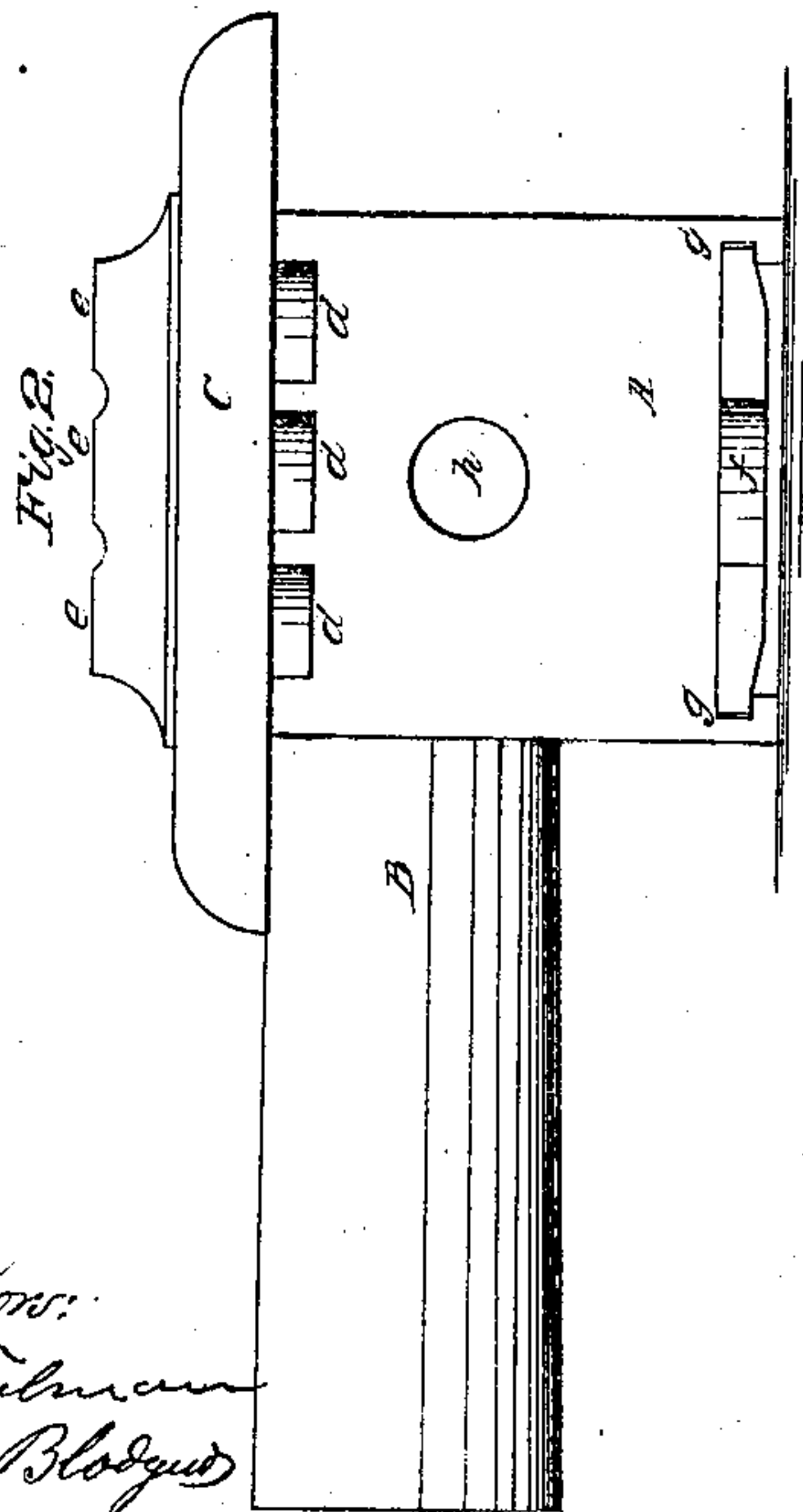
