

(No Model)

G. W. HICOX.
SMITH'S FORGE.

No. 392,153.

Patented Oct. 30, 1888.

Fig. 1.

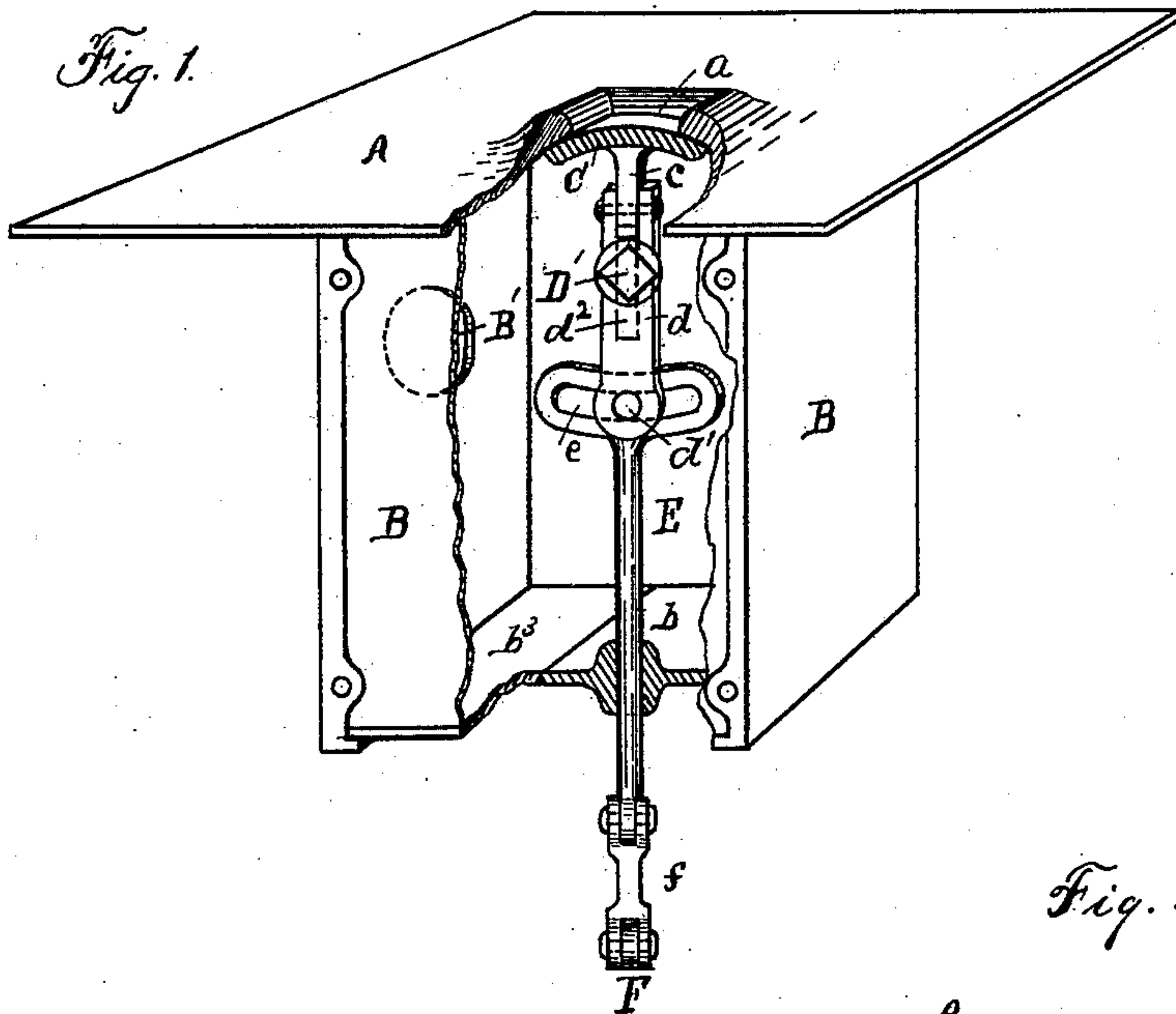


Fig. 3.

