

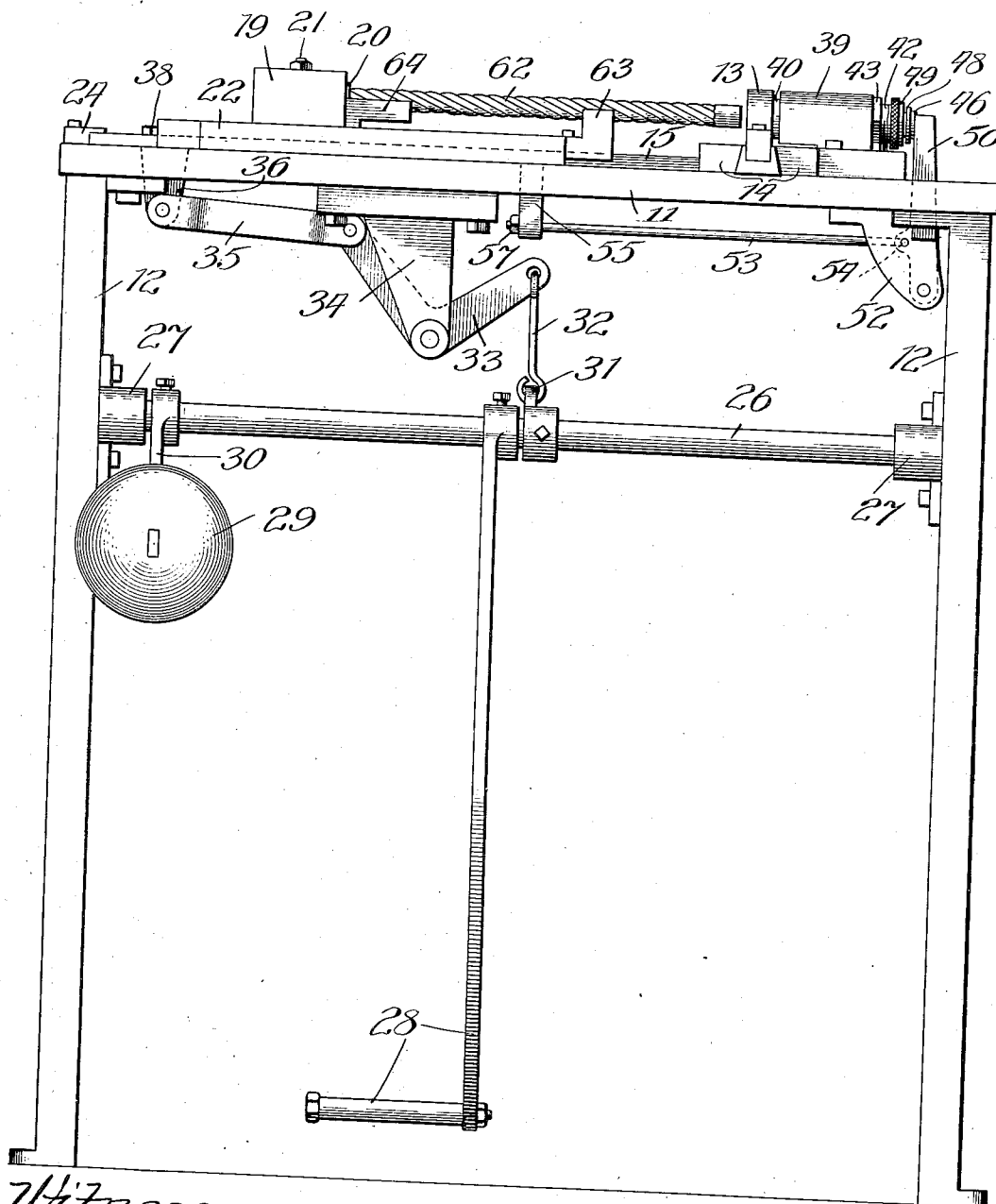
941,083.

C. B. MANBECK.
CANDLE END FORMING MACHINE.
APPLICATION FILED MAY 17, 1909.

Patented Nov. 23, 1909.

