

(No Model.)

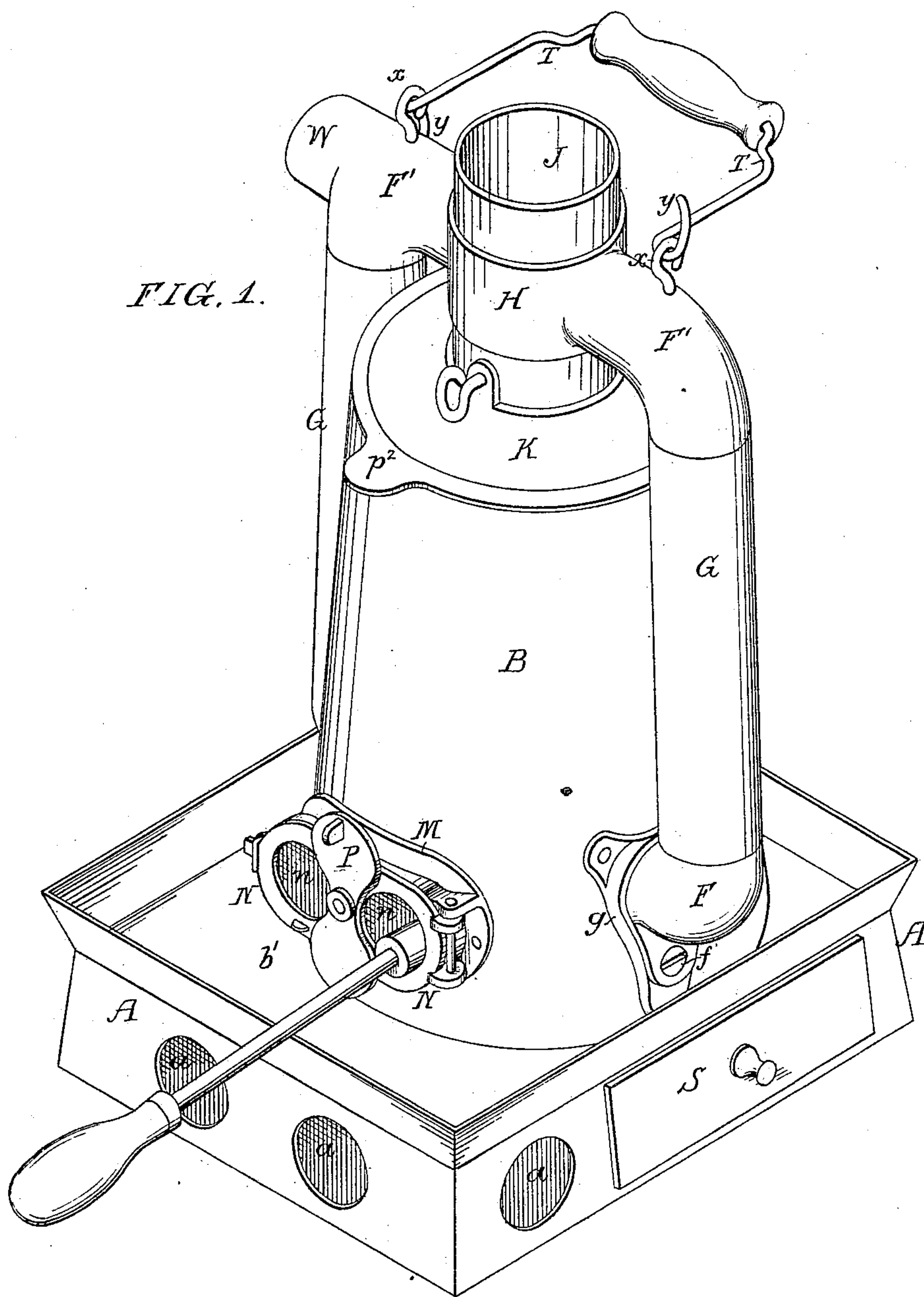
3 Sheets—Sheet 1.

J. F. LOCKWOOD.

TINMAN'S FURNACE.

No. 258,779.

