To all whom it may concern:

Be it known that I, E. KRETCHMER, of Co- 
burg, in the county of Montgomery and the 
State of Iowa, have invented certain new and 
useful Improvements in Bee-Hives; and I do 
hereby declare that the following is a full, 
clear, and exact description thereof, reference 
being had to the accompanying drawing, and 
to the letters of reference marked thereon, 
which form a part of this specification.

The nature of my invention consists in the 
construction and arrangement of a bee-hive, 
as will be hereinafter more fully set forth.

In order to enable others skilled in the art 
to which my invention appertains to make and 
use the same, I will now proceed to describe 
its construction and operation, referring to the 
annexed drawing, in which—

Figure 1 is a longitudinal vertical, and Fig. 
2 a transverse vertical, section of my entire 
bee-hive. Figs. 3 and 4 show portions of the 
honey-boxes, and Fig. 5 shows the feeder 
and ventilator.

A represents the bottom board, B the roof, 
and C the end doors forming the outer body 
or case of the hive. D D are the upper cross-
rails of the frame-holder. E E are movable 
comb-frames; F F, sectional honey-boxes; G, 
glass-sided honey-boxes; and H, the combined 
bee-feeder and hive-ventilator. The frame-
holder is set loose inside of the case, leaving 
a suitable distance between it and the doors 
C C. This frame-holder consists of cross-rails, 
D, and vertical bearers, I, which rest on the 
bottom A. These are kept at suitable dis-
tance from each other by the piece K and 
metal strips a and b. On the rabbets cut in 
the rails D rest the comb-frames E, as shown 
in Fig. 1, arranged side by side in such a man-
er that all the frames with the frame-holder 
can be lifted out of the case without disturb-
ing the boxes; and then the frames can be 
taken from the frame-holder either vertical or 
horizontal, as circumstances may require, thus 
giving free access to the brood without dis-
turbing the surplus honey-boxes even should 
the combs not be built true. The under side 
of the top bar of each comb-frame E is pro-
vided with a waxed comb-guide, d. This 
comb-guide is made to approach nearly the 
natural shape of a comb about one-half inch 
deep—namely, V-shaped. The comb-guide of 
my frame consists of a square bar, (the angle 
of the bar may, of course, be slightly varied,) 
one corner and part of two next adjoining 
side being coated with wax, and by passing 
it over an engraved wheel the waxed parts 
are shaped, not as the foundation or base of 
comb-cells, nor as their sides, but to a shape 
as viewed when cutting the comb out at right 
gle about twenty-five degrees equal to the lower 
part of a newly-built comb, whereby the bees 
are induced not only to commence and con-
tinue the building of straight comb, but also 
to build either worker or drone comb, accord-
ing to the size of cells impressed, in a more 
therough manner than is usually the case. 
Honey-boxes are arranged at each end of the 
frame-holder. These boxes are placed be-
tween the bearers I I, being kept at suitable 
distance by these pieces from the sides of the 
frame, so as to permit the fingers for easy re-
moval of the boxes, said boxes nearly touch-
ing the ends of the frames B with no parti-
tion between the boxes and frames, thus giv-
ing the bees free access to the boxes. The 
metal strips b hold the boxes sufficient dis-
tance from the ends of the frames to allow a 
passage to the bees. One series, F, of these 
boxes consists of several sections, e, as shown 
in Fig. 4, each holding one comb, and the tops 
and bottoms e' being made wide enough to 
have the several edges touch each other, and 
the rear-end pieces narrow forming bee-pas-
sages between the sections. The front-end 
pieces i are likewise narrow and set back 
about one-quarter of an inch from the ends of 
the top and bottom. After several sections 
are arranged side by side a glass, n, is placed 
against them, being kept a suitable distance 
from the pieces i by the projections of the top 
and bottom. The sides of the outside sections 
are closed by boards s, and the several sec-
tions, side boards, and glass are held firmly 
together by strips l of tin folded at right 
angle over each corner. Thus constructed a 
view is obtained of both sides of every comb, 
a substantial box for shipping is obtained, and 
when the honey is used one section may be 
removed, the side board slipped within the 
tin corners against the next section and re-
tained by simply bending the tin.
In such parts of the country where goldenrod blooms abundantly bees store a large quantity of surplus honey late in the season, but at such times they will not build comb sufficiently straight to use the sectional boxes; hence a different style of box must be furnished. I prefer the box G, the sides being of glass, the top and bottom of wood held together by pieces of tin bent at right angles around the corner. The pieces g of tin are first properly shaped and bent at right angles in the center. When adjusted to the box the parts o each hold one side of the glass from falling to the center, the parts w lap over the corner of the wooden top and bottom, and the point p is driven into the wood. I also provide my hive with a bee-feeder and ventilator, H, consisting of a round cup, the disk at each end being set back from the edge. One disk is perforated and a metal screw-cap, S, fastened over the perforation. The screw-cap itself is perforated in such a manner that each hole forms a miniature tube, from which the food comes in separate drops. To use it the cap is unscrewed, sirup or liquid honey placed in the can, the screw readjusted, and the screw-cap placed in a hole bored through the roof-board B, the bees drawing the food from the miniature tubes of the screw-cap. As the pressure of air prevents the liquid from running the bees are directed to it by pressing on the then upper disk, whereby a portion of the food is ejected below. It can also be used to furnish bees with water or meal. The projecting part of the sides gives the feeder a firm stand on the hive, and also receives any sirup that may run past the central hole while filling it. The opposite end of this feeder is arranged as a ventilator to be used when not used as a feeder, as shown in Figs. 1 and 5. A tube, r, is

fastened to the center of the end disk, which tube fits closely in the hole of the roof B. On one side of this hole is cut a recess, z, communicating with a hole, y, in the side of the tube r, allowing foul and heated air to pass into the chamber x formed by the projecting sides of the cup, which are perforated, allowing foul air to pass out as indicated by the arrows. By turning the ventilator so that the hole y is changed from the recess z all upward communication is closed.

When it is desired to use frames only, so as to extract the honey with a honey-extractor, the boxes and frame-holder are removed and the frames hung on rabbets cut on the upper edges of the sides of the case, holding thus a double number of frames. Honey can thus be taken in large quantities, and when the honey season is past a division-board may be inserted, dividing the number of frames into equal halves, and a queen raised for the queenless part.

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

1. The parts S and r of the feeder and ventilator H, in combination with the roof B or its equivalent, in the manner and for the purpose set forth.

2. The ends of metal corners of glass-sided honey-boxes, made with parts o o, m m, and p, in the manner and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

EDWARD KRETCHMER.

Witnesses:

I. BRETSCHMER,
H. BABE.