

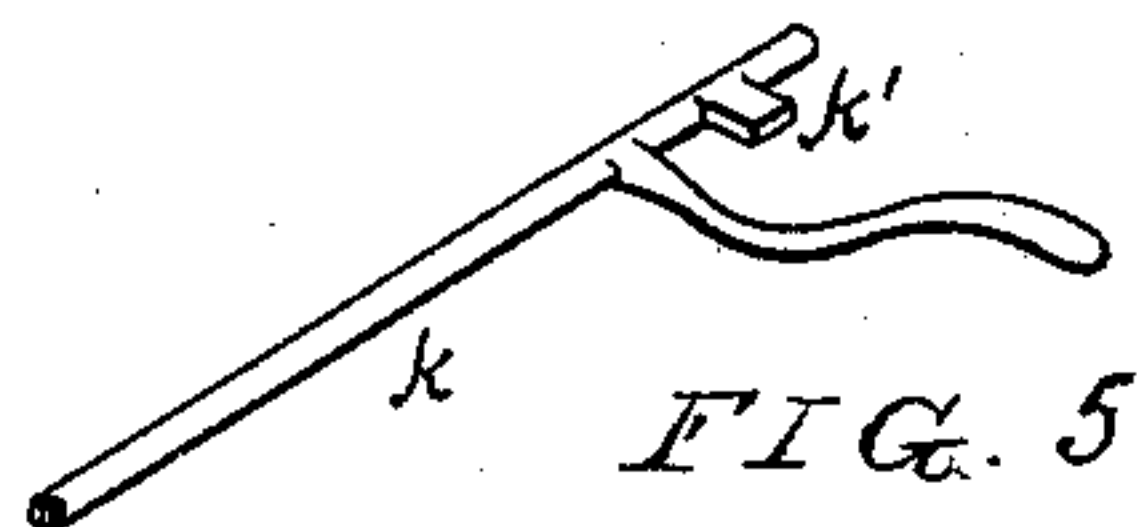
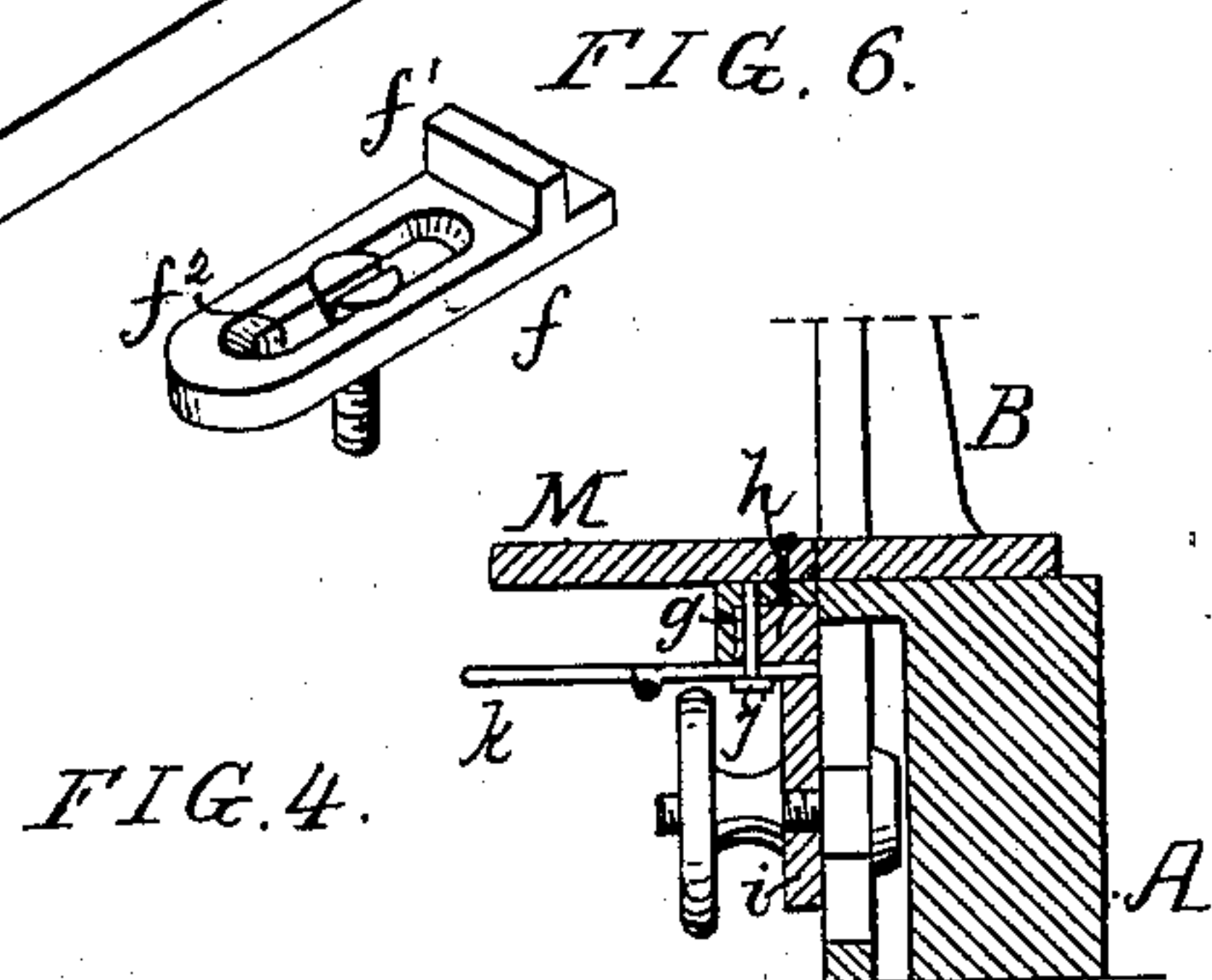
