2 Sheets—Sheet 1.

M. METCALF.

Bee Hive.

No. 32,952. Patented July 30, 1861.

Fig. 4

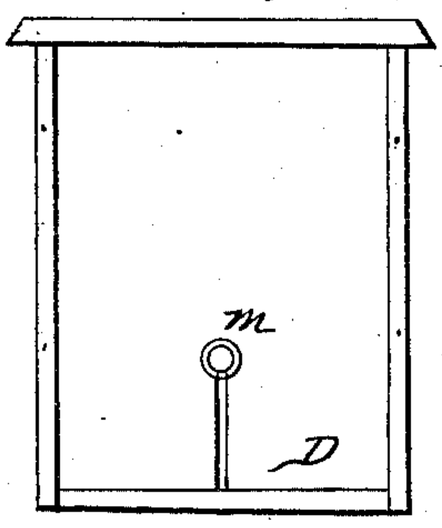

Fig. 5

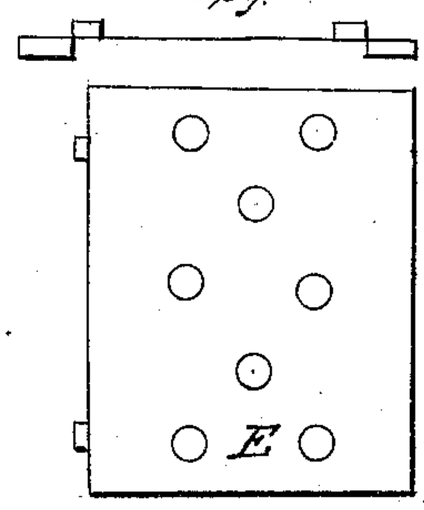

Fig. 6.

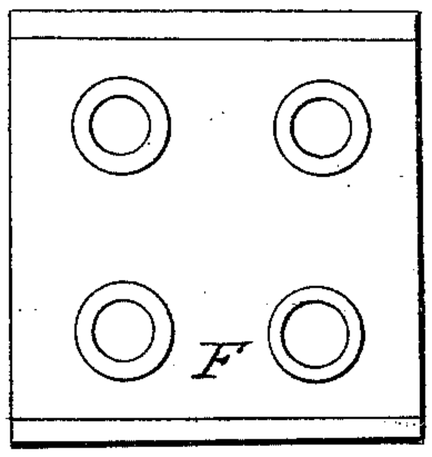

Fig. 3

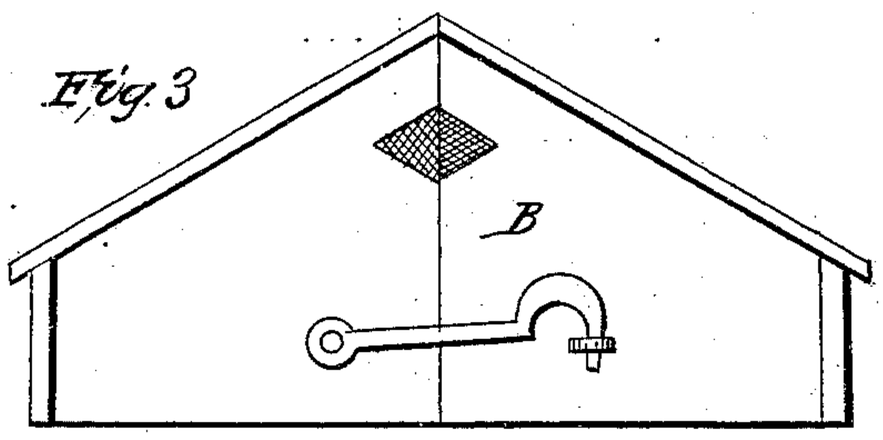

Fig. 1.

Witnesses
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Inventor;
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2 Sheets—Sheet 2.