Patented May 30, 1882.



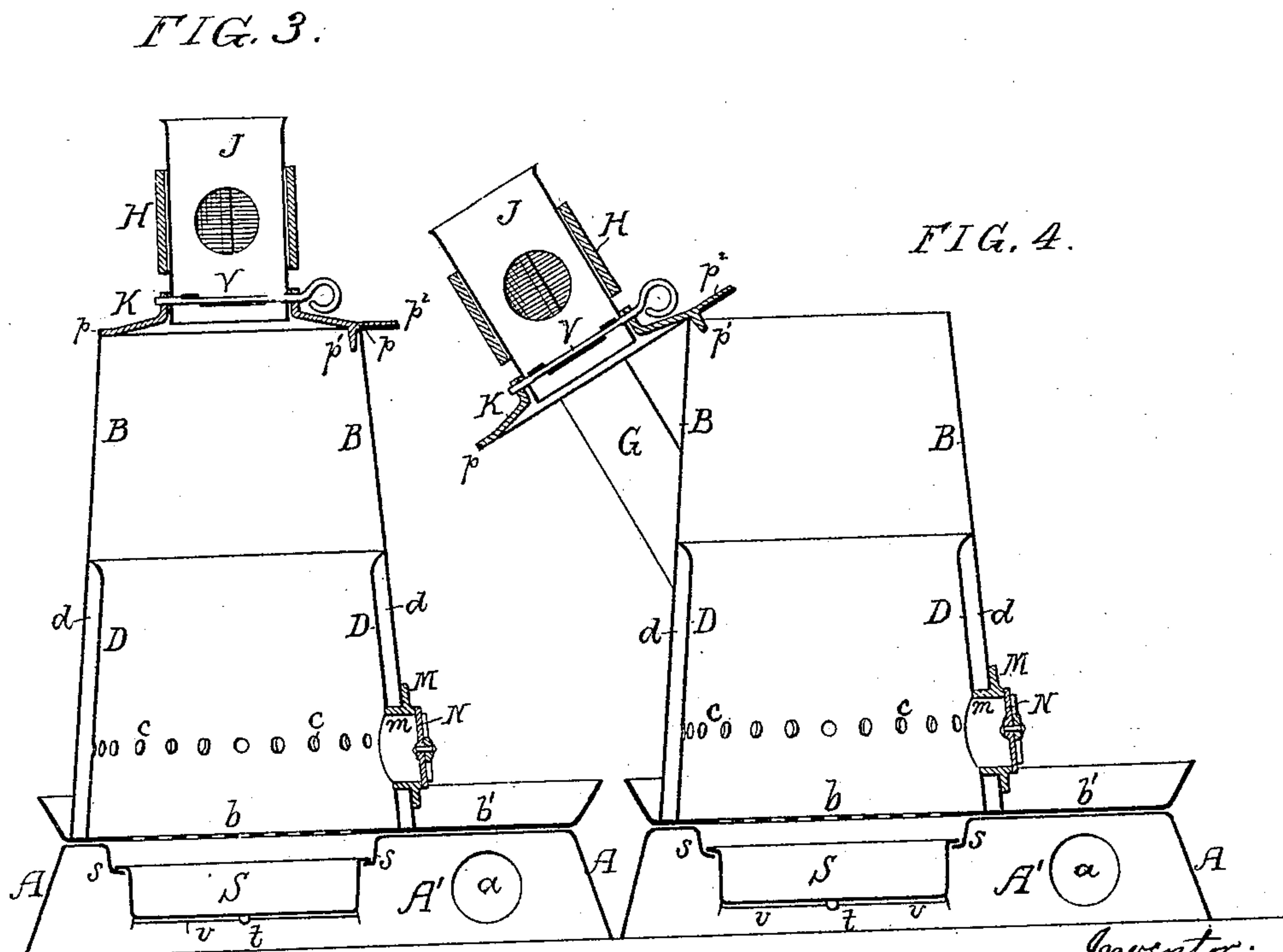