4 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
C. B. Manbeck,
Clyde C. Palmer.

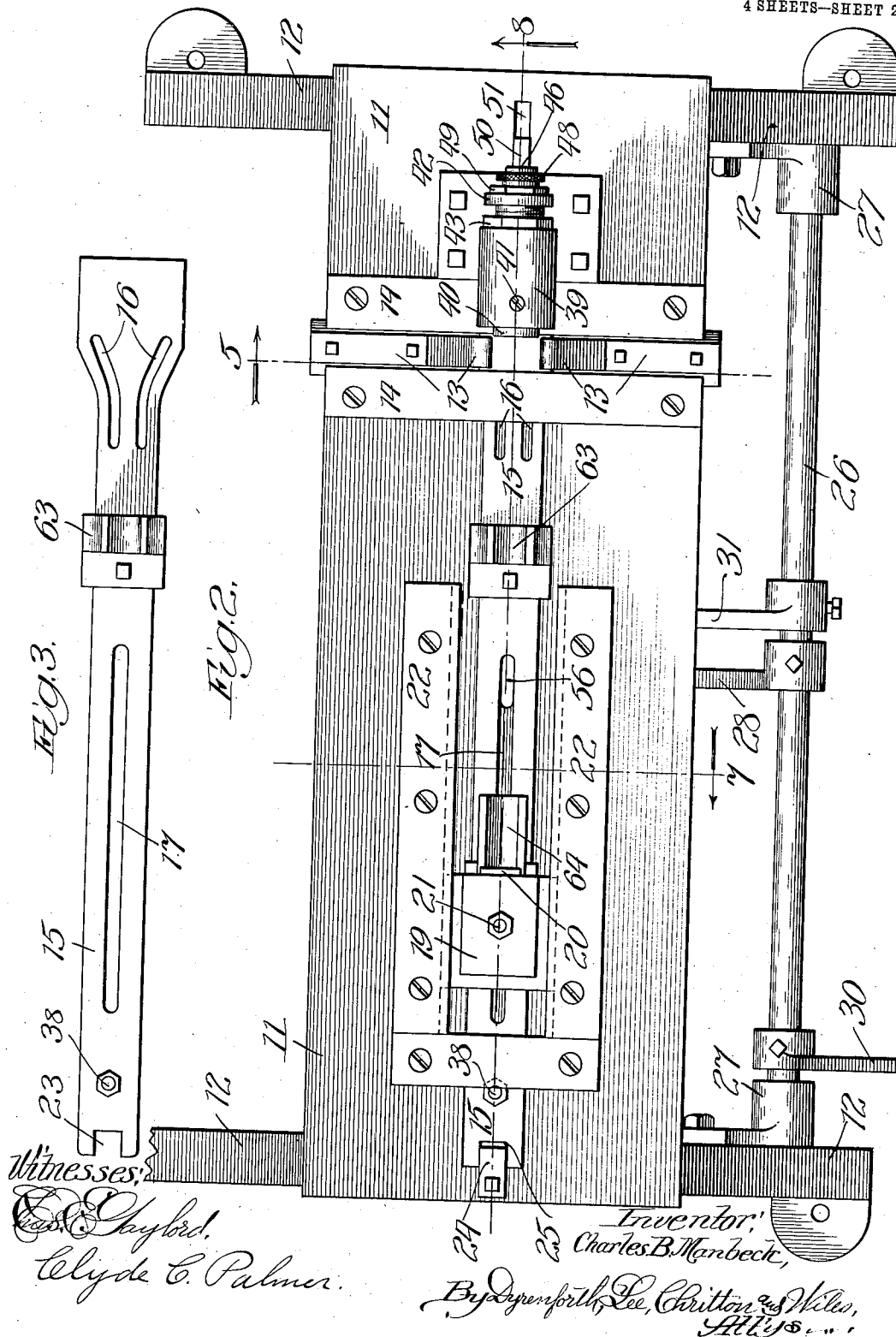
Inventor:
Charles B. Manbeck,
By Dyrenforth, Lee, Critton & Miles,
Attys.

941,083.

