Improved Pricker Pad

BEEKEEPERS in areas where the honey produced will not leave the combs freely use an implement known as a pricker pad. This article by D. Roberts, Apiary Instructor, Department of Agriculture, Auckland, describes an improved pricker which requires less time to operate, is less severe on combs, and enables more honey to be extracted.

HEAVY thixotropic (jellifying) honeys cannot be satisfactorily extracted without the use of a pricker pad. To manipulate the pricker in its present form is tedious and severe on the combs. In addition complete removal of the honey from the combs is not possible, as not more than from 75 to 80 per cent. can be recovered. Because of the extra work entailed, the reduced life of the combs, and the limitations to the amount of honey that can be extracted, any improvement in the design of the pricker pad that will increase its efficiency should be welcomed by apiarists.

Messrs. Belin brothers, of Milford, Auckland, operate their apiaries in an area where the honey produced is mainly manuka and they have developed a steam-heated pricker pad of greater efficiency than the type in general use. Results over a period indicate that much more honey can be obtained from the combs and it is not unusual for the combs to be extracted entirely free of honey.

Construction of Pricker

Damage to combs is practically eliminated and the time saved is considerable, as the combs are pricked on one side only. Although the pricker is not as simple to make as the common type, its construction should not be beyond the average beekeeper. No high degree of technical skill is required, but the work takes time, and accuracy in the positioning of the pins is essential.

[*Sparrow Industrial Pictures Ltd. photo.*

The steam-heated pricker pad.

Materials

The materials required are three pieces of 18-gauge copper sheet, one 7in. x 6½in., one 6in. x 5½in., and one 6½in. x ¾in.; 2 strips of metal 3¾in. x ¾in.; 2 pieces of copper pipe similar to that used for the boiler of the uncapping knife; 1 wooden handle about 5in. long (the handle of a discarded electric iron is excellent for the purpose); 2 brass bolts ¼in. in diameter and ½in. long with nuts and washers; and about 700 heavy-gauge plated brass pins 1⅛in. to 1½in. long (the type known as blanket pins is satisfactory).

For those who have not access to a high-speed drill, 18-gauge brass sheet could be used in place of copper, as brass is much easier to drill.

Necessary tools are a soldering iron, tin snips, and a small drill.

The working surface of the pricker illustrated is 5in. x 4¾in., sufficient to treat one-sixth of a comb at each insertion.

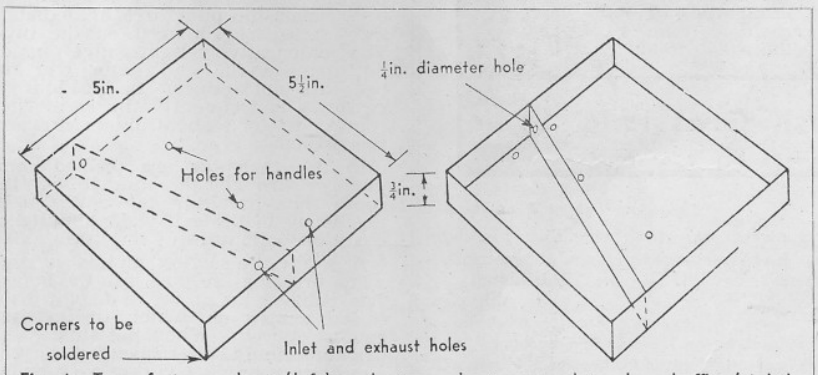

Fig. 1—Top of steam chest (left) and steam chest reversed to show baffle (right). Note that the baffle is placed between the inlet and exhaust holes and so that it does not obstruct the holes for the handle.

Making Steam Chest

A square of comb foundation is laid over the piece of copper 7in. x 6½in. and an area 5in. x 4¾in. is marked out for drilling, care being taken that the holes are in the middle of the cell bases. An area ¾in. wide is then marked out all round the area to be drilled and the metal remaining outside the drawn lines is bent up to form a shallow oblong container ¾in. deep. This serves as the steam chest.

When the holes for the pins are being drilled a piece of wood should be attached to the underside of the metal so that the holes continue through the wood. This forms a jig which will ensure that the pins maintain their correct position when soldered into place. Care should be taken in drilling to ensure that the holes provide for a neat push fit only.

After the sides and ends have been formed and the pins soldered into position a strip of copper ¾in. wide is fixed lengthwise in the centre of the container. This strip has a ¼in. hole bored ½in. from one end, and the strip is placed in position with the hole at the end opposite the steam inlet and exhaust openings. The piece of copper sheet 6in. x 5½in. is then bent over ¼in. all round to form the lid of the steam chest. Before the lid is soldered in place, two ¼in. holes are drilled 3½in. apart to take the bolts which hold the handle brackets. The strip when affixed should be given sufficient diagonal inclination to clear the heads of the bolts which hold the handle brackets. Two further holes are drilled ¼in. from the end of the lid to take the copper steam inlet and exhaust pipes, which should be of the same size as those used in the uncapping knife so that an equal distribution of steam is obtained. These holes must be positioned so that they fall