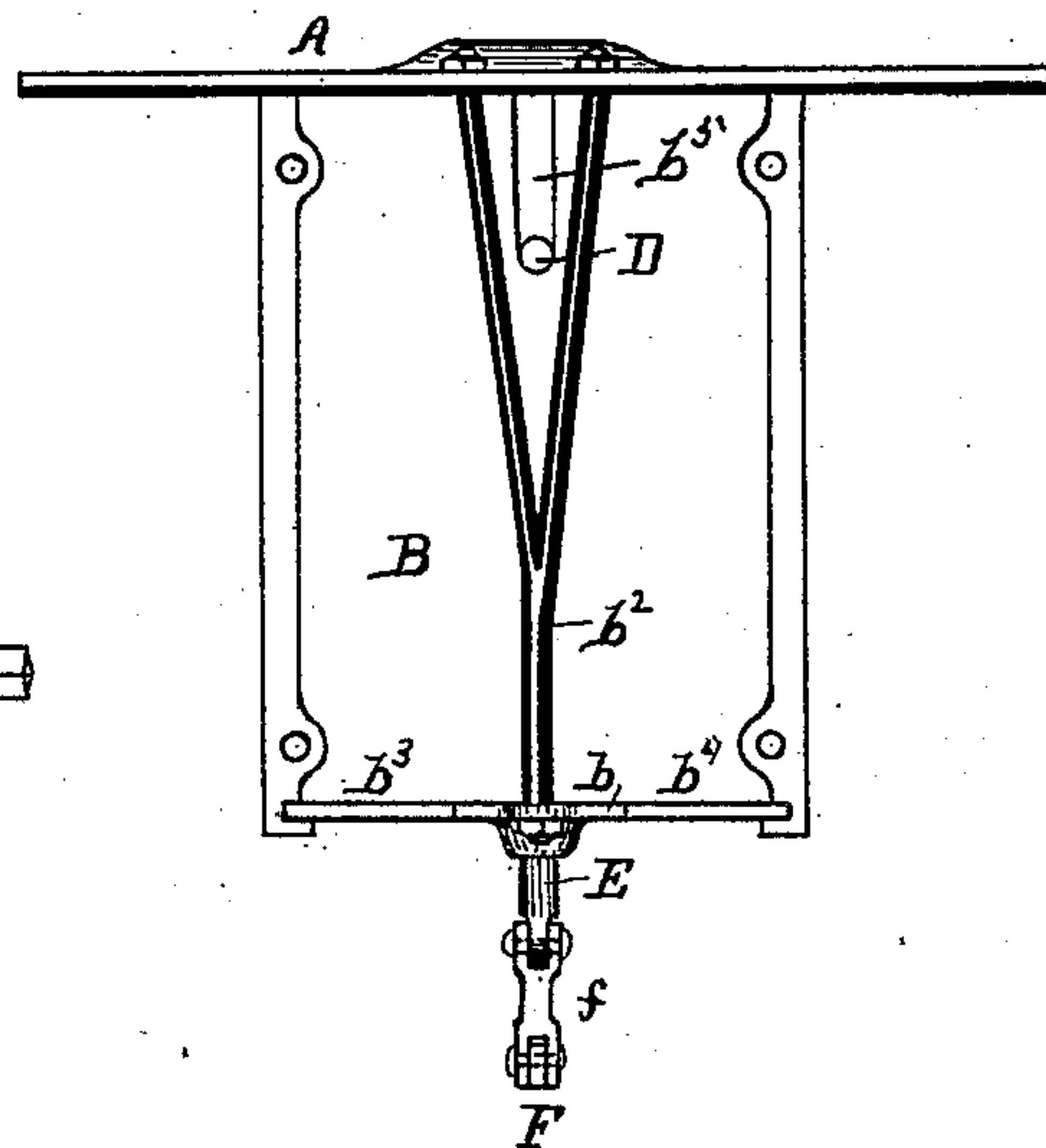