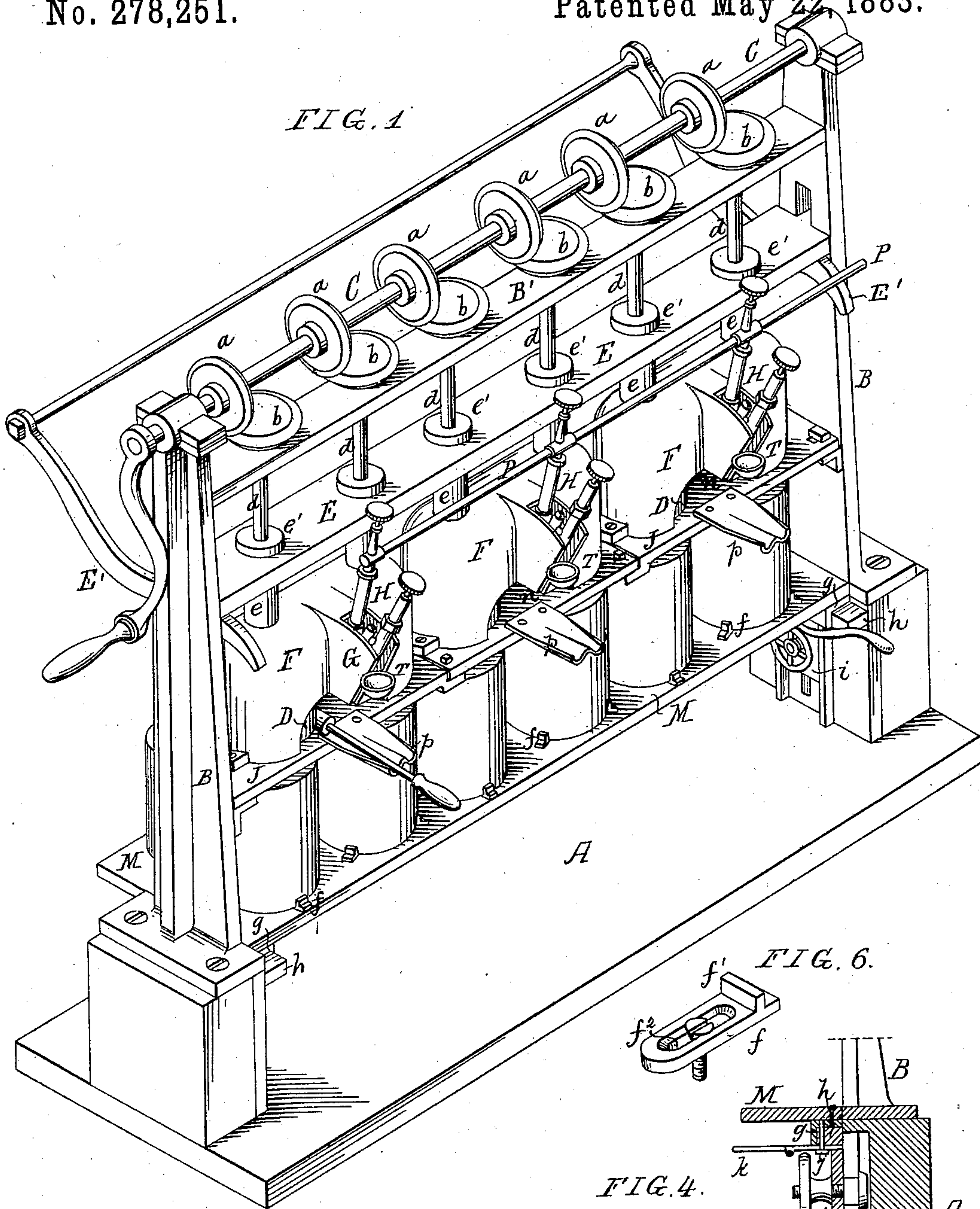
(No Model.)