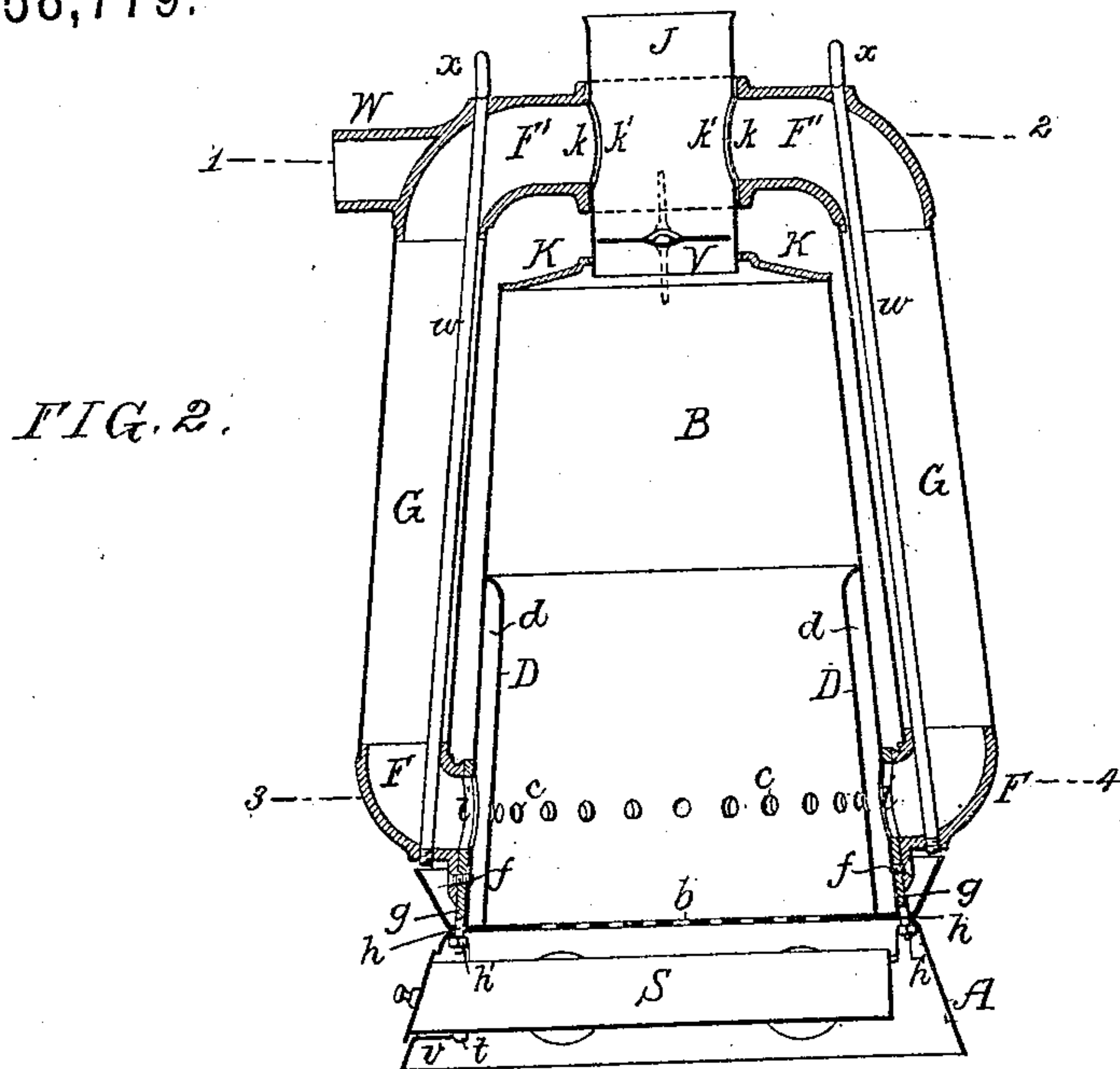
Witnesses:
Harry Drury
David S. Williams