C. B. MANBECK.
CANDLE END FORMING MACHINE.
APPLICATION FILED MAY 17, 1909.

Patented Nov. 23, 1909.

4 SHEETS—SHEET 2.



941,083.

C. B. MANBECK.
CANDLE END FORMING MACHINE.
APPLICATION FILED MAY 17, 1909.

Patented Nov. 23, 1909

4 SHEETS—SHEET 3.

Fig. 4.

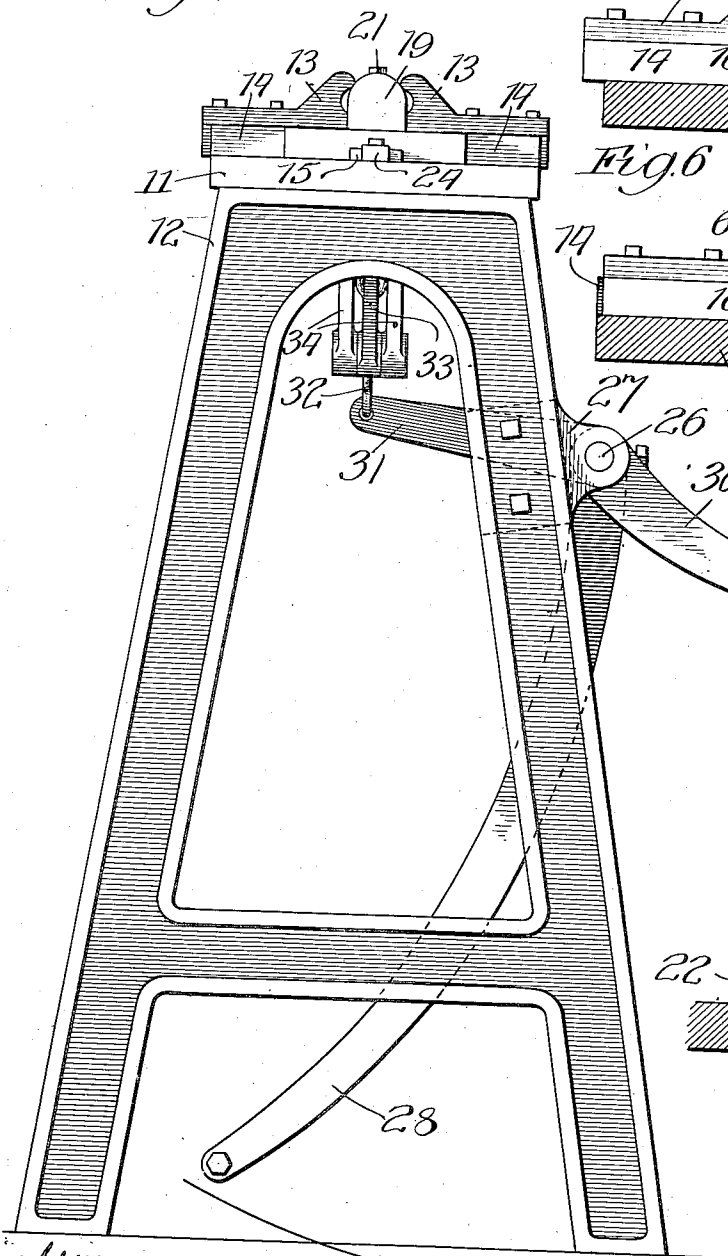


Fig. 5.

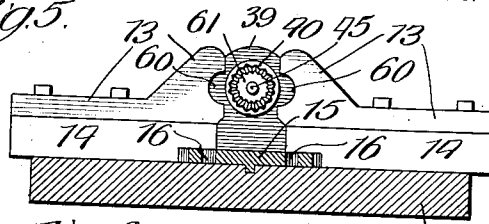


Fig. 6.

