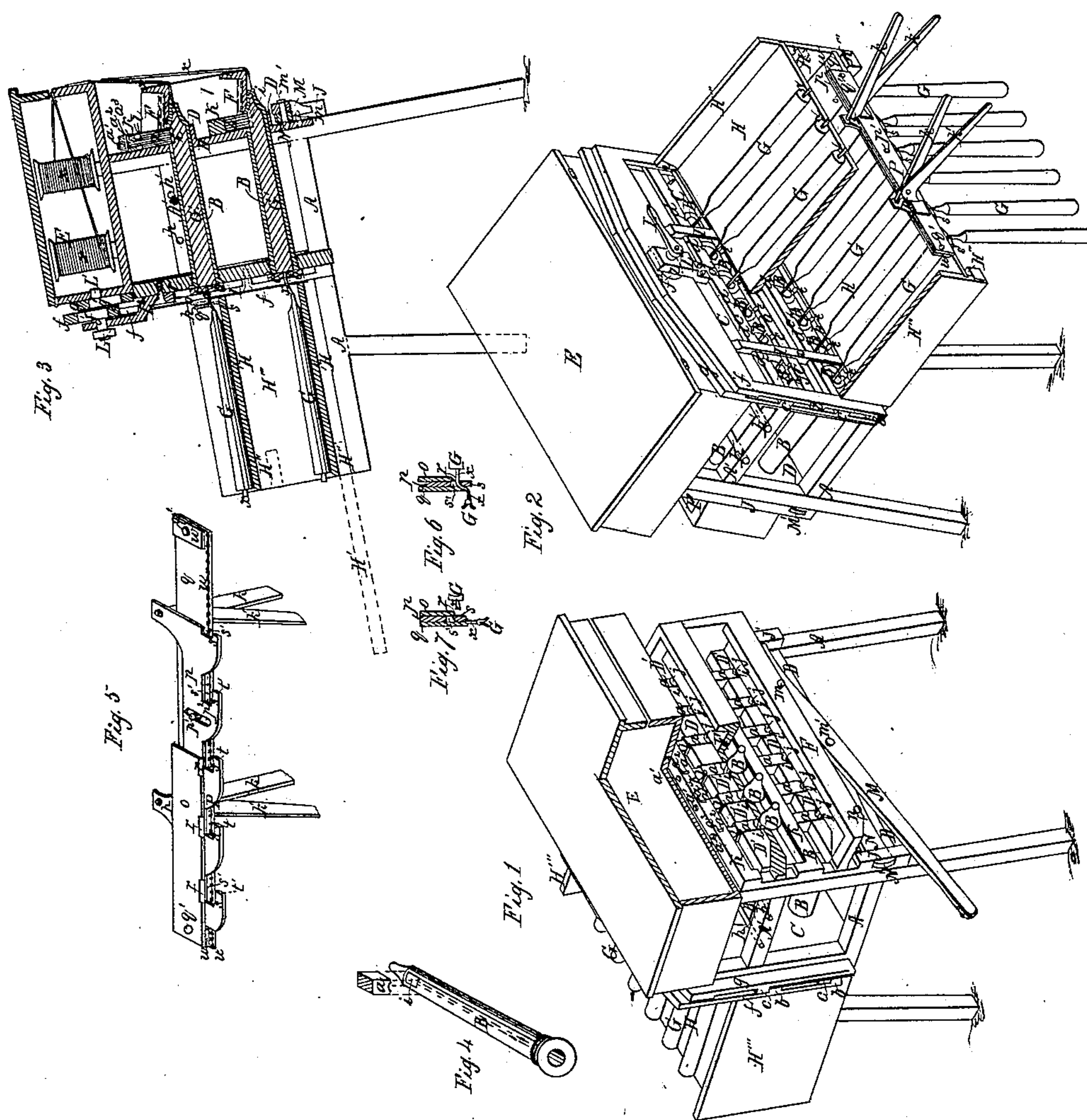


Candle Mold.

Patented Dec. 25, 1855.



UNITED STATES PATENT OFFICE.

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CANDLE-MOLD APPARATUS.

Specification of Letters Patent No. 13,973, dated December 25, 1855.