Inventor:
James F. Lockwood
by his attorneys
Howson and Jones

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FIG. 5.

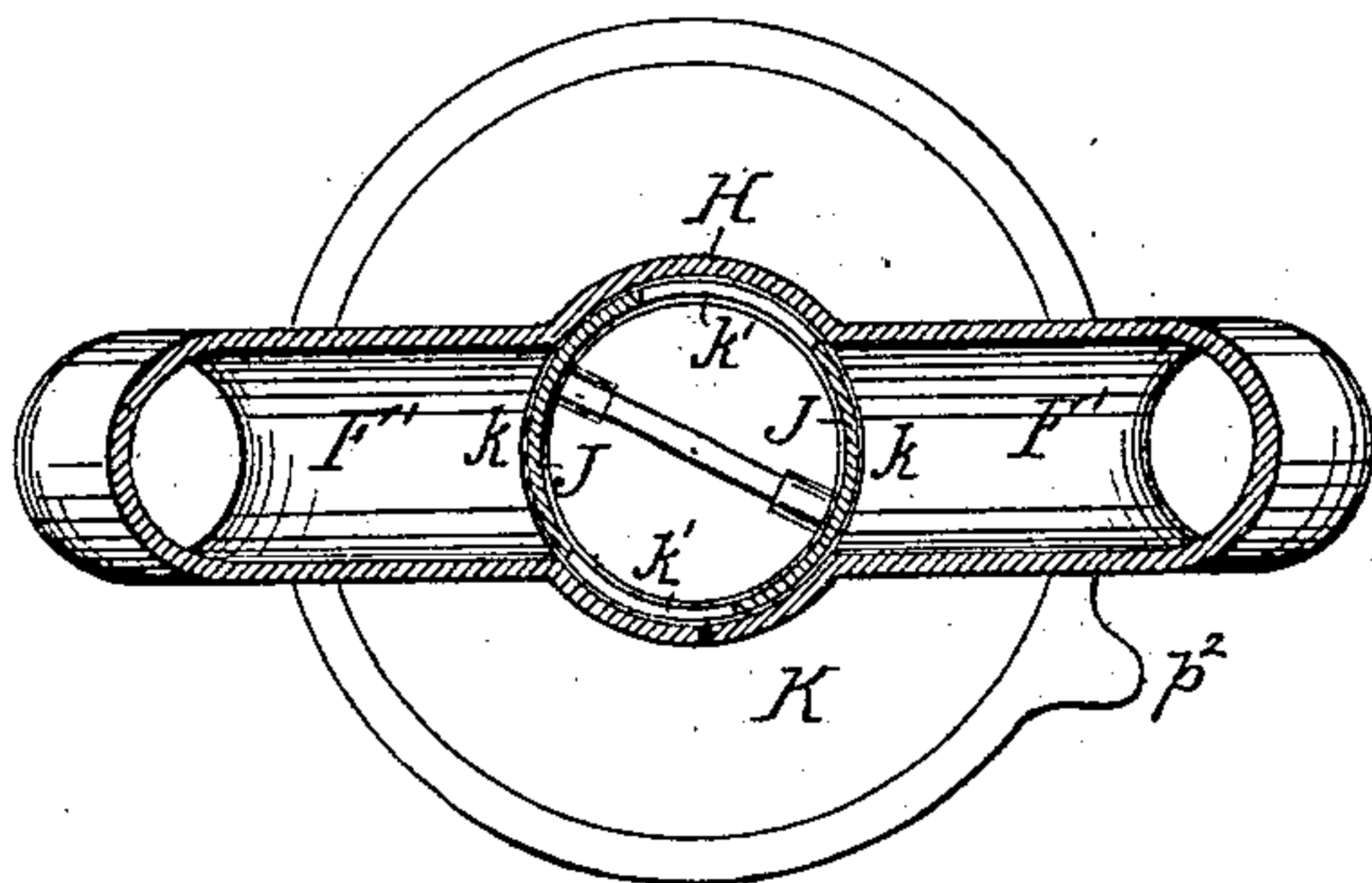


FIG. 6.

