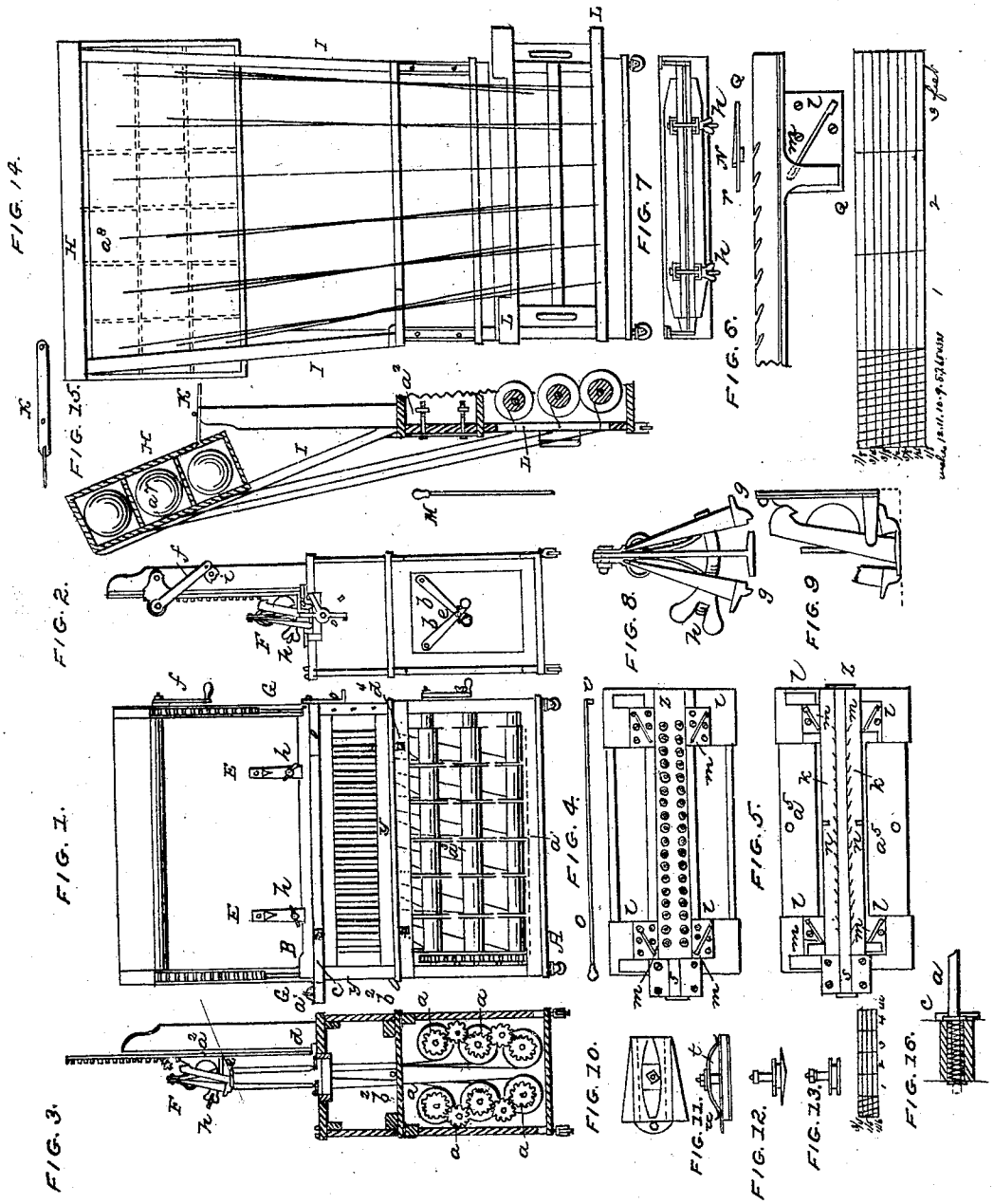
A. HENGSTENBERG.

Candle Mould.