2 Sheets—Sheet 1.

C. R. MERRIAM.
CAN CAPPING MACHINE.

No. 278,251.

Patented May 22, 1883.



Witnesses
James F. Jobin
Harry Smith

Inventor
Charles R. Merriam
by his Attorneys
Howson and Sons

(No Model.)

2 Sheets—Sheet 2.

C. R. MERRIAM.
CAN CAPPING MACHINE.

No. 278,251.

Patented May 22, 1883.

FIG. 7.

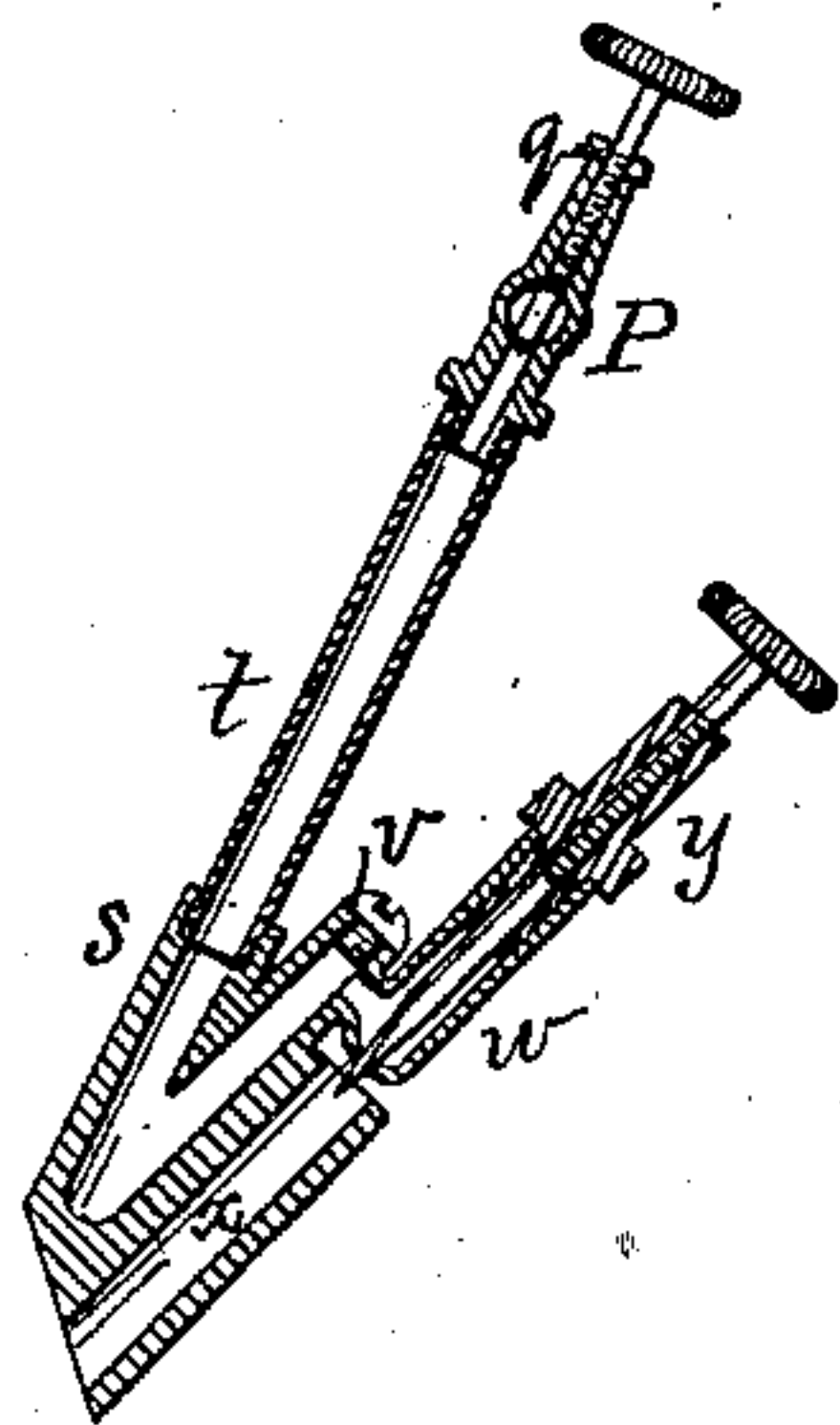


FIG. 2.