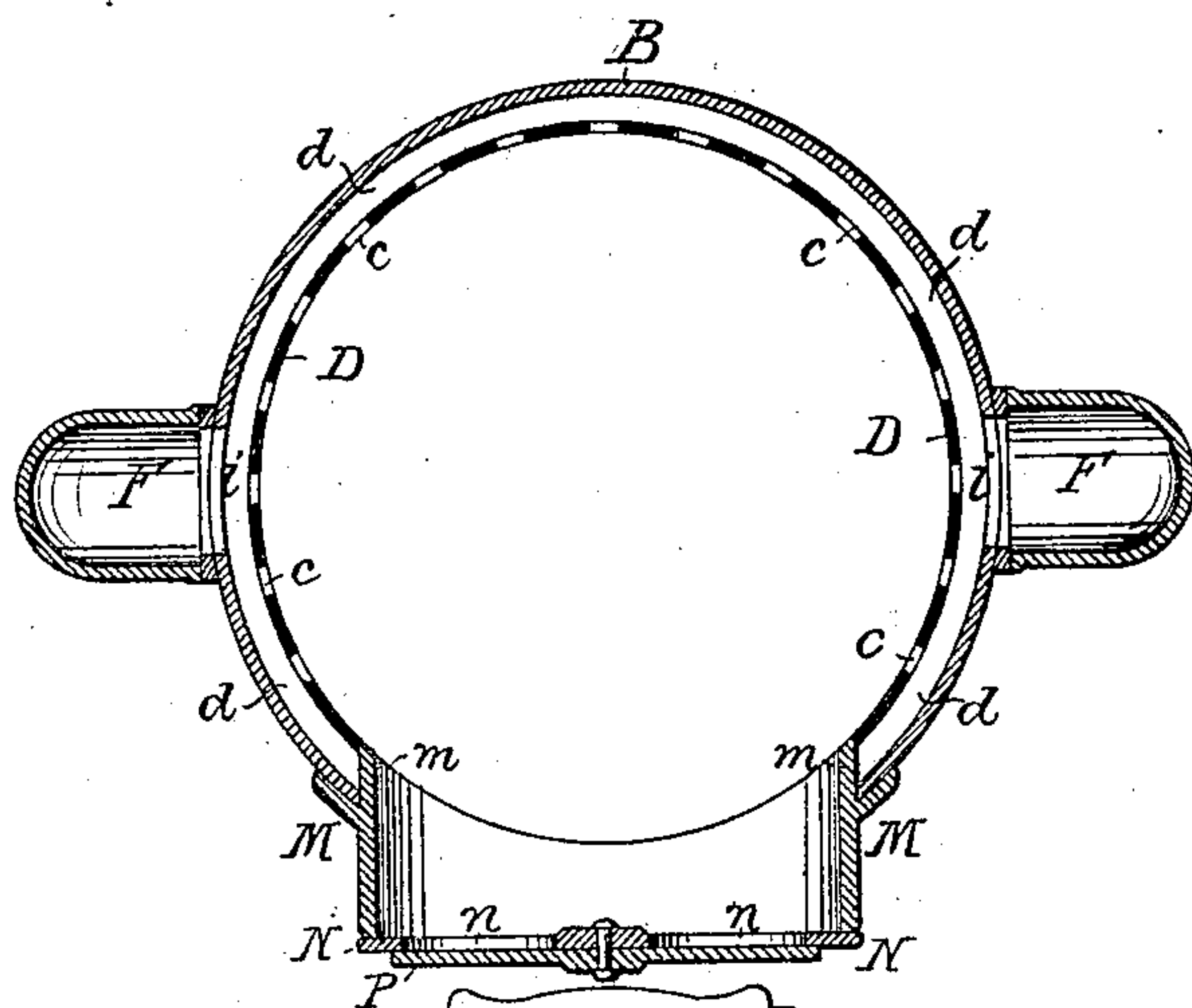