To all whom it may concern:

Be it known that I, LEWIS C. ASHLEY, of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Apparatus for Making Mold-Candles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is an isometrical representation, showing the front side, top, and one end of my improved apparatus; Fig. 2, a like drawing, presenting to view the back-side, top, and the other end of the same; Fig. 3 is a vertical cross section; Fig. 4 is a view of a detached mold; Fig. 5 is a drawing, showing by dissection the construction of that part of the apparatus used for drawing the candles from the molds and for severing them from the continuous wicks, and Figs. 6 and 7 are cross sections of the same device.

The same letters refer to like parts in all the figures.

My invention consists in making the candle molds of a stand with an opening in the side or tip end of each mold to admit the melted tallow, and combining with said molds a device for temporarily closing the large open ends of the molds and simultaneously centering the wicks thereat during the time of filling the molds and cooling the candles, for the purpose of making the butt ends of the candles with a smooth finish, and in combining with the said combination, suitably shaped stoppers, pistons or slides for closing the said side or tip openings after filling the molds and before the tallow therein becomes hard, to complete the formation of the parts of the candles at these ingates, whereby the necessity of "scraping" the candles at these places to complete their finish is avoided; also in arranging the molds of the kind above named nearly horizontally in the stand, but with the ingates enough higher than the other parts of the molds to allow the air to freely escape from the molds through said ingates at the time of pouring the candles, thus avoiding the use of special vents, which would be needed for the escape of the air which would be confined in filling the molds if the ingates were lower than, or on a level with the other parts of the molds; but still arranging the

molds so nearly horizontal that when they are exposed to the open air they will cool evenly and faster than when the molds are arranged perpendicularly, and so that ice can be conveniently applied, for rapidly cooling the candles, to the whole exposed upper sides of the molds, whereby the small quantity of ice, as generally used, is applied with better effect than when used on vertical molds in the common manner; and so that the wick spools can be conveniently placed above the molds, to prevent being wet by the water of the melting ice; and so that greater facilities shall be secured for manipulating the apparatus than exist when the molds are arranged vertically, but I shall not now herein claim this particular arrangement of the molds in the stand, whereby the advantages of both a vertical and horizontal position of the molds are secured in a great degree, choosing rather to hereafter make a separate application for Letters Patent therefor.

The description of the construction and operation of my improved apparatus, in which the above specified distinguishing principles of construction are embodied or illustrated, is as follows, viz:

A is the frame of the candle mold stand, having a board or plate D, for its front side, and a thicker board or plate, C, as its back side.

B, B, are the candle molds arranged in two series—one above the other (more series may be thus combined) and placed nearly horizontally, the large open ends of the molds being lowest. These molds are supported and held at or near their ends, by the boards or plates C, D, in the usual manner of fastening candle molds in stands.

i, i, i, (see Fig. 4,) are holes or ingates in the sides and near the tips of the molds, through which openings the melted tallow or material for the candles flows and fills the molds, the large open ends of the molds being then temporarily closed. Troughs *F', F'*, are arranged for convenience in filling the series of molds.

E is a box, containing the spools of wick, and placed over the molds, so that the wick shall not become damp, from the dripping water of the mold-cooling ice, as is more or less the case—wherein the wick spools are placed beneath the iced molds.

b, c, and *b, c*, are pairs of narrow plates

fastened to the frames f , and g , (b and b to f , and c , c , to g .) and fitted to slide up and down on the face C of the stand as these frames are thus moved.

5 L' is a shaft with one of its journals turning in the back side of the wick-box E, and the other in the arm L^2 , and having the handle L, and the eccentric rollers f' , g' , firmly fastened thereto. These rollers or
10 cams f' , g' , are made of such size, and are so fitted to work in slots (see Z, Fig. 2,) made through the top and cross-heads of the frames f , g , as to slide the frame f , up and at the same time slide the frame g down, or
15 vice versa, when the handle L is moved, thereby causing the plate b , c , of a pair, to approach each other, so as to close the large ends of the molds, or to recede from each other, so that the candles can be drawn from
20 the molds between these plates. The combined frames f and g slide within suitable guides and the plates b , c , and b , c , are kept pressed close against the face, C, of the stand, by the strips I, I, fastened to said
25 face, in order to insure the tightness of the molds, and the contiguous edges of the plates b , c , of a set, are made to fit together accurately, so as to prevent leakage there. The plates b , b , have small notches e , e , and
30 the plates c , c , corresponding notches d , d , made in their edges, opposite to the centers of the large ends of the molds, for the purpose of centering and holding the wicks w , w , thereat when the molds are closed by
35 these plates. I sometimes employ stop pins y , y to insure the meeting of the plates b , c , in the line of the centers of the molds. In Figs. 1 and 3, the plates b , c , and b , c , are seen together and closing the large ends of
40 the molds, and centering and holding the wicks thereat, as is the case while pouring; but in Fig. 2 these plates are seen slid apart—as is the case while the candles are being drawn. By this mode of construct-
45 ing, and arranging the plates b , c , and b , c , with reference to each other, and to the molds, all the large ends of the molds of both series are simultaneously, and at once closed, and all the wicks centered and held,
50 and the large ends of all the candles as quickly uncovered, by only turning the handle L the proper distance and direction.