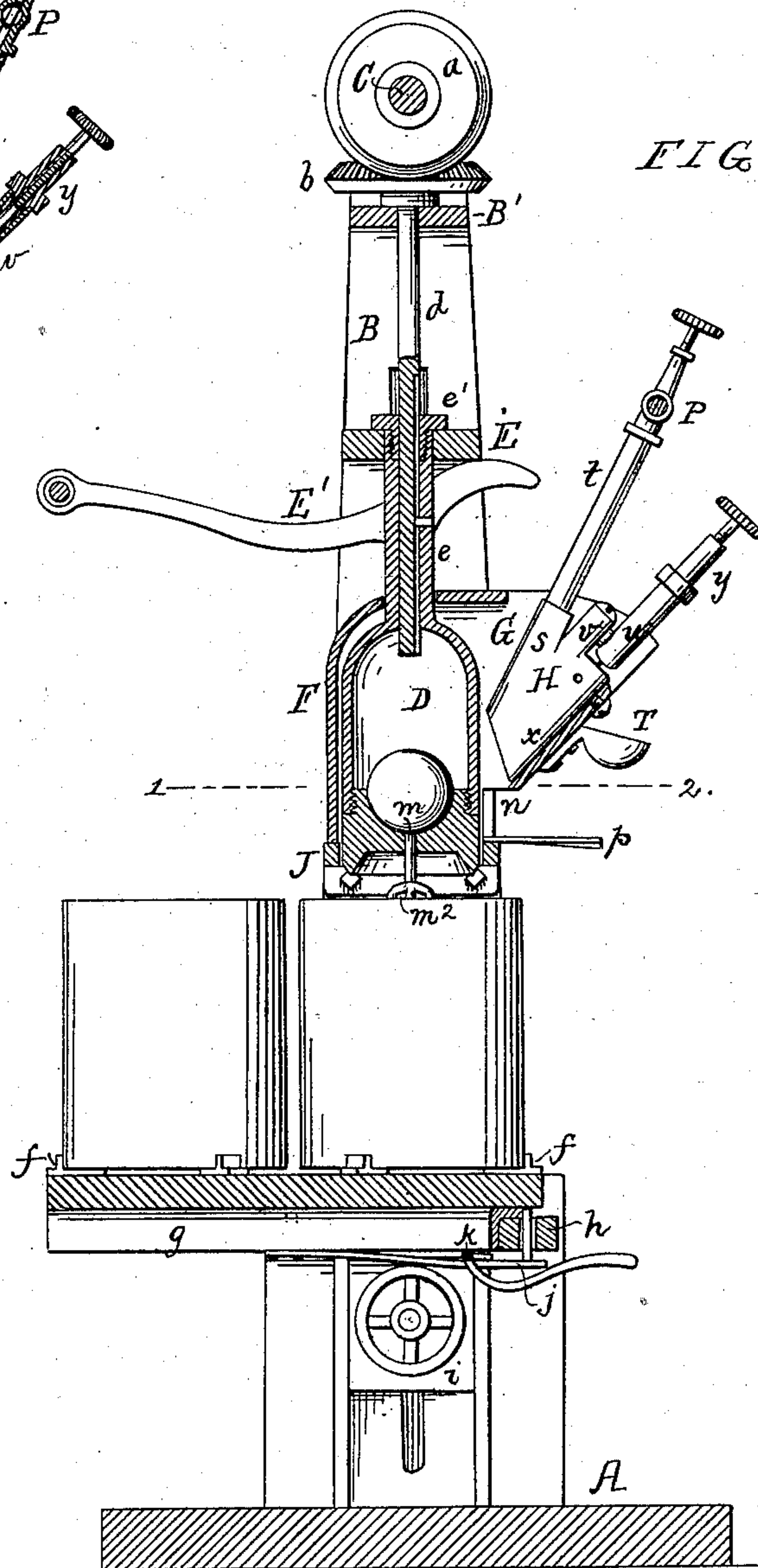