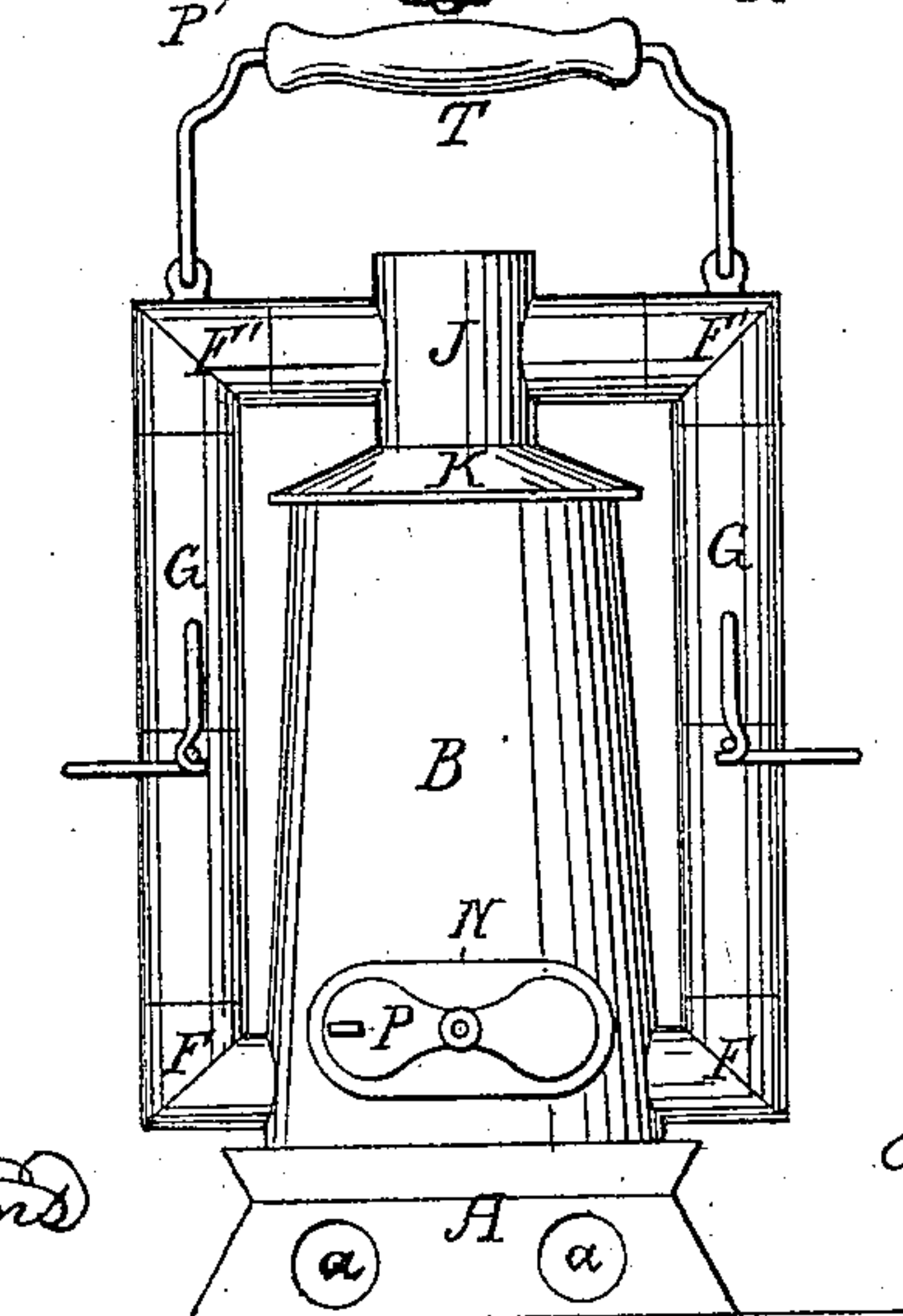