No. 16,056. Patented Nov. 11, 1856.



INVENTOR.

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UNITED STATES PATENT OFFICE.

AUGUST HENGSTENBERG, OF MUSCATINE, IOWA.

CANDLE-MOLD MACHINE.

Specification of Letters Patent No. 16,056, dated November 11, 1856.

To all whom it may concern:

Be it known that I, AUGUST HENGSTENBERG, of the city of Muscatine, county of Muscatine, and State of Iowa, have invented a new Improved Machine for Making or Molding Candles; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, together with the figures also thereon marked.

By the accompanying drawings, the machine is represented in all its parts in various views from No. 1, to No. 15, and also Number 16, as exhibited by the additional drawing—showing front, ground and end views, with geometric drawings and the adopted scale.

Figure 1, represents the machine in a front view. The case or box is made in two parts; one lower (letter "a^1,") the upper (letter "a^2".) The lower, or under box, has, on each side, a door which opens downward, this is to save the wickyarn from dust and filth. When open, the lower box exhibits a front view of 18 spools (letter "a^3" as in the drawing.) The upper box which is the ice and water box is also exhibited as open; so as to show how the machine can be used in winter, or cold weather. In this, also, are seen, in front view 18 candle molds. These boxes or cases are fastened and kept together by screws (letter "a^4"). Fig. 2, is an end view by which the machinery is seen from the outside. Fig. 3, is the other end view, seen from within, as marked (A B Fig. 1). Fig. 4, represents the ground work view of the upper box, open as seen by reference to letters (C, D. Fig. 1). Fig. 5, is, also, a ground drawing of the upper box, or case, (letters C, D, Fig. 1) with two regulators (letter K) by which the wickyarn is regulated, and kept exactly to the middle of the candle molds; and it is covered with a lid (letter "a^5") on both sides. Fig. 6, is a part of a regulator on a larger scale, to give a more distinct idea of this arrangement. (Letter N is to designate an endview of this part of the machine, as shown by letters "Q and *r*.") Fig. 7, is a ground drawing of the candle holder, marked "E E," Fig. 1, is a front view—"F F" Figs. 2 and 3 is an end view of the candle holder. Fig. 8, is an end view of the handleholder shown by E E Fig. 1, and drawn on a larger scale. Fig. 9, shows also an end view as marked by letters "G G" Fig. 1, and the lower part, or layer, on the toothstick "*e*" Fig. 3, on a larger scale. Fig. 10, is a ground drawing of the wick cutter—see letter "A^c," Fig. 1. Fig. 11, is a side view of the same. Figs. 12 and 13, are two end views of the same. These four last named parts are also drawn on a larger scale. Figs. 14 and 15, represent an arrangement of the machinery for winding the wickyarn on the spools. Fig. 14 is the front view, and Fig. 15 is a cut or part view or drawing of the end view, the object of which is to show more clearly the spools which are not drafted or exhibited in the front view by letters Fig. 14 as by Fig. 1, they have been explained heretofore. Fig. 16 (additional drawing) is a cut, or parted, drawing of one of the spools, lying in front, see "a^3" Fig. 1. "*a*" shows a part of the axles. "*b*" shows the screw-formed wire spring; and "*c*" shows one of the pins or shutters.

Explanation of the Plan and Use of the Machine with Reference to the Drawings.

First. Winding the wickyarn on the spools, and drawing it into the candle molds.—The wickyarn, being in balls, as seen by the drawing, letter "a^7" Fig. 15, with these connected is a box, (letters "I I," Figs. 14—15,) containing 18 apartments; each one of which contains one ball. The box has two legs marked letter "I," and is made to stand in an oblique or leaning position, as represented in Fig. "15," on the upper candle box; and by a clamp (letter "K," Fig. 15) is kept stationary. In each compartment of the ball box (letters "I I," Figs. 14—15) is a small hole "a^8," and there are also 18 holes in the wickholder ("L,") through which the yarn runs to the spools. In order to wind up the wickyarn it is fastened, by a loop made on the end thereof, to a hook on the spool.