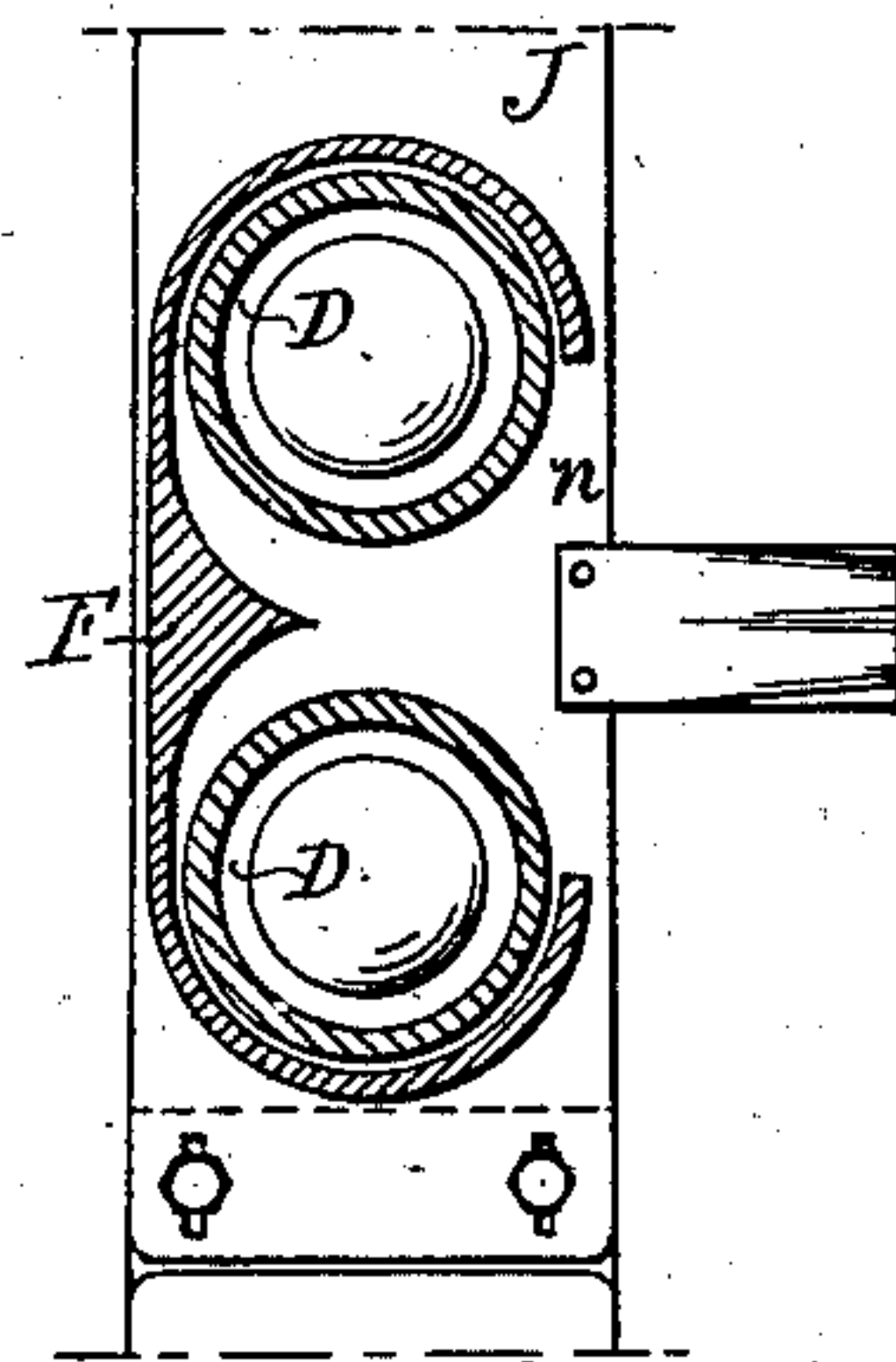