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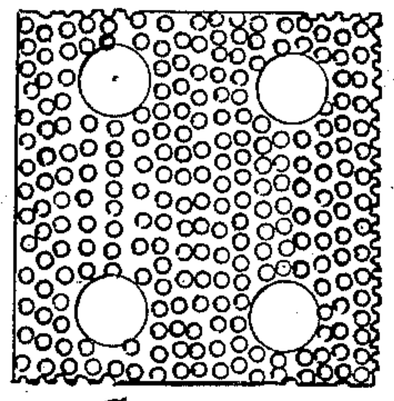
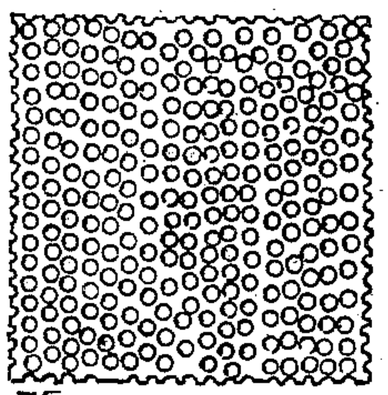
Fig. 7.



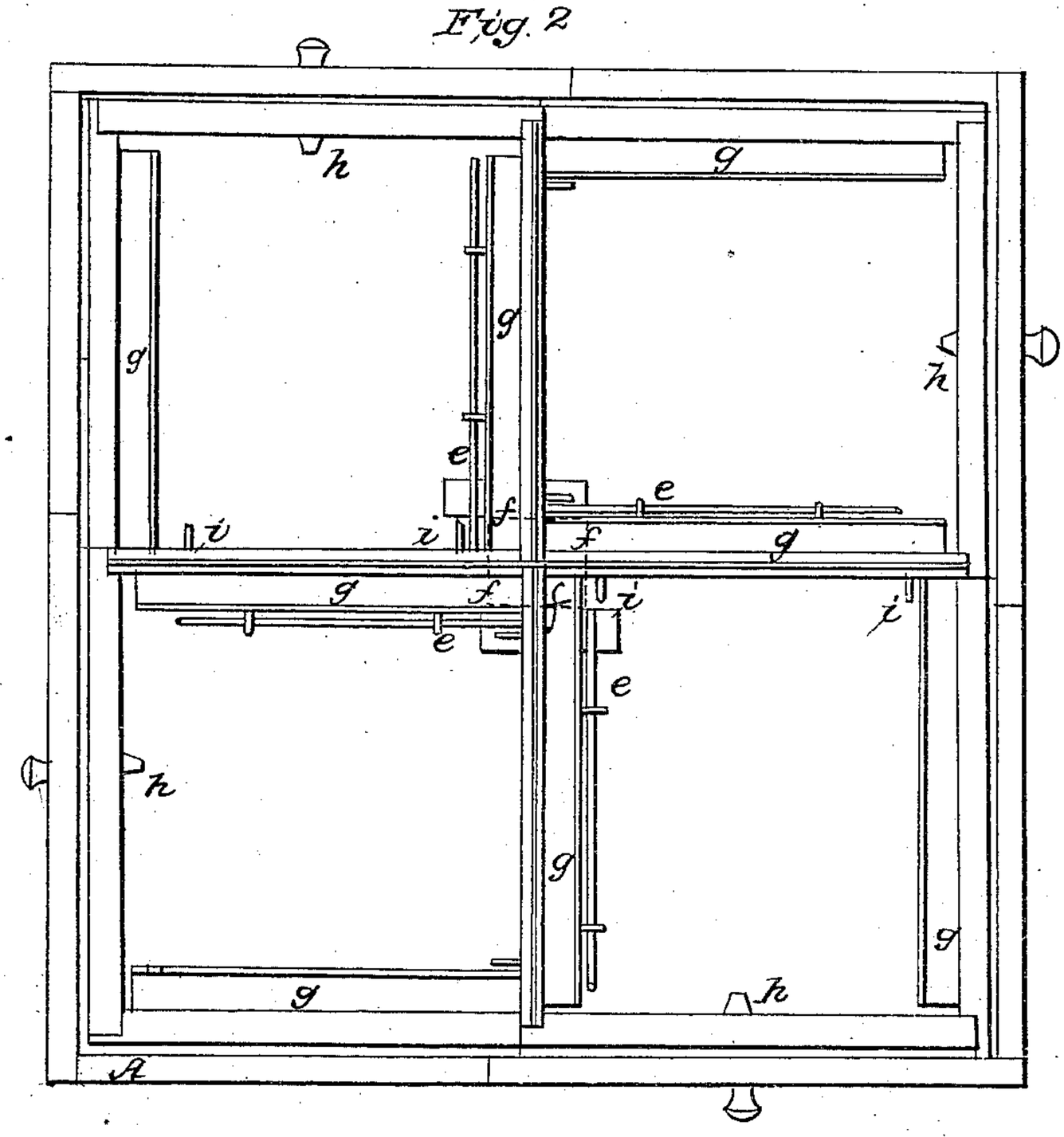
G

Fig. 8



H

Fig. 2



Witnesses;
T. H. Alexander
W. A. Hughes

Inventor;
Martin Metcalf

UNITED STATES PATENT OFFICE.

MARTIN METCALF, OF GRAND RAPIDS, MICHIGAN.

BEEHIVE.

Specification of Letters Patent No. 32,952, dated July 30, 1861.

To all whom it may concern:

Be it known that I, MARTIN METCALF, of Grand Rapids, in the State of Michigan, have invented certain new and useful Improvements in Beehives; 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 and to the letters of reference marked thereon, in which—

Figure 1 is a vertical section, Fig. 2 a plan view, Fig. 3 an end view of the adjustable hinged top, Fig. 4 plan view of frame, Fig. 5 comb guide representing also the manner of turning up one side of same, Fig. 6 wooden top, Figs. 7 and 8 gauze wire tops.

The nature of my invention consists in the peculiar construction and employment of the various parts which compose the hive, and also in the particular mode of producing artificial swarming, to which purpose the parts hereinafter set forth are merely incidental.

To enable others skilled in the art to make and use my invention, I will now describe its construction and operation.

(A) represents a square box, divided off in four equal compartments, as seen in Fig. 2 each one of which is provided with an adjustable door (*a*), said door when placed in proper position is secured by means of cleats (*b b b*).