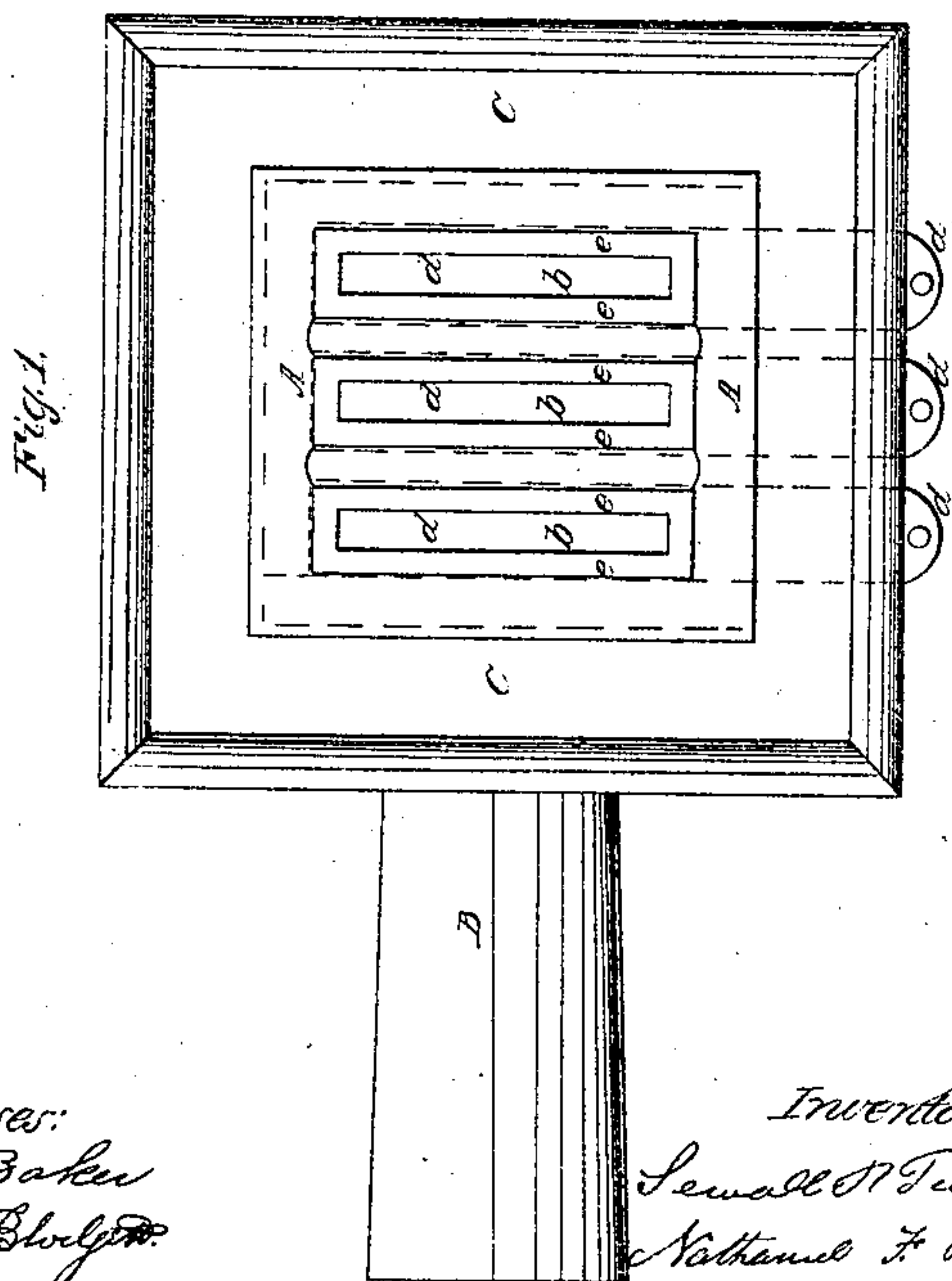