After fastening the thread, or yarn, as above stated, the "crank" (letters "*b b*" Fig. 2,) is to be turned until 18 spools are filled. The "wheels" ("*a*" Fig. 3,) having, all, an equal number of cogs or teeth, are then put in motion. The six "tin blades" which form the edging of the spools are to be understood, as being attached on the front side of the wheels. In the drawing they are

represented as being behind them for the purpose of affording a clearer, and more particular view of that part of the machinery. While the machine is in motion, one person leads or trains the wick yarn upon the spools by the "leader" ("L" Figs. 14—15) through which the yarn runs; and by moving it back and forward the yarn will be wound up tight, and will be in perfect regularity on the spools. In this manner also it will be done with regularity on both sides.

The wicking is drawn through the molds by a piece of wire, which is bent over and pinched together. A knob or handle is fastened to one end thereof. (See letter M.) Between the folds of the close pinched wire the wickyarn is inserted or pinched in, and then drawn through the molds.

The process of pulling out the cold candles, and cutting the candles off by the machine.—As soon as the candles are cooled the candle-holder is to be run down (from "*e*" to "*d*" Fig. 3) by the use of the crank (letter "*f*," Figs. 1 and 2) and the candle wicks which project out are caught between the "joles" (letter "*g*," Fig. 8) by the use of the thumb-screw (letter "*k*") and screwed tight together; then the candle-holder is turned by the "crank" (letter "*f*" Fig. 2) to letter "*e*" Fig. 3 so as to run upward, when by the "pin" in the toothstick letter "A^2," Fig. 3, which runs in a slit it is prevented from running up too high, and by a "turning catch" letter "*i*" Fig. 2, it will be kept stationary. The candles being, thus, pulled out then by pushing the regulators ("K, K" Fig. 5) from "*l*" to "*m*," where are the cuts or notches letter "*n*" which regulates the wickyarn, exactly to the middle of the molds; by the "winch" (letter "O," Fig. 2,) the regulators are kept stationary, or fixed, until the candles are cut off. On each of the regulators is a pin (letter "*p*") fixed, as seen by the end-view letter "N" Fig. 6, which runs in the slit of the blade (letters *l*, *m*) and serves to move the regulator to and fro, as by letters "*l*," "*m*," Fig. 6, is represented.

The cutting off of the wick, or candles is done by the machine as follows: The wick-cutter, Figs. 10, 11, 12, and 13, which is put into its layer, letter "S," Figs. 4 and 5, is made with three blades; one upper, one middle, and one under blade, the latter of which is the cutting knife. The middle blade is a little thinner than the thickness of the regulators, (letter K, Fig. 5). These three blades are screwed together by a notch or mother-screw, on the top (see letter "*t*" Fig. 11) which keeps them together, and by a spring (see letter "*w*") the cutting knife is kept tight under the regulator. By cutting off the candles when pulled out, the end (see letter "*v*") of the rod (see letter "*o*") in the hole (see letter "*x*" Fig. 10) will be hooked, then, by pushing the wick-cutter from letter "S" to "Z" Figs. 4 and 5 the 36 candles will be all at once cut off, and the wick-cutter will be drawn to its former place again. The candle-holder (see letter "F" Figs. 2 and 3) which fits in its layer (letter "*e*" on the tooth-stick Fig. 3) need not be particularly fastened, and can be taken from the machine with the candles and carried to its appointed place.

Of the ice and water box is is to be remarked, that the flat surface (see letter "*y*" Fig. 1) is covered on each side with "india rubber" and each of the sideboards are fastened with 6 screws (see letter "a^9" Fig. 15.) The inside of the waterbox, particularly around the molds, is pitched over, and the bottom is covered with zinc, which is bent over the brim (see letter "A^{10}" Figs. 1 and 2.) The water is let off through the opening (letter "b^2" Figs. 1 and 3), which is otherwise corked up.