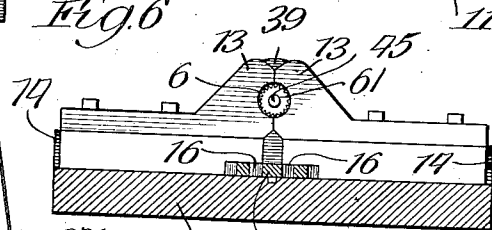
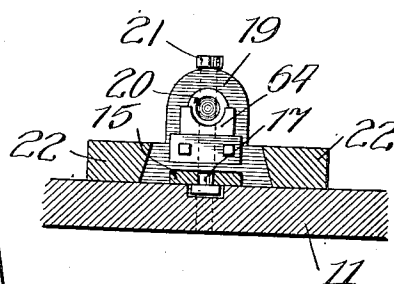


Fig. 7.



Witnesses:
C. B. Manbeck,
Clyde C. Palmer.

Inventor:
Charles B. Manbeck,
By Dyrenforth, Lee, Christian, & Niles,
Attys.

941,083.

C. B. MANBECK.
CANDLE END FORMING MACHINE.
APPLICATION FILED MAY 17, 1909.

Patented Nov. 23, 1909.
4 SHEETS—SHEET 4.

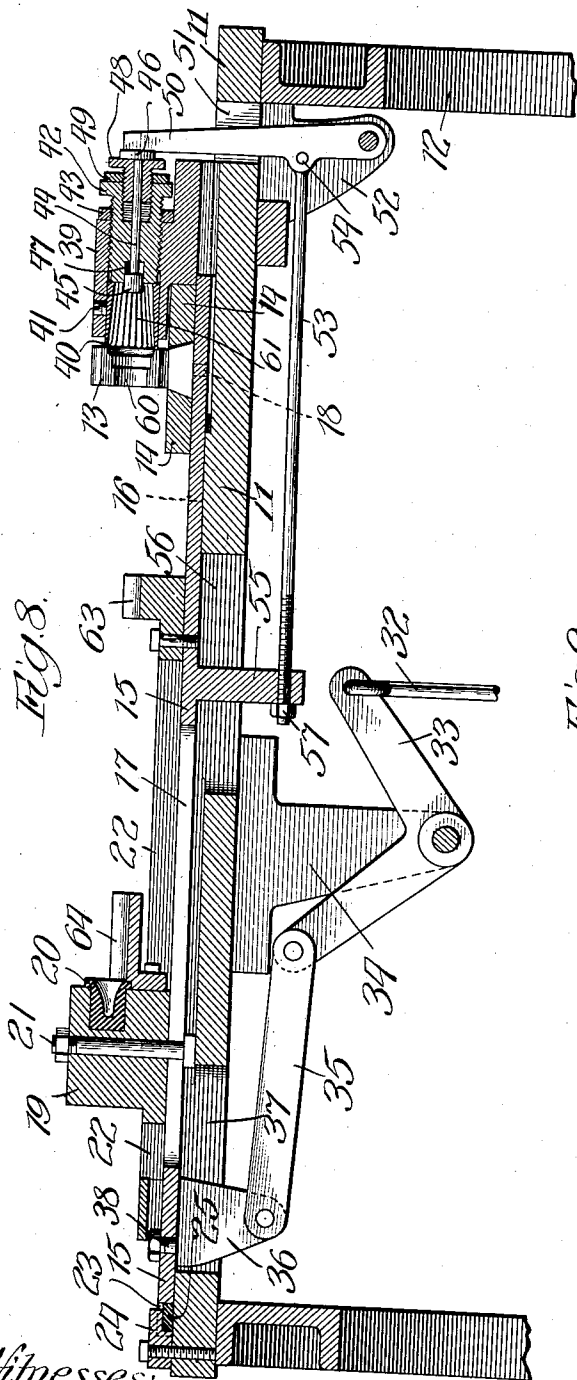


Fig. 8.

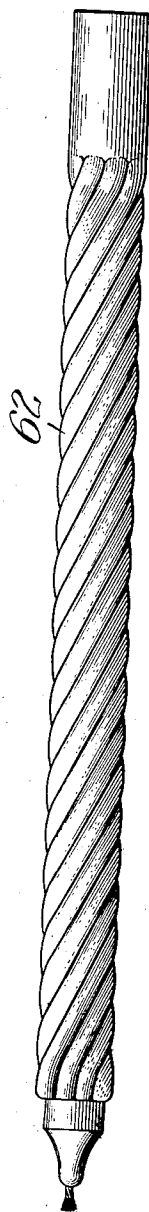


Fig. 9.