FIG. 3.



Witnesses
James F. Tobin
Harry Smith

Inventor
Charles R. Merriam
by his Attorneys
Howson and Ford

UNITED STATES PATENT OFFICE.

CHARLES R. MERRIAM, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF
ONE-HALF TO FREDERICK S. ISETT, OF SAME PLACE.

CAN-CAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 278,251, dated May 22, 1883.

Application filed November 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES R. MERRIAM, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Can-Capping Machines, of which the following is a specification.

My invention relates to certain improvements in that class of can-capping machines in which a strip of solder in the groove of the can-top is acted upon by an annular soldering-tool heated and caused to rotate, my improvements comprising certain details in the construction of a machine of this class, with the view of rendering it rapid and effective in action, capable of being worked at slight expense, and adaptable to various classes of work.

In the accompanying drawings, Figure 1, Sheet 1, is a perspective view of my improved can-capping machine; Fig. 2, Sheet 2, a transverse section of the machine; Fig. 3, a sectional plan view of part of the machine on the line 1 2, Fig. 2; Figs. 4, 5, and 6, Sheet 1, and Fig. 7, Sheet 2, detached views of parts of the machine.

A is the base of the machine, having vertical standards B, on which are bearings for a shaft, C, driven either by hand or power, and carrying a number of bevel-wheels, *a*, which gear into pinions *b* on vertical shafts *d*, adapted to bearings in a longitudinal bar, B', of the frame. The lower end of each shaft *d* is fitted to a sleeve, *e*, on an annular soldering-tool, D, a groove in the shaft being adapted for the reception of a pin on the sleeve, so that the tool is compelled to turn with, but can move vertically independently of, the shaft, a collar, *e'*, at the upper end of the sleeve *e* bearing upon a bar, E, which can be elevated or permitted to fall by operating cam-levers E', hung to the standards B.

Inclosing the tools D are a series of shields or hoods, F, these hoods being carried by a bar, J, and each being in the present instance duplex, so as to inclose two adjoining tools D. On each hood is a central projecting box or casing, G, containing a vapor-burner, H, the construction of which will be explained hereinafter. The flame from each burner enters the hood and plays around the tools enclosed

thereby, so as to impart a high degree of heat thereto, the lower end of each tool, however, being protected from the direct action of the flame, owing to the fact that said tool fits snugly, but so as to slide freely, in an opening in the bar J, which carries the hoods F.

M is the table which carries the cans, the latter being held in proper position in respect to each other and to the soldering-tools by means of gages or rests *f*, secured to the table M, each of these gages having a lug, *f'*, for bearing against the side of the can, and a slot, *f''*, for the reception of the confining-screw, so that the gages can be adjusted laterally to suit different-sized cans. (See Fig. 6.)

There are in the present instance on the table M two sets of gages *f*, adapted for the reception of two parallel rows of cans, and the table is movable in the frame, so as to bring either row under the soldering-tools, flanges *g* on the under side of the table, at each end of the same, being adapted to rails *h*, carried by vertically-adjustable plates *i* on the end frames of the machine, the vertical adjustment of the plates being necessary owing to the varying height of different classes of cans.

Spring-bolts *j* on the rails *h* are adapted to openings in the flanges *g*, so as to lock the table M in either of its extreme positions, the release of the table being effected, when necessary, by operating a rock-shaft, *k*, having projections *k'*, which bear upon the spring-plates carrying the bolts *j*. (See Figs. 2, 4, and 5.)

In the bottom of each soldering-tool is an opening for the reception of a rod, *m*, the upper end of which carries a weight, *m'*, and the lower end a plate, *m''*.