J , J' , are the upright end pieces and K , K' , the cross bars of a frame which is fitted
55 to slide up and down within suitable guides on the front face D of the stand.

M is a hand lever with its stationary fulcrum m , fixed in the face D, while the end of its short arm is within a slot, at M' , in
60 the lower end of the upright piece J' .

N is a short lever, turning on the pin n , which pin projects from the front plate D. The outer end of the short arm of this lever is within a slot at N' in the end piece J .

65 The levers M and N are hung together

at m' , the arms $m' m$ and $m' n$ being made of equal length, and the short arm of M is made of the same length as the short arm of N , so that when the handle of M is pushed
70 down, the frame made of J , J' and K , K' will be elevated evenly, and when that handle is raised, the said frame will, in the like manner, be depressed.

a , a , are stoppers, or gates for closing the openings i , i , in the molds. These stoppers
75 are all fastened at their upper ends to the cross bars K , K' and are consequently all simultaneously raised and lowered by actuating the lever M . The lower parts of the
80 stoppers a , a are fitted so as to exactly close the openings i , i , in the molds, when depressed thereinto. The inner surfaces of these stoppers a , a , are made in such shape that when they are inserted in the openings
85 i , i , the inner surfaces of the molds at these places, shall be symmetrical: that is, so shaped that when these stoppers a , a , are pressed down into the openings i , i , after
90 having poured, and before the tallow has become hard, the finishing of the candle at this part will be thereby completed, without the necessity of "scraping" for that purpose. As shown in the drawings, the bot-
95 toms of the stoppers are made in the form of a segment of a hollow cylinder having the same diameter as the mold at their place of insertion, and if the ingates were made in or at the tip ends of the molds, the form of the inner surfaces of the stoppers therefor
100 must be made to suit the configuration of the tips.

D' , D' are projecting blocks, fastened on the front plate, D, of the stand. Between
105 these blocks the stoppers a , a , slide. When the stoppers are raised (see Fig. 1,) gateways j , j , are thereby opened, through which and the ingates i , i , the melted tallow runs into the molds; and when these stoppers are pressed down (see Fig. 3,) the gateways j , j are thereby closed, and a smooth
110 inner side of the trough, F, thereby formed so that it shall be easy to remove the excess of tallow from said trough. I sometimes attach the stoppers to the cross-bars by adjustable connections, as by interposing rings
115 l , l , of india rubber, in order to make all the stoppers of a series fit their seats in the molds closely, when depressed.

h , h' , are rods which extend from one end of a series of molds to the other, and are ar-
120 ranged a short distance above the upper surface of the molds of a series, and at equal distances from each other and from the side plates C, D, and are fastened at their ends to the bars A' , A' . These rods are thus ar-
125 ranged to form a support or ways for the hand-slide used in putting ice on the upper sides of the molds of a series; and to keep the ice from all sliding down on the molds to their large depressed ends.

G, G, are candles recently drawn, though not yet severed from the continuous wicks, α, α .

G', G', are candles in the process of cooling within the molds.

H, H, are shelves (supported by the side pieces H'', H''), on which a set of candles remains until another set is poured. I sometimes employ a second, movable shelf, H', which I temporarily insert at H'', H'', to support the first set of candles while drawing the second set.

P is a device for use in drawing the candles and cutting them loose from the continuous wicks; but other known devices can be effectually employed in its stead.