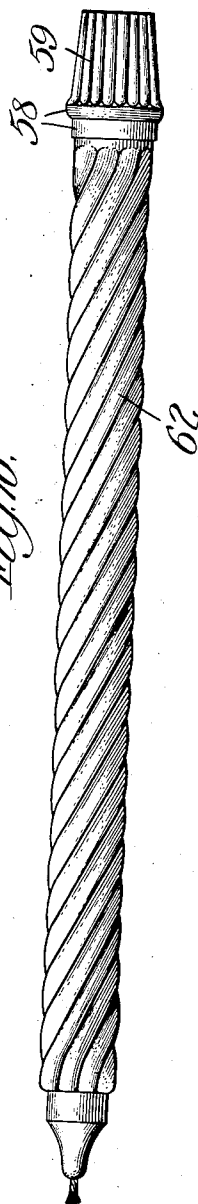


Fig. 10.

Witnesses:
C. C. Chyford,
Clyde C. Palmer.

Inventor:
Charles B. Manbeck,
By Dyer, Forth, Lee, Chittenden & Wiles,
Attys.

UNITED STATES PATENT OFFICE.

CHARLES B. MANBECK, OF WHITING, INDIANA, ASSIGNOR TO STANDARD OIL COMPANY, OF WHITING, INDIANA, A CORPORATION OF INDIANA.

CANDLE-END-FORMING MACHINE.

941,083.

Specification of Letters Patent.

Patented Nov. 23, 1909.

Application filed May 17, 1909. Serial No. 496,594.

To all whom it may concern:

Be it known that I, CHARLES B. MANBECK, a citizen of the United States, residing at Whiting, in the county of Lake and State of Indiana, have invented a new and useful Improvement in Candle-End-Forming Machines, of which the following is a specification.

My invention relates to improvement in machines used for forming flanges on candles adjacent to their lower or butt-ends, and for so shaping these ends below the flanges as to permit the candle to be firmly seated in sockets of varying diameters, in candlesticks, candelabras, and the like.

All candles of one size are molded with their lower ends of uniform diameter but unless a holder is provided with a socket of a corresponding diameter, a candle when placed for use therein fails to be properly seated, with the result that the candle tilts or leans, causing it to burn unevenly and to present an unpleasing appearance which is especially apparent when a number of candles are grouped together as in a candelabra. On account of the varying diameters, and the irregularities of sockets in candlesticks, candelabras and like holders, it has become customary for manufacturers to so form the lower ends of certain varieties of candles (after molding), as to permit of their being crowded into different sized sockets until proper seats are given to the candles to firmly hold them in place. This may be accomplished by forming a shoulder or collar about the candle adjacent to its lower end in shaping the end, below the collar, into a corrugated and slightly conical form.

The object of my invention is to provide a simple and efficient machine of improved construction for thus shaping the ends of these candles expeditiously and uniformly.

Referring to the accompanying drawings:—Figure 1 is a view in rear elevation of my improved machine; Fig. 2 is a plan view of the same; Fig. 3 is a plan view of the slide for actuating the movable mold-members; Fig. 4, a view of the machine in end elevation, as viewed from the left-hand side of Fig. 1; Fig. 5 is a transverse section at line 5, Fig. 2, showing the mold open with the movable mold-members at their extreme outer position, and Fig. 6 is a similar view,

showing the mold closed with the mold-members at their innermost limit of movement; Fig. 7 is a broken section on line 7, Fig. 2; Fig. 8 is a section on line 8, Fig. 2; Fig. 9 is a view in elevation of a candle as it comes from the mold and before its end has been flanged, and Fig. 10 is a similar view of the same after its end has been formed by means of my improved machine.