Immediately under the adjustable doors (*a a*) are hinged the drop doors (*d d*) the object of which is to give the bees greater liberty when desired. The adjustable and drop doors should be beveled where they come in contact in order that the hive may be entirely closed if necessary. It should be observed that there is a small aperture (*f*) at the bottom in each of the partitions. Said apertures are opened and closed by means of slides (*e e*). Thus the bees may be confined to one apartment or they may if preferred be allowed access to all.

(*g g*) represent two strips which are tacked opposite to each other, on the bottom of apartment. Along side of the strips (*g g*) are secured upon edge pieces of tin, the outer end of these pieces is turned up, the object of which will be more fully seen hereafter. The partition walls should be provided with gauze curtains or windows, for the free passage of the breath of the bees, thus giving to the tenants of the hive the same scent to prevent quarreling.

(B) represents an end view of the adjustable top, which covers the hive. Said top is constructed in two parts and hinged together as fully shown in Fig. 3 and each end should be provided with gauze windows and also with a hook and staple, for the purpose of holding the two parts in a rigid or fixed position when necessary.

(C) represents a stand of four legs directly in the center of which is the pivot (*h*) upon which the box or hive (A) revolves.

(K K) represent friction rollers secured on the top of the stand, for the purpose of facilitating the revolution of the hive.