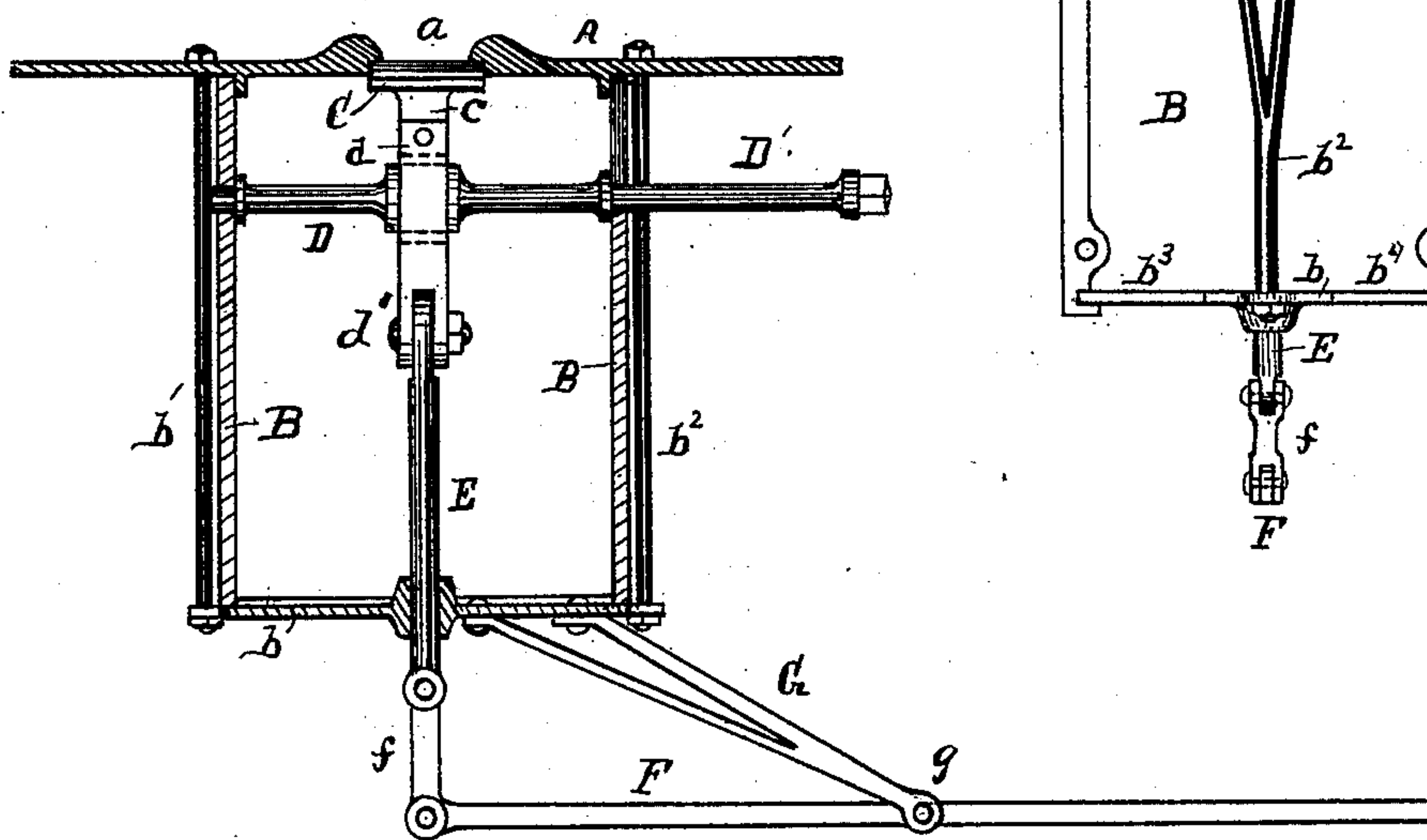