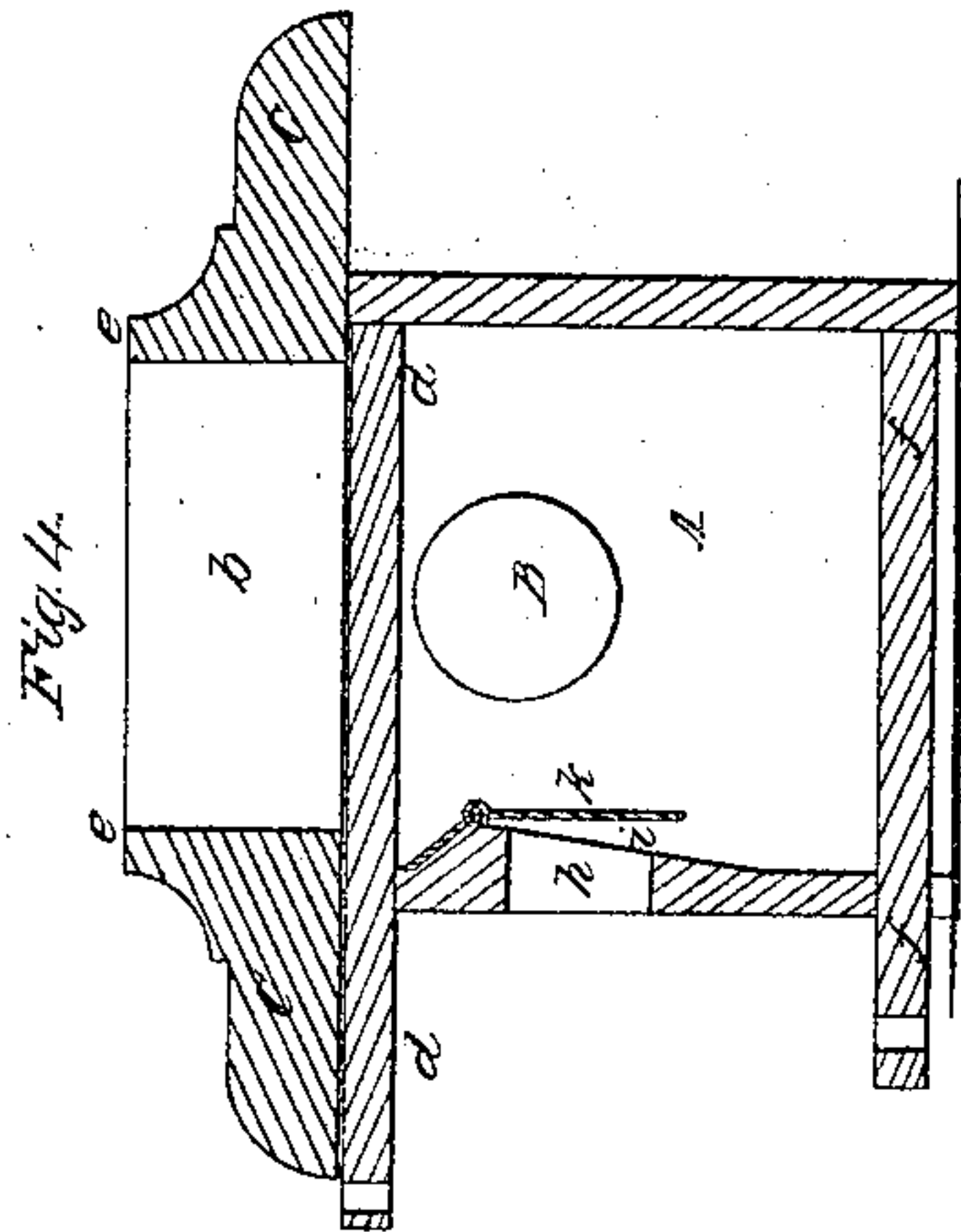