Explanation of the spools with reference to the drawing "Fig. 16."—The machine contains 36 spools made to run on six round iron axles ("*a*" Fig. 16, additional drawing.) There are six spools on each axle. In the hole of each spool around the axle is a wire spring (see "*b*" Fig. "16" additional drawing) formed like a screw, which is attached by one end to the axle. Two-thirds of this spring is but slightly touched, inside, by the spools, and it lags nearly loose around the axle, but one-third of its length is tight in the holes of the spools, so as to make a strong friction thereby with the spool. Thus the retroaction of the machine is performed. By pulling at the wick yarn the spools will retrograde always, a sufficient number of rotations to keep the wickyarn properly stretched. It is to be observed that the axle with the spools only, is to be turned when winding up the wick-yarn upon the spools. The spools two by two are fastened to the axle by a pin (see "*c*" Fig. 16 additional drawing.)

So soon as the winding up of the wick-yarn is done, the pins, or shutters, are to be pulled out, and the axle fixed stationary. Finally on this point, upon winding up the wickyarn upon the spools, they will be filled up to the edges, which will take 125 yards and produce more than 400 candles; so that 15,000 candles can be cast or molded before it will be necessary to wind more yarn or wick on the spools again, which will be only one hour's work for two men.

The process of winding the wickyarn on the spools is accomplished by two cranks fixed on one end of the machine, (see *b b* Fig. 2,) fastened together by a small screw as seen by letter *c*, Fig. 2, so as to fix the axles of the spools stationary they being six in number, small pins or fasteners, are inserted to wind up the wickyarn—which are

to be withdrawn when the yarn is wound up, and the two cranks (see *b b* Fig. 2) referred to above being fastened the machine is again set to work. When winding the yarn the two cranks are constructed so as that one is turned to the right and the other to the left-hand.

Advantages of My new Improved Candle Making or Molding Machine.

Having herewith furnished a specific explanation of the drawings of my machine, and a description of the operation of the apparatus, I will here give a statement of its advantages.

1st. One person can produce by my machine at least from twenty to thirty fold more perfect candles than can be produced by the common mode or handiwork. By my machine thirty-six candles can be molded at once (or one time.) The wickyarn is wound upon 36 horizontally lying spools while each spool by itself is so arranged that the wickyarn after being drawn through the candle-molds at all times remains stretched, because there is on each spool a retrograding power fixed, and one string of the wickyarn never touches another, nor can the yarn become entangled.

2d. The first time my machine is used the wickyarn is to be drawn through the candle-molds by the use of a piece of wire so made that by drawing it through, the inside politure of the moldings cannot be scratched. In the after-use the drawing through is done by a thin string with ease and without loss of time.

3d. The candles being molded and cooled, they are pulled out, all at once, by a candle holder, without hindrance, so safely and securely, that none will be broken, nor will any remain in the molds.

4th. My machine can be easily removed from one place to another even when the tallow is just poured in and is hot. This at certain times is quite an advantage.

5th. All of the 36 candles being pulled out of the molds they are all at once cut off, in a moment, and as smoothly as if done with a razor, however awkward the workman may be.

6th. The construction of the ice and water box of my machine serves in summer time to cool off the candles in the molds. While the ice lies around, the water plays around the molds, the cooling is therefore quickly done. The waterbox is so constructed that no water can run off, yet in cold seasons it can be opened on each side so that there may be a current of air around the molds, and thus the tallow, stearin, or other material of which the candles are made, and the candles can soon be cooled.

7th. By my machine candles can be made out of tallow, sperm, stearin wax, or any other material used for that purpose, with equal facility and it is durable, not likely to need repairing, can be worked continuously without impediment or delay.

What I claim as my invention is—

1. The combination of the spools as constructed in my machine with their gearing, and locking.

2. Also, the securing of the cutter by means of the layer S, substantially, as described, and for the purpose specified.

AUGUST HENGSTENBERG.

Witnesses:

J. WILLIAMS,

JOHN A. AEUER.