To use the apparatus, first, the wickspools should be filled, put in the box E, and the ends of the wicks led through the molds to a little beyond the plates b, c , lay the wicks in the notches e, e , and close the large ends of the molds by turning the handle L, when the wicks will all be held in the centers of the molds. Then, after raising the ingate stoppers, as seen in Fig. 1, and drawing the wicks tight within the molds, pour enough melted tallow into the troughs F, F' to fill the molds to overflowing, and let the molds stand to cool. Now apply ice, if it is used, to the top sides of the molds, it being kept from sliding down to one end, by the rods h, h' . Before the tallow in the gateways has become hard, or while it is yet in a fluid or semi-fluid state, sink the stoppers a, a , into their seats (i, i), by raising the handle of M, thus completing the formation of the candle. Next remove the surplus tallow from the troughs by operating with a long handled scraper from one end of the troughs, their sides being made high so as to protect the wicks from disturbance in this operation. When the candles in the molds get hard enough, turn the handle L to simultaneously uncover all the large ends of the candles; and depress the handle of M, to raise all the stoppers out of their seats. Then take the device P, by its handles, and put the hooks thereof down between the wicks that extend from the butt ends of the candles in the molds. Slide the device endwise until the wicks of a row are within the hooks (see s' Fig. 3). Then squeeze the handles nearer together or until the wick is pinched hard enough, and forcibly pull a row of candles from their molds; and as a continuous wick is used the molds will be thereby rewicked. When the candles are thus drawn a suitable distance from the molds to leave sufficient wick at the tips for lighting; press the handles apart, to loosen the wicks and let the candles lay on the shelves H, H, until another set is poured and ready to draw, by repeating the process just described. Then apply the device P, as before, and draw the second set of can-

dles from the molds. Then squeeze the handles k, k' , and k, k' , closer together, when the wicks connecting the two sets of candles will be severed. (See Fig. 7.) Then remove the first set of candles, still hanging from the drawing device, to a receiving table, and then release them. In most cases the candles may be drawn while the stoppers a, a , are yet in the molds, but when special matrix dies are formed on the inner side of the stoppers, for the purpose of casting the trade mark of the manufacturer on the candles, the stoppers must generally be raised before the handles are drawn, as above described.

I will here remark in regard to the improvement of making the molds so that they can be filled at their sides or tip ends, the large open ends of the molds being temporarily closed, that I do not confine myself to making the openings at the particular part of the molds shown in the annexed drawings, for I contemplate making the ingates at any desired place in the side or at the tip part of the molds. Nor do I confine myself to any particular shape or size of such openings, provided the molds can be quickly filled therethrough. Nor is the principle affected or limited by any particular manner of closing the large ends of the molds; the principle only requiring that they shall be temporarily closed in such suitable manner that the finishing of the butt ends of the candles shall be completed thereby. Neither does the manner of arranging the molds in the stand affect this principle of construction, for it is applicable to molds arranged either vertically, horizontally, or in any intermediate position; although I consider the mode of arranging the molds in the stand as represented in the annexed drawings to be the best. Nor does the principle, effectiveness, or value of this improvement essentially depend on the manner of completing the part of the candles at the ingate openings, for instead of completing such finish by stoppers said stoppers may be wholly dispensed with in making candles by molds of this construction, the excess of tallow at the ingates in such case being removed, and this part of the candles also completed, by the simple operation of "scraping" before drawing the candles from the molds in like manner to that by which the butt ends of the candles are completed when made in molds which are, through their large open ends, filled.

In respect to that part of my invention which relates to the mode of completing the formation of the candles at the place where the melted tallow passes into the molds, I will here remark that I do not confine myself to the particular mode herein described of constructing and operating the stoppers by which the ingates are closed, the principle

only requiring that the stopper, slide or piston used should be of such shape and be so applied to the ingate, or open part of the molds through which the molds are filled, 5 that the formation of that part of the candles shall be completed thereby.

I claim as my invention and desire to secure by Letters Patent,

1. The combination of candle molds which 10 have an opening in the side or tip end of each mold to admit the melted tallow, with a device for temporarily closing the large open ends of said molds and simultaneously centering the wicks thereat, substantially as 15 herein described; to make the butt ends of the candles with a smooth finish, and this I claim irrespective of the mode in which the

parts of the candles at said side openings are completed.

2. And I claim the combination of said 20 combined molds and device for closing the large ends thereof, with the stoppers or slides for temporarily closing the side or tip ingate openings in said molds, substantially as herein described, to complete the forma- 25 tion of the parts of the candles at said ingate openings; by which the operation of "scraping" to complete the finish of the candles at these places, is avoided.

LEWIS C. ASHLEY.

Witnesses:

AUSTIN F. PARK,
JOHN MORAN.