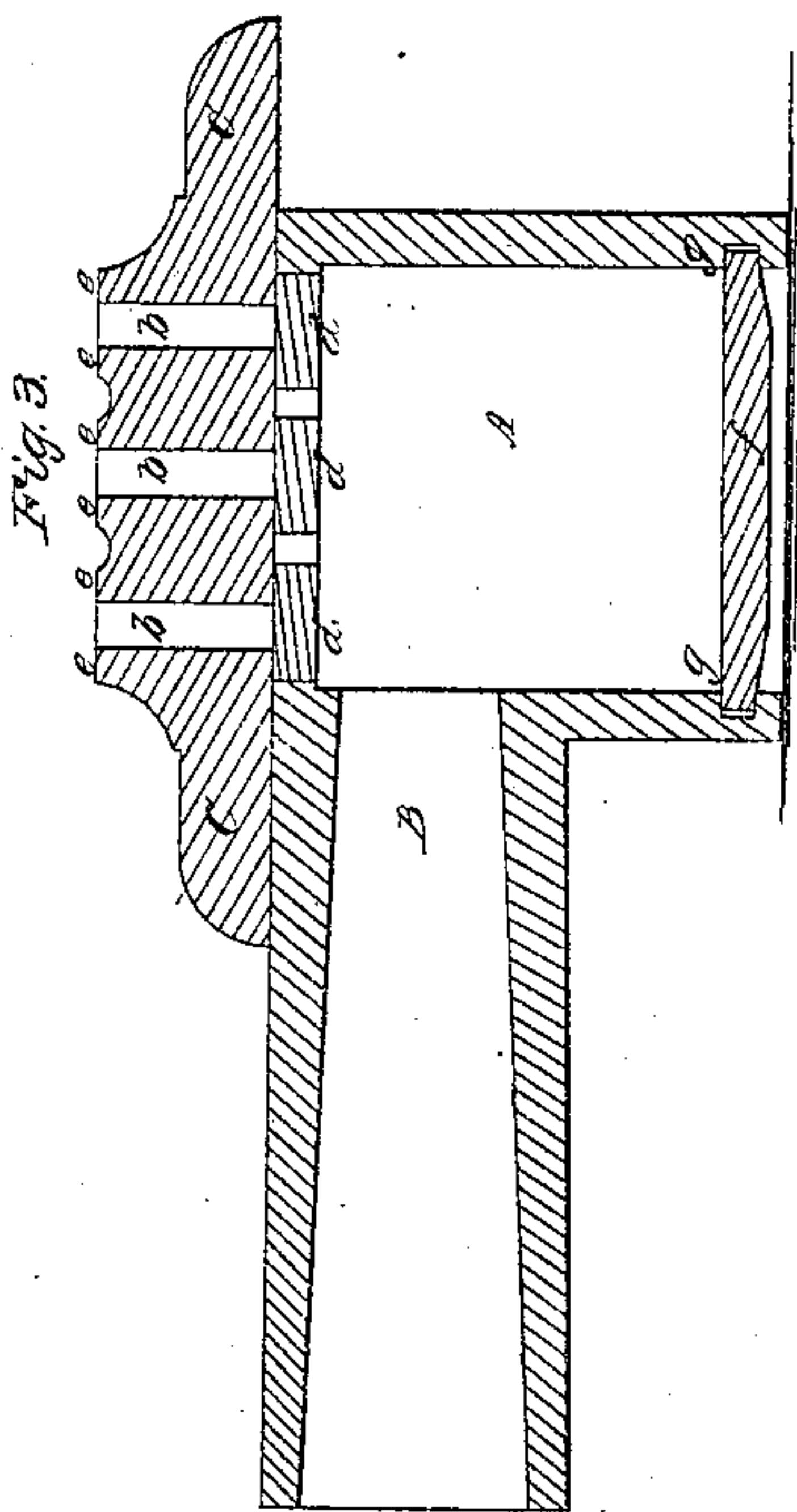