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

GEORGE W. HICOX, OF FLAT ROCK, MICHIGAN.

SMITH'S FORGE.

SPECIFICATION forming part of Letters Patent No. 392,153, dated October 30, 1888.

Application filed February 2, 1888. Serial No. 262,780. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. HICOX, a citizen of the United States, residing at Flat Rock, county of Wayne, State of Michigan, have
5 invented a certain new and useful Improvement in Dampers for Blacksmiths' Forges; and I declare the following to be a full, clear, and exact description of the same, such as
10 will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to certain new and useful improvements in dampers for blacksmiths' forges, and has for its object to provide a novel
15 device for regulating the blast admitted to the fire upon the forge, and also in connection therewith novel means for shaking the same, so as to properly clean the grate and keep it
20 free for the more effective communication of the air to the fuel-bed.

My invention to this end consists of the construction, arrangement, and combination of devices and appliances, as more fully herein-
25 after specified, and more particularly pointed out in the claims.

In the drawings forming a part of this application, Figure 1 is a view in perspective illustrating features of my invention, with parts
30 broken away. Fig. 2 is a vertical section showing the damper mechanism substantially at right angles to that of its location in Fig. 1. Fig. 3 is a side elevation.

I carry out my invention as follows:

35 A represents a bed to support the fuel upon the forge, constructed with an orifice at *a* for the admission of the blast from the bellows to the fire upon said bed.

40 B represents any suitable inclosing-casing adapted to house parts of my improved damper mechanism.

B' is an orifice in the casing, through which a bellows may communicate into the interior of the housing, and thence through the orifice
45 *a* to the fuel upon the bed A.

The sides of the casing B may conveniently be cast separate and so constructed and arranged as to fit one to another. The base of the casing I prefer to construct with a central
50 supporting bar or plate, *b*, which may be held in place by means of bolts *b'* and *b''* at either

end, said bolts extending upward through the bed-plate A and secured thereto. At either side of this supporting-plate may be located additional plates, *b''* and *b'''*, which, for convenience of access to the interior of the casing,
55 may be removable.

Beneath the orifice *a* in the bed A, I locate a damper, C, which may conform to the shape of said orifice, the said damper being preferably rounded on its upper surface, as shown in
60 Fig. 1, to permit its free vibration for the purpose of shaking down the ashes and cinders from the fire upon the bed A. This damper is constructed with a shank, *c*, of any suitable
65 construction, provided with a vertically-slotted arm, *d*, with which is engaged a vibrating spindle, D, journaled in the casing and extended to the exterior, as at D', to permit the engagement of a handle or shaker therewith to vibrate
70 the damper. The arm *d* is constructed to embrace the spindle, and so as to permit a vertical movement of the damper while the spindle is vertically immovable, the elongated slot
75 *d''* permitting the arm *d* to ride upward and downward upon the spindle. The lower end of said arm *d* has an oscillatory engagement with an adjusting-bar, E, extending through the supporting-plate *b*, and constructed at its
80 upper end with an elongated curved orifice, *e*, in which the lower end of the arm *d* may be engaged, as by a pin, *d'*, to permit the damper being rocked to shake the grate. This bar E is arranged to have a vertical movement
85 through the base of the casing, which may be accomplished by means of a lever, F, engaged with the lower end of said bar, as by a link-connection, *f*. This lever is suitably fulcrumed in a supporting-arm, G, as at *g*, the
90 construction being such that by a proper movement of said lever the adjusting-bar will be moved upward or downward, as desired, thereby carrying with it the damper, so as to open or close more or less, as may be desired, the
95 orifice *a*, through which air is communicated to the fuel-bed. In this manner the quantity of the blast communicated to the fire may be effectually controlled. This feature of regulating the blast forms one of the chief elements of my invention, the accomplishment of
100 which is of great desirability and utility. At the same time the shaking of the grate is ade-

quately provided for by one and the same device, the shaking of the grate and the regulation of the draft neither one interfering with the other.

5 For convenience of engaging the spindle D in place the adjacent side of the casing may be slotted from the top to admit the spindle to its bearing, the orifice being closed again by a plate, *b*⁵, so as to prevent the escape of air. I
10 prefer to make the casing in sections, so that it may be put in place or taken apart without disturbing the forge.

A damper so constructed is evidently simple, durable, and efficient for both the purposes for which it is designed.

15 What I claim as my invention is—

1. The combination, with a supporting-bed, A, constructed with an orifice, *a*, of the damper C, provided with a slotted extension, and a
20 rock-shaft, D, inserted through said slotted extension, and upon which the damper is made vertically adjustable, substantially as set forth.

2. The combination, with the supporting-

bed A, constructed with the orifice *a*, of the damper C, mounted upon a rocking spindle, D, 25 said damper engaged with a reciprocatory adjusting-bar, E, substantially as described.

3. The combination, with the supporting-bed A, constructed with an orifice, *a*, of a casing located beneath said bed, a rocking damper 30 located beneath said orifice, and an adjusting-bar, E, engaged with said damper and provided with an operating-lever, said bar constructed with a slot, *e*, in which the damper has engagement with said bar, substantially as described. 35

4. The combination, with the supporting-bed A, constructed with an orifice, *a*, of a damper, C, a shaft, D, for operating the damper, and a rod, E, for vertically adjusting it, substantially as set forth. 40

In testimony whereof I sign this specification in the presence of two witnesses.

GEORGE W. HICOX.

Witnesses:

N. S. WRIGHT,

GEORGE H. HIGGS.