FIG. 7.



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UNITED STATES PATENT OFFICE.

JAMES F. LOCKWOOD, OF PHILADELPHIA, PENNSYLVANIA.

TINMAN'S FURNACE.

SPECIFICATION forming part of Letters Patent No. 258,779, dated May 30, 1882.

Application filed February 28, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. LOCKWOOD, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented an Improved Tinman's Furnace, of which the following is a specification.

My invention relates to certain improvements in tinner's soldering-iron furnaces, the objects of the improvements being to concentrate the heat at and near the irons, to govern the draft, and generally to simplify the construction of the furnace and adapt it to the varying conditions under which it is used.

In the accompanying drawings, Figure 1, Sheet 1, is a perspective view of my improved tinner's furnace. Fig. 2, Sheet 2, is a transverse section of the same. Figs. 3 and 4 are longitudinal sections, Fig. 4 showing some of the parts in a different position from that which they occupy in Fig. 3. Fig. 5 is a sectional plan on the line 1 2, Fig. 2, but with one of the parts differently adjusted in order to show one of the features of my invention. Fig. 6 is a sectional plan on the line 3 4, Fig. 2; and Fig. 7 is a front view, showing modifications of some of the features of the invention. Figs. 5 and 6 are on a somewhat larger scale than Figs. 2, 3, and 4.

A is the base of the furnace, which comprises a plate of sheet metal, which may be of any suitable form, this plate being flanged at the edges in order to inclose a draft-chamber, A', to which air gains access through openings a in the flange.

B is the casing of the fire-pot, the grate b of which consists of a perforated plate of sheet metal adapted to cover an opening formed in the base A. The plate b' forming the grate is preferably of the same shape as the base A, and is flanged at the edges so as to form a pan or tray surrounding the lower end of the fire-pot casing.

The fire-pot has within the lower portion a lining, D, between which and the casing B intervenes an annular chamber, d, which communicates through openings c with the interior of the fire-pot, and also communicates with side flues, each of which comprises a lower elbow, F, a pipe-section, G, and an upper elbow, F', the latter elbows projecting from a ring, H, which has openings k, and which surrounds the tubular chimney J of the furnace,

said chimney having openings k', and being secured to or forming part of the lid or cover K of the fire-pot, and so arranged as to be free to rotate or to be moved vertically within the ring H.

The elbows F are hung by pins f to plates g, which surround the discharge-openings i in the casing B, and are suitably secured to said casing. These plates g have threaded stems h, which project through openings in the base A and plate b', and are provided beneath said base with nuts h', whereby the casing B is secured to the base.

In the front of the casing B, and in the lining D, are openings, to which is adapted an inwardly-projecting collar, m, on a door-frame, M, the latter surrounding the opening, and being secured to the casing B by riveting or otherwise. The collar m projects to or beyond the lining D, so as to close the annular space d and dispense with the flanging of the outer casing or lining around the doorway.

The frame M has a hinged door, N, in which are formed openings n n, these openings being covered or uncovered, as desired, by manipulating a plate, P, hung to the center of the door.

An ash-drawer, S, is inserted from one side of the base, and occupies a position beneath the grate b, guides s for this ash-drawer being formed by bending the base-plate A at the opposite edges of the grate-opening, as shown in Fig. 3. The drawer is retained, when inserted, by the engagement of a lug or pin, t, with an elastic flange, v, formed by bending inward a part of one of the base-plate flanges at the lower edge of the opening for the ash-drawer. The drawer fits so loosely in its place that it can be lifted at the front end to free the pin from the flange when it is desired to remove the drawer, sufficient space at all times being presented between the drawer and base-plate A for the free passage of air to the grate b.

The upper elbows, F', and the pipes G are confined to the elbows F, and caused to preserve their proper relation thereto by means of bolts w, which pass through the elbows and pipes, these bolts being furnished at the upper ends with heads x for bearing on the elbows F', and threaded at the lower ends for adaptation to threaded openings in the lower elbows, F. The heads x of the bolts are made in the

form of eyes, to which is hung the bail or handle T of the furnace; the ends of said bail or handle being bent so as to form projections y, which, by contact with the elbows F', prevent the handle from falling in either direction below a horizontal line, so that it is prevented from becoming heated and is always in position to be readily grasped.

The chimney J of the furnace has below the ring H a damper, V, and the cover K of the fire-pot has a flange, p, a stop-pin, p', and a projecting lug, p², the objects of which will be explained hereinafter.