S. P. TOLMAN & N. F. BLODGETT.
 TWYER FOR BLACKSMITHS' FORGES.

No. 29,114.

Patented July 10, 1860.



Witnesses:
 Hille Baker
 Primal Blodgett

Inventors:
 Sewall N. Tolman
 Nathaniel F. Blodgett

UNITED STATES PATENT OFFICE.

SEWALL P. TOLMAN AND NATHANIEL F. BLODGETT, OF NORTH ORANGE, MASSACHUSETTS.

TWYER.

Specification of Letters Patent No. 29,114, dated July 10, 1860.

To all whom it may concern:

Be it known that we, SEWALL P. TOLMAN and NATHANIEL F. BLODGETT, of North Orange, in the county of Franklin and State of Massachusetts, have invented an Improved Twyer for Blacksmiths' Forges; and we do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1, is a top view; Fig. 2, a side elevation; Fig. 3, a longitudinal section and Fig. 4, a transverse section of it.

The nature of our invention consists in an improved twyer, as constructed with a valve opening and valve arranged in or applied to the air case, so that the valve shall not only close upon its opening by the force of the blast from the induction pipe but on cessation of such blast move away from and uncover such opening, and allow air to pass through it into the case.

In the drawings, A, denotes the air case or box, furnished with a blast pipe, B, and a cap plate or hearth, C. The said part, C, is provided with three elongated slots, *b, b, b*, arranged parallel to each other and in nipples or projections, *c*, extending upward from the hearth.

Underneath each hole, *b*, there is a separate slide, *d*, arranged in the case so as to be capable of being moved back and forth in a longitudinal direction and so as to open or close its hole, *b*, to such extent as circumstances may require. Furthermore, the bottom, *f*, of the air case A, is made so as to slide into grooves, *g, g*, in order that by withdrawal of the bottom at any time, the ashes or cinders which may have collected in the case may be discharged therefrom.

Through one side of the case, A, there is an air hole or passage, *h*, having an inclined valve seat, *i*, where it enters the interior of the case, the inclination of such seat being as shown in Fig. 4. To the upper edge of this valve seat, a light valve *k* is hinged so that while hanging vertically, it may not lie close upon the seat but away therefrom so as to permit air to pass through the hole, *h*, and into the case.

By means of the series of long holes and sliders applied to the hearth of the case, the blast may be made to rush through either a part or the whole of a mass of fuel when

resting on the hearth. In this way, either a "narrow" or "broad" fire may be maintained, according as the smith may require, it often being necessary, especially when a broad and flat piece of metal is to be heated to have a wide fire. The series of sliders and their air ducts also enables the smith to direct the blast upon such part of the fire as he may desire.

While the blast from the bellows is being driven through the pipe, B, and into the case A, its force will close the hanging valve, *k*, down upon its seat but as soon as the blast may cease the valve will open and fall away from its seat and allow sufficient air to maintain combustion of the fuel to pass through the opening, *h*, and into the case, A, from which it will flow through either one or all the hearth passages and into the mass of fuel.

With ordinary twyers the fires of their forges are apt to become extinguished from want of oxygen after cessation of the blast, but with our improved twyer constructed with a lateral air passage and a self acting valve air will be supplied to the fire when the blast is not in action thereon.

We do not claim a twyer, having a series of air discharging ducts in its hearth and but one valve to all of them, or with valves or slides so connected that one cannot be moved without creating a like degree of movement of the other, for in our improved twyer, each slide is separate from and independent of the other, and can be kept closed more or less while either of the others is being moved or is open more or less. The separate and independent slides afford great advantages in applying the blast to the fire.

We claim—

The improved twyer, as constructed with a valve opening, *h*, and valve, *k*, arranged on or applied to the air case so that the said valve shall not only close upon the opening by the force of the blast from the induction pipe, but on cessation of the blast move away from such opening and permit air to enter the case and pass from thence into the mass of fuel.

SEWALL P. TOLMAN.

NATHANIEL F. BLODGETT.

Witnesses:

PERCIVAL BLODGETT,

DOLLY A. BLODGETT.