

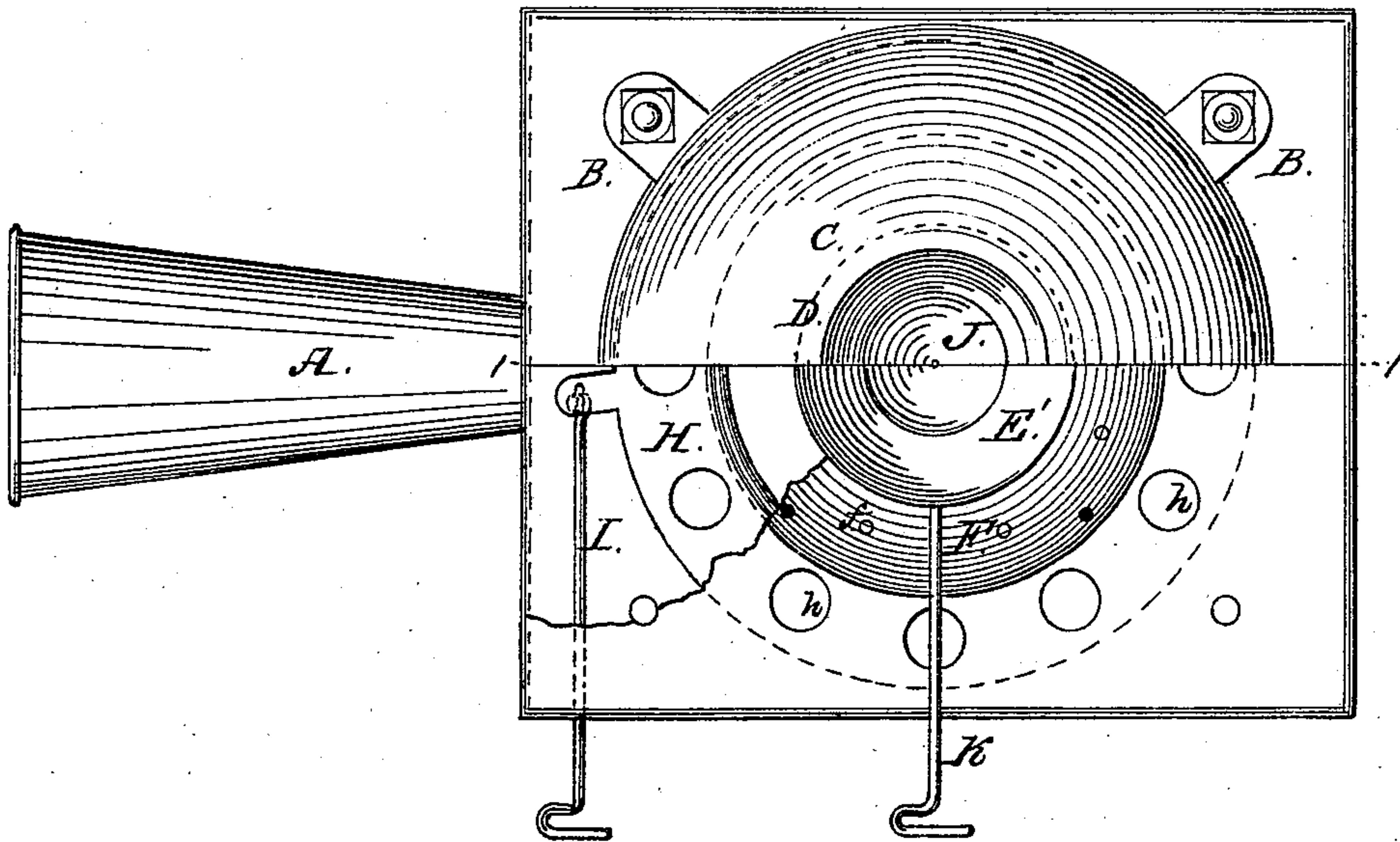
*T. S. Clark,*

*Tuyere,*

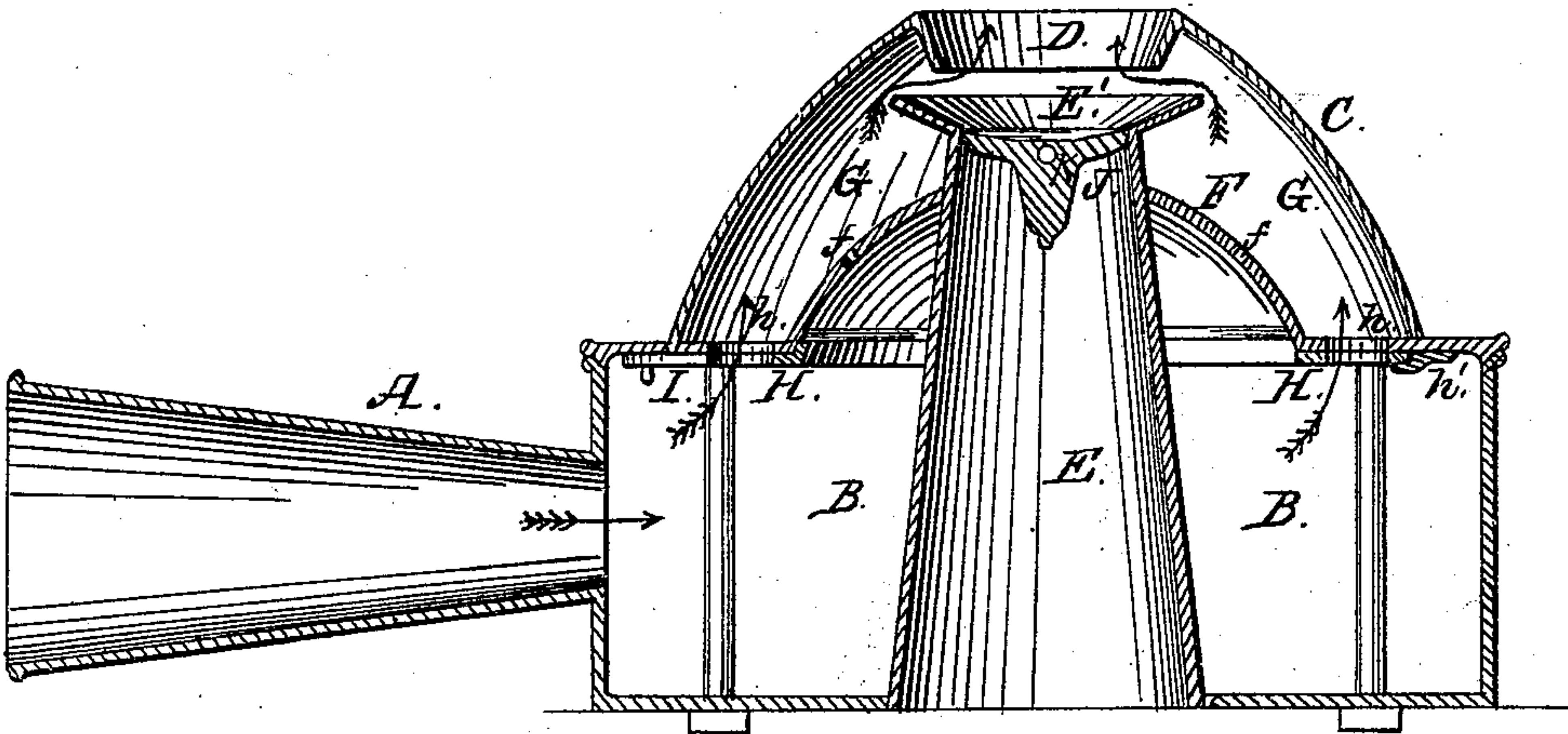
*N<sup>o</sup>. 85,283.*

*Patented Dec. 29, 1868.*

*Fig. 1.*



*Fig. 2.*



*Witnesses:*

*Joel A. Peyton.*  
*John Chew*

*Inventor:*

*T. S. Clark*  
*by his atty*  
*Wm. D. Baldwin*



# United States Patent Office.

THOMAS S. CLARK, OF LENA, ILLINOIS.

Letters Patent No. 85,283, dated December 29, 1868.

## IMPROVED BLACKSMITHS' FORGE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, THOMAS S. CLARK, of Lena, in the county of Stephenson, and State of Illinois, have invented certain new and useful Improvements in Blacksmiths' Forges, of which the following is a full, clear, and exact description.

The objects of my invention are to adjust the blast of a blacksmith's fire properly, to prevent the choking of the blast-pipe by the falling ashes, and to remove the ashes readily; to which end,

The improvements herein claimed consist in a novel method of combining with the fire-cup of a blacksmith's forge, two domes or cones, (so arranged as to form a conduit for the blast,) and a shut-off valve, to regulate the force of the blast.

In the accompanying drawings, which make part of this specification, and in which all my improvements are represented as embodied in one machine—

Figure 1 represents a plan or top view of my improved apparatus, with a portion of the outer cone and casing broken away, to show the details more clearly, and

Figure 2, a vertical central section through the same, at the line 1-1 of fig. 1.

Air is forced through the tuyere or blast-pipe A, from a bellows, pump, or fan, of the usual construction, into a close box or air-chamber, B.

A dome, C, rests upon this box, and carries a fire-cup, D, which is intended to be flush with the hearth. This cup consists simply of a ring in the dome, and has no bottom.

A tube or pipe, E, passes up through the air-chamber, and through an interior dome, F, and terminates beneath the ring D, in a flange, E'. This tube is, by preference, made conical, as shown in the drawings, as being less liable to choke when of this form.