A bed 11 is supported on legs 12, and two similar mold-members 13 adapted to be moved toward and from each other transversely of the bed are supported thereon near one end between guides 14. A slide-plate 15 provided with cam-slots 16 near one end and with a longitudinal slot 17 (Fig. 3), occupies a position centrally of the bed to be moved lengthwise thereon to actuate the mold-members 13. These latter carry pins 18 in engagement with the slots 16, so that as the plate is moved to the right in Fig. 2 the members 13 are drawn together as shown in Fig. 6, and when the plate is moved in the contrary direction, the members 13 are forced apart as shown in Fig. 5, corresponding with the position they are shown to occupy in Fig. 2. Only one of these pins 18 is shown and by dotted representation in Fig. 8. A head 19 provided with a removable socket-piece 20 is adjustably secured to the plate 15 by a bolt 21 passing through the slot 17, so that as the plate is moved back and forth the head is carried with it to slide between bearings 22 secured to the bed on opposite sides of, and adjacent to the slide-plate 15. This plate is provided with a notch 23 at one end and a stop 24 of the same width as the notch is bolted to the bed and confines a projecting buffer 25 which is engaged by the slide in its return movement, or toward the left-hand in Fig. 8, to absorb the shock and prevent jar to the machine.

For actuating the slide-plate, a shaft 26 is hung in bearings 27 secured to the legs 12, and a foot-treadle 28 held by a set-screw to the shaft, depends therefrom into position to be swung in a backward direction by the foot of the operator to rock the shaft in the direction indicated by the arrow at the end of the treadle in Fig. 4. Upon release of the treadle the shaft is rocked in the reverse direction to return the treadle to its initial

position, by a weight 29 mounted on the end of an arm 30 projecting from the shaft to which it is held by a set-screw. Adjacent to the treadle is secured on the shaft an arm 31 connected by a link 32 (Fig. 1), with one end of a bell-crank 33 which is fulcrumed to a bracket 34 secured to the under side of the bed 11. A link 35 connects the other end of the bell-crank with a lug 36 which passes through a slot 37 in the bed; and is attached to the slide-plate by means of a bolt 38, so that as the shaft 26 is rocked, motion is imparted through its connections with the plate 15 to reciprocate it on the bed. A stationary head 39 is bolted to the bed adjacent to the movable mold-members 13, and a stationary mold-piece or die 40 is held therein by means of a set screw 41 (Fig. 8). Before tightening the set-screw 41, the die is adjusted into close contact with the mold-members 13, by means of the threaded sleeve 42 which latter is then secured against accidental turning by a jam-nut 43. Within the sleeve is mounted a dislodging-plunger 44, provided on its inner end with a head 45 and on its outer end with a head 46. The plunger is limited in its outward movement by the engagement of the head 45 with the end of a recess 47 in the sleeve, which brings the head just flush with the inner end of the sleeve 42, and the movement of the plunger in the reverse direction is limited by the engagement of the head 46 with a stop 48 in the form of a second sleeve. This sleeve, like the one 42, is capable of adjustment in a similar manner, and when properly positioned is held against accidental turning by a jam-nut 49.

A lever 50 with its upper end in line with the plunger 44 and passing through a slot 57 in the bed, is fulcrumed at its lower end to a bracket 52 depending from the bed 11. A rod 53 threaded at one end is pivotally attached at its opposite end at 54 to this lever, from which it extends along the under side of the bed and passes loosely through a lug 55 projecting from the plate 15 through a slot 56 in the bed. Upon this rod at one side of the lug is a nut 57 so that as the slide-plate is moved to the left (Fig. 8), the lug 55 impinges against the nut to slide the plunger to the position shown in this figure, through the medium of the rod 53 and lever 50.

The candle shown in Fig. 10 is provided with an ornamental flange or collar 58 and a corrugated tapering end 59. In order to form the collar and end shown on a candle in the condition represented in Fig. 9, which is that in which it leaves the candle-mold, each mold-member is provided with a semi-cylindrical recess 60 in its face of a form to correspond with the contour of the flange 58, and the die or mold 40 is provided with an inwardly tapering socket 61 properly fluted to produce the shape and corrugations

of the end 59. With the mold-members together in closed condition in the position shown in Fig. 6, they form, in conjunction with the die 40, a complete mold, so that when the end of the candle is upset within, the material of the candle is crowded out to fill the mold producing the collar and end shown in Fig. 10.