(D) represents a frame, of which a number are employed in each apartment as will be more fully seen hereafter. One end of said frame is connected by means of a strip of tin while the opposite end is provided in its center with a piece of wire of a few inches in length at the end of which wire is secured a tin cylinder (*m*) of sufficient size to allow of a bee passing through. There should also be about four small pins of equal length along the sides of the frames for the purpose of giving a uniform distance between them when placed in the hive. It should be observed that the frames (D D) are painted black, as it has been ascertained that bees will not construct their comb upon black substances.

(E) represents tin comb guides one end of which is turned over in hooks as shown in Fig. 5.

The object of thus crooking or bending the end over in both directions is that it may be suspended between the frames (D) when placed in their proper position.

(F) represents a wooden cover, (G and H) perforated tin covers or lids. The frames are placed in the hive by beginning at the back side and standing the first one perpendicularly, the bottom resting upon slight points of metal while the back is placed equidistant from the back of the hive by means of the pins in frames (D D). On the next frame we hang by means of the turned or hooked edges of tin, one of the comb guides (E) placing this frame with its tin guide also on the metallic rests, so that its own weight when filled with comb will keep it firmly against the first frame. The tin guide is so arranged that it will touch both frames at top, but its side resting against the lower pins of the frame last put in so as to pre-

serve its equal distance from either frame. This operation continues until each of the apartment is filled. The hive is thus filled up temporarily only and the perforated cover placed on the pins (*i i*) projecting from the top of back partition and rests (*p p*) on the inside of movable fronts. The top cover is now put on, and the hinged roof on top covers the whole to protect both bees and surplus honey boxes from the weather.

The tin cylinder in the frames are intended for bee passages through the combs at this point, when the comb is constructed all through the hive. After the frames and bees have remained in the hive long enough to half fill the frames with comb, the top cover is removed, but before giving the bees their liberty, we gently sprinkle them with sweetened water, when we may safely remove the perforated top, turn down the drop door, and turning the buttons on the outside of movable door, pry that off, (it will be glued fast,) and laying it aside, inside up so as not to crush any of the bees, we may remove one by one the frames, inspecting or using them as we see fit. The comb guides may now be removed, and the frames when placed back, should alternate with empty and full ones so as to secure straight and even comb. We must then gently slide down the movable door or front and if we have done swarming for the season and are ready for the honey harvest, leave out the perforated top, and only place over the frames the honey board and boxes. If swarming is not done, replace the perforated top. It is for protection while sprinkling the bees. This hive is intended when fully occupied for wintering, to contain four separate independent colonies of bees. In spring as soon as bees begin to fly, we transfer frames and bees leaving but one occupant in the premises. These occupy one apartment using the tenantless only as passages to and from the fields. When drones appear we take a frame, bees and brood for each unoccupied apartment (being careful not to get the queen) and closing the communication by means of the slides we leave one card of comb in each apartment and thus detach a small colony of bees. Many of them will return to the parent hive, but enough of those which are in the habit of using the outer passages to their new quarters (the center being cut off) will now cluster on the brood and eggs and rear a queen from the brood thus furnished them. When this is done, which will be in from 21 to 30 days, we turn the hive on its axis one-fourth the way around bringing one of our little stocks in the parents place for a few days only to be recruited by the greater number of bees working at that point, after which we bring each one, one after the other to the same point for the same period and purpose and at any time when we discover any irregularity of stocks (which is of the first importance) all we have to do, is simply to rotate the hive, thus may artificial swarming be most expeditiously and successfully accomplished with comparatively but little trouble.

Having thus fully described my invention what I claim and desire to secure by Letters Patent is—

1. The employment of a revolving bee hive—so arranged that artificial swarming may be produced substantially in the manner specified.

2. The employment of the movable frames (D D)—provided with cylinder (*m*)—when used in connection with a revolving bee hive in the manner and for the purpose set forth.

MARTIN METCALF.

Witnesses:

T. SINCLAIR,

C. H. CHASE.