The dome F forms part of the top of the air-chamber, and is so arranged as to leave an annular space, G, between itself and the outer dome. This space G communicates with the fire, through an opening, y, be-

tween the ring D and the flange E', and with the air-chamber B, by a series of holes, h, in the top of the chamber, between the two domes, thus forming conduit for the blast.

A diaphragm or ring, H, perforated with openings to match those, h, in the top of the chamber, is supported by flanges, h', or other suitable guides, so as to rotate around the central tube E, to open and close these apertures, and thus regulate the blast.

A rod, I, attached to this ring, passes through the air-chamber, and the workman regulates this blast at pleasure, by pushing the rod in or pulling it out.

The exact degree of adjustment required, may be secured by notching the rod, and letting the notch rest in a suitable catch, or in other well-known ways.

A cup, J, is pivoted to turn on a rod, K, and forms a bottom for the flange. By tilting this cup (after removing the coarser cinders from the hearth,) the ashes are discharged downwards through the pipe E.

The blast prevents the escape of the ashes over the edge of the flange E', and the apparatus is thus kept from being clogged, and the ashes are easily discharged.

The small apertures f, in the interior of the dome, allow air enough to pass to the fire to prevent its extinguishment when the main valve is shut.

The arrows show the direction of the blast, and the operation of the device will be readily understood from the above description.

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

The combination, substantially as set forth, in a blacksmith's forge, of the turning fire-cup, the two flanged domes, forming the air-conduit, and the blast-regulating valve, for the purposes specified.

In testimony whereof, I have hereunto subscribed my name.

THOMAS S. CLARK.

Witnesses:

BENJAMIN F. TIMMS,  
N. C. PICKARD.