The operation is as follows: The head 19 is properly adjusted upon the plate 15 according to the length of candle to be finished and with the parts in their normal position shown in the drawings, the operator enters the tip of a candle 62 in the socket-member 20 (Fig. 1), and rests the candle upon the support 63 secured to the slide 15, and the support 64 attached to the head 19. These supports position the candle in alinement with the mold-members 13. The operator then actuates the treadle which through its connections with the slide-plate 15 carrying the head 19, forces the candle into the mold to crowd the plunger 44 outwardly and to upset the end of the candle in the mold to form the flange and tapering corrugated end. The initial movement of the slide in this direction forces the mold-members 13 together prior to the upsetting of the end of the candle. When the candle end has thus been formed to finish the candle, the operator releases the treadle whereupon the weight acts to rock the shaft and return the treadle to its normal position. The initial movement in this direction through the medium of the slide 15 separates the movable mold-members to the position shown in Fig. 5, and when the lug 55 in sliding on the rod 53 contacts the nut 57, the lever 50 is caused to strike the head 46 of the plunger, forcing the candle from the socket 61 of the die 40, and upon return of the slide to the position shown in Fig. 8, against the buffer 25, the candle is removed by the operator, to be replaced by another for repeating upon it the described operation of the machine. It should be stated that the socket-member 20 is preferably made of soft material such as leather or rubber and provided with a socket of just the shape of the tip of the candle in order to form a complete bearing for the candle at this point and prevent chipping or marring its end.

What I claim as new and desire to secure by Letters Patent is—

1. In a candle-end-forming machine, the combination with a bed, of a mold consisting of a stationary socket-member and a pair of cooperating movable mold members, and means for actuating said members and forcing a candle-end into said mold, for the purpose set forth.

2. In a candle-end-forming machine, the combination with a bed, of a mold consisting of a stationary socket-member provided with a movable plunger and cooperating

movable mold members, and means for actuating said movable members, for the purpose set forth.

3. In a candle-end-forming machine, the combination with a bed, of a mold provided with coöperating movable members, a slide-plate having cam-connections with said members, and means for reciprocating said plate to actuate said members, for the purpose set forth.

4. In a candle-end-forming machine, the combination with a bed, of a mold provided with coöperating movable members, a slide-plate having cam-connections with said members and provided with candle-supporting means, and means for reciprocating said plate, for the purpose set forth.

5. In a candle-end-forming machine, the combination with a bed, of a mold consisting of a socket and a pair of movable members coöperating therewith, a slide-plate having cam-connections with said movable members and provided with candle-supporting means including a socket for the candle-tip, and means for reciprocating said plate, for the purpose set forth.

6. In a candle-end-forming machine, the combination with a bed, of a mold consisting of a socket and a pair of movable members coöperating therewith, a plunger working in the socket, a lever for actuating said plunger, a slide-plate having cam-slots engaging said movable-members and provided

with candle-supporting means, and means for reciprocating said plate and actuating said lever, for the purpose set forth.

7. A candle-end-forming machine comprising, in combination with a bed, a mold consisting of a socket and movable members working transversely of the socket at the inner end thereof, a slide-plate provided with cam-slots engaging said movable members and with candle supporting means, a rock-shaft, connections between said shaft and slide-plate for reciprocating it by rocking the shaft, and a treadle for actuating the rock-shaft, for the purpose set forth.

8. A candle-end-forming machine, comprising, in combination with a bed, a mold consisting of a socket and movable members working transversely of the socket at the inner end thereof, a plunger in the socket, a slide-plate provided with cam-slots engaging said movable members and with candle-supporting means, a lever engaging the plunger, with a rod extending from it into engagement with said plate, a weighted rock-shaft, a bell-crank having a link-connection of one arm with said plate for reciprocating it by rocking said shaft, and a treadle connected with the other arm of the bell-crank for rocking the shaft.

CHARLES B. MANBECK.

In presence of—

J. G. ANDERSON,
L. G. KIRKLAND.