The operation of the furnace is as follows: In starting a fire the cap K of the fire-pot is first raised, so as to free its flange p from the upper edge of the casing B, and the top, chimney, elbows, and side flues are then allowed to swing rearward on the pivots f to the extent permitted by the stop-pin p', as shown in Fig. 4. The charcoal or other fuel being deposited in the fire-pot and the fire kindled, the parts are restored to the position shown in Figs. 2 and 3, and are retained in this position by depressing the cap K, thereby causing the engagement of the flange p of said cap with the upper edge of the casing B. The openings in the door N are closed by the plate P, and air from the hollow base passes up through the grate b to support combustion. The damper V is turned to the vertical position shown by dotted lines in Fig. 2, so as to provide a direct draft until the fire is fairly started, when said damper is closed, the products of combustion being then caused to seek the chimney J through the openings c in the fire-pot lining D, and thence through the chamber d, the side flues, and the openings k k'. Combustion is thus confined to the base of the fire-pot, where the irons are inserted and in consequence the heat is fully utilized and the proper heating of the irons is effected with less expenditure of fuel than usual.

When it is desired to check the draft entirely—as, for instance, when the furnace is being carried from place to place or is out of use—the cap K and chimney J are turned to the position shown in Fig. 5, so that the openings k and k' no longer coincide with each other, and the passage of the products of combustion through the side flues is cut off. Rotary movement of the cap K is facilitated by the lug p².

When but two soldering-irons are being used it is advisable to keep the door N closed, the irons being inserted through the openings n; but when it becomes necessary to use more than two irons or irons of larger size the door N is opened, so as to expose the entire width of the opening in the door-frame N.

On one of the upper elbows, F', of the side flues is a tubular projection, W, which serves as a mandrel whereby the tinman can expand or contract the end of a piece of tubing—a section of water-spout, for instance—so as to facilitate the making of close, neat joints.

On removing the casing B from the base A

the grate b is exposed, and when burned out it can readily be removed and a new one inserted.

The above-described construction is the one which I prefer to adopt in carrying out my invention; but various modifications of the same may be made in practice without departing from the essential features of the invention. For instance, in Fig. 7 I have shown a furnace in which the side flues are made in halves, the lid K, chimney J, elbows F', and upper halves of the pipes G forming one structure, which is secured to the lower halves of the pipes by hooks and pins, as shown. In this case, on withdrawing the hooks the entire top structure can be lifted from the casing B, instead of being swung out of the way, as in the furnace shown in Fig. 4. Ordinary stove-pipe elbows in this modification take the place of the elbows shown in Figs. 1 to 4, and the ring H is dispensed with.

I claim as my invention—

1. The combination, in a tinman's furnace, of the fire-pot casing B, having a grate and an opening for the soldering-irons, with a cap, K, adapted to close the top of the casing, and having a chimney, J, and side flues forming a communication between said chimney and the lower end of the fire-pot, as set forth.

2. The combination, in a tinman's furnace, of the fire-pot casing B, having a grate and an opening for the soldering-irons, side-flue casings pivoted at their lower ends, and a cap, K, adapted to close the top of the casing B, and having a chimney, J, said chimney and cap being carried by the side-flue casings, so as to swing with the same, as set forth.

3. The combination of the fire-pot casing, the elbows F, pipe-sections G, elbows F', with ring H, having openings k, the top K, and the chimney J, free to turn in the ring H, and having openings k', as set forth.

4. The combination of the fire-pot casing with the door-frame M, the door N, having openings n n, and the pivoted cover-plate P, as set forth.

5. The combination of the flanged base A, having an ash-drawer opening, with lower flange, v, and the ash-drawer S, having a lug or pin, t, as set forth.

6. The combination of the base A, having a grate-opening, the fire-pot casing B, and the grate b, the plate forming which has flanged edges, forming a pan or tray around the base of the fire-pot, as set forth.

7. The combination of the upper elbow, F', with the tubular projection W, forming a mandrel for expanding or contracting the ends of sheet-metal tubes, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES F. LOCKWOOD.

Witnesses:

HARRY DRURY,
HARRY SMITH.