CONSTRUCTION OF STEAM-HEATED PRICKER PAD

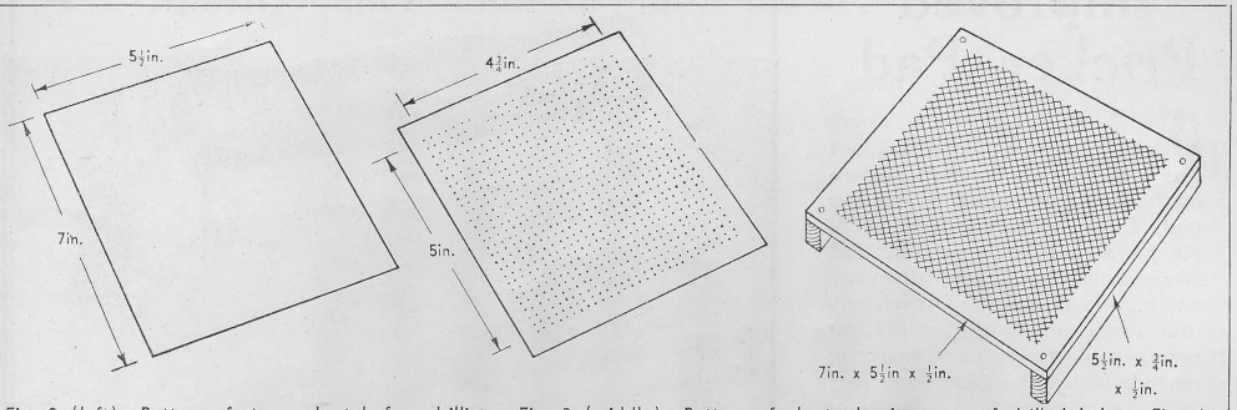

Fig. 2 (left)—Bottom of steam chest before drilling. Fig. 3 (middle)—Bottom of chest, showing area of drilled holes. Fig. 4 (right)—Jig and bottom plate screwed in place and marked for drilling.

one on each side of the central dividing rib to ensure that steam is constantly available the full length of the pad. Steam should flow from the inlet along the container to the hole in the central rib at the opposite end, back along the other side to the exhaust. The pad is thus maintained at a constant temperature all over.

Alternative Method of Construction

Another and perhaps simpler method of construction is shown in Figs. 1 to 5. The top sides and ends of the steam chest are made from a sheet of metal 7in. x 6½in. (Fig. 1) and the working surface which is the portion containing the pins is made from a piece of metal 7in. x 5½in. (Fig. 2). This piece is screwed to a block of dressed wood with squared edges (Fig. 4). An area 5in. x 4¾in. is marked out (Fig. 3) using comb foundations as a guide for the pin holes. To plot the holes with greater accuracy a carpenter's bevel may be employed to form a series of diagonal lines from each side, the pins being inserted at the points of intersection. After the holes are drilled and the pins soldered into place the piece of metal which has been formed into the steam chest including the dividing rib is now placed in position and the two sections soldered together, excess metal being then cut away. In this method the working surface holding the pins is not turned up, but is simply a flat plate and is held to the steam chest by a fillet of solder (Fig. 5).

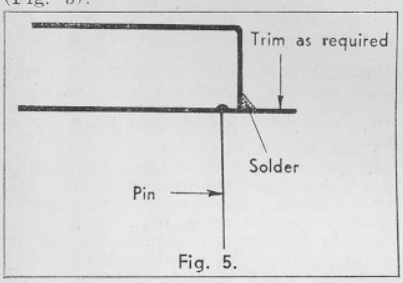

Fig. 5.

To ensure that the hands do not come into contact with the hot steam chest, the handle brackets should be arranged so that the handle is at least 1½in. above the steam chest.

Use of the Pricker

It will be noted that the dimensions are considerably smaller than those of the type of pricker in general use, as similar dimensions applied to this type would be unsatisfactory, because the pins are pushed completely through the midrib of the comb, which creates resistance. Experience has proved that penetration of the comb midrib by the pins does no harm and the bees repair the punctures immediately the combs are replaced on the hive. The comparatively light-gauge pins do not damage the cell bases and the bees are not induced to build drone comb, as is frequently the case when combs are torn about by prickers of the orthodox type.

In use the pins are pushed completely through the midrib of the comb thus breaking the adhesion of the honey to the cell walls simultaneously on both sides of the comb.

A slight see-sawing motion is used when pressing the pins into the honey. The usual type of metal tray with a raised centre on which to rest the combs is used. When not in use the pricker should be suspended by the handle to a bracket within easy reach. A metal drip tray is fastened underneath the bracket to catch any honey dripping from the pricker.

Australian Rice Harvest

[*Australian Official Photograph.*

A GOOD growing season in 1949-50 and perfect harvesting conditions resulted in a near-record Australian rice crop. At present rice is grown commercially in only one Australian State, New South Wales. In 1949-50 about 72,000 tons of rice were harvested from 36,250 acres sown (26,795 acres in the Murrumbidgee irrigation area and 9455 acres in the Wakool-Tullakool irrigation area). Australia's record rice crop was 75,000 tons from 40,500 acres in the 1943-44 season. The illustration shows the bagging platform of a self-propelled auto-header. However, many Australian rice farmers prefer horses for drawing their pneumatic-shod engine-operated headers, because horses move at a slow, even, and economical speed in heavy and sometimes boggy rice fields.