The operation of the apparatus is as follows: The soldering-tools being elevated, as shown in Fig. 2, the table M, carrying two rows of cans, is deposited upon the rails *h*, each can having the cap applied thereto, and the groove in the top of the can around the edge of the cap having a strip of solder deposited therein. The table being moved to the position shown in Fig. 2, the levers E' are operated so as to permit the descent of the bar E and the soldering-tools D, which are suspended therefrom, and are rotated by means of the gearing shown. The plates *m''* on the weighted rods *m* first

strike the caps of the cans and hold the same firmly in place, and as the descent of the tools D continues the lower edges of the same act upon the strips of solder in the grooves of the cans, the solder being melted by the heat of the tools, and the uniform distribution of the solder in the grooves being effected by the rotation of said tools. When the soldering of the first row of cans is completed the soldering-tools are raised, and the table M is released from the control of the locking-bolts *j* and moved rearward, so as to bring the second row of cans under the soldering-tools, and the latter are then depressed, so as to effect another soldering operation. The soldering-tools being again raised, the table M is removed from the machine and a fresh table carrying another set of cans is introduced into the same, the operations being then repeated. The openings in the centers of the caps are soldered up by an attendant using an ordinary soldering-iron; and in order to provide for the heating of these soldering-irons I form in each hood F an opening, *n*, for the reception of one or more of the irons, plates *p* on the bar J supporting the stems of the irons. By inclosing the soldering-tools in hoods or shields F flames from the burners are confined and directed upon the tools, so that the effective and economical heating of the latter is insured.

It is not necessary to my invention that the hoods should each be constructed to inclose two tools, as shown, as there may, if desired, be a hood and burner for each tool, or a single hood may inclose the whole set of tools, said hood being provided with a number of burner-casings G.

Each burner is constructed in the manner shown in Fig. 2 and in the sectional view, Fig. 7, and consists of a block, *s*, having two tubes, *t* and *w*, communicating with each other through a passage, *v*, in the block. The tube *t* communicates with the oil-supply pipe P, and the flow of oil to said tube is regulated by a valve, *q*. The block *s* and the tubes connected thereto become highly heated, so that the oil, in passing through the tube *t* and passage *v*, is vaporized, the vapor escaping from the tube *w* into a passage, *x*, in the block *s*, and being ignited as it issues from the mouth of said passage. To govern the escape of vapor from the tube *w*, said tube is provided with a valve, *y*.

In starting the apparatus it becomes necessary to heat each burner in order to vaporize the first flow of oil through the same; hence I provide each casing G with a tray, T, for the

reception of some ignitable fluid, the flame from which will heat the burner H.

The bar J, carrying the shields F, is confined to brackets on the standards B by means of screws adapted to slots in the bar, so that the free expansion and contraction of the latter are permitted.

A table adapted to carry more than two rows of cans may be used, if desired, although the construction shown is preferred as the most convenient.

I claim as my invention—

1. The combination, in a can-capping machine, of an annular soldering-tool, a vapor-burner, a hood or shield inclosing the tool, and a bar, J, having an opening in which the lower end of the tool fits snugly, whereby access of the flame to the face of the tool is prevented, as set forth.

2. The combination of the soldering-tool, the vapor-burner for heating the same, and the hood or shield inclosing the tool, and having a projecting box or casing for the reception of the burner, as set forth.

3. The combination of the soldering-tool, the vapor-burner for heating the same, and the hood or shield inclosing the tool, and having an opening, *n*, for the reception of a soldering-iron, as set forth.

4. The combination of the vertical shafts *d* and mechanism for rotating the same with soldering-tools keyed to said shafts, and suspended from a vertically-movable bar, E, as set forth.

5. The combination of the vertical shafts *d*, the soldering-tools keyed thereto, the guided bar E, from which the tools are suspended, and the cam-levers E' for elevating the bar, as set forth.

6. The combination of the standards B, the rails *h*, the movable table M, the spring-bolts *j*, and the shaft *k*, having projections adapted to actuate the bolts, as set forth.

7. The combination of the standards B, the rails *h*, the plates *i*, carrying the rails, and adjustable vertically on the standards, and the table M, supported by and movable on the rails *h*, as set forth.

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

CHARLES R. MERRIAM.

Witnesses:

HARRY DRURY,
HARRY SMITH.