

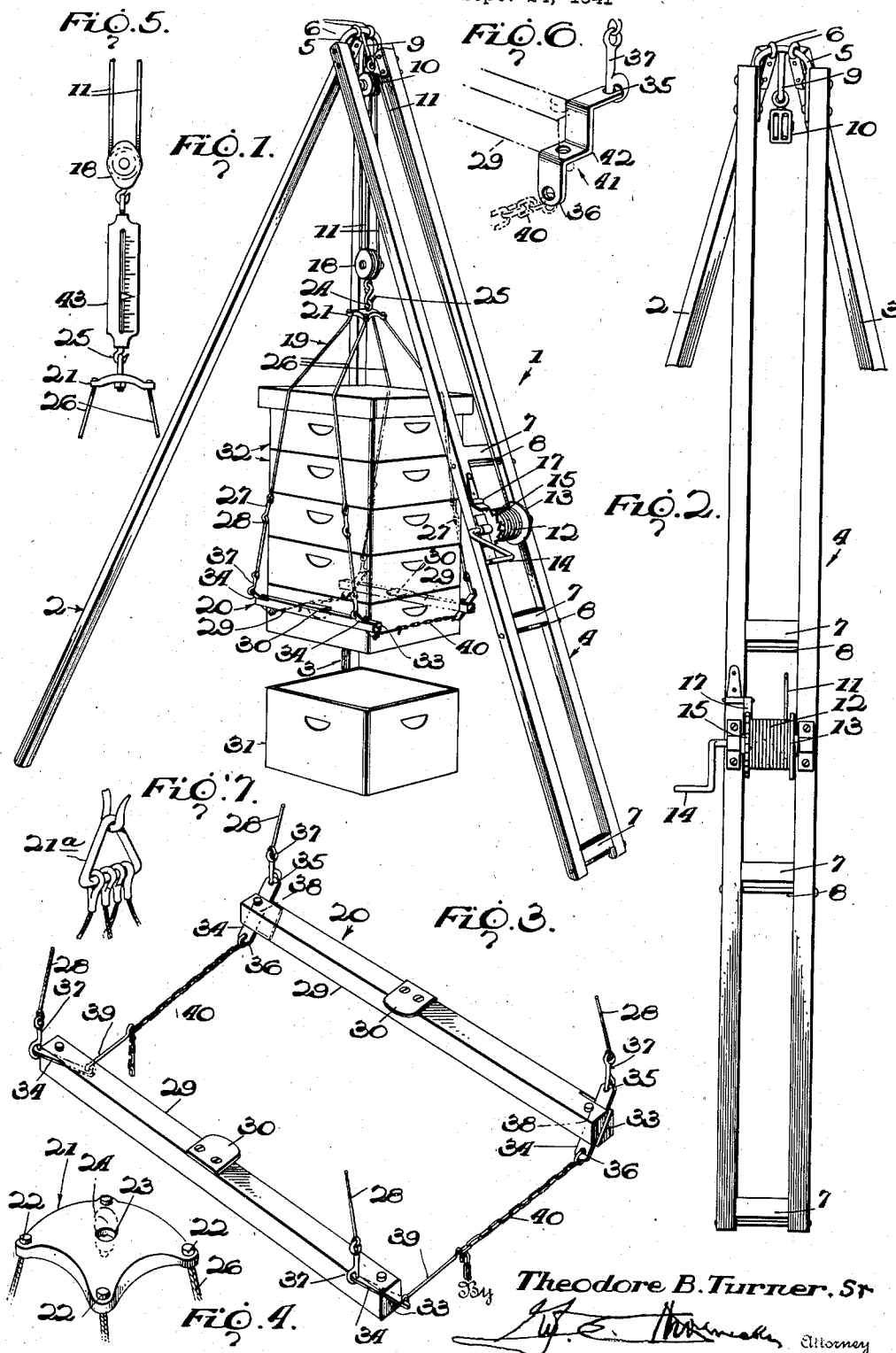
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BEEKEEPER'S HOIST

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BEEKEEPER'S HOIST

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6 Claims. (Cl. 294—67)

The invention relates to a beekeeper's hoist.

An object of the present invention is to provide a simple, practical and efficient beekeeper's hoist of strong, durable and comparatively inexpensive construction adapted to eliminate from the apiary heavy lifting and capable of enabling all types of beehives to be readily employed and conveniently operated.

Another object of the invention is to provide a beekeeper's hoist of this character equipped with an adjustable hive engaging clamp adapted to be readily applied either to the hive body or to any one of the supers and capable without liability of slipping of enabling the hive body or one or more supers to be lifted for various purposes, such as an examination of the hive body, removal of the supers or lifting all of the supers from the hive body to enable a new or empty super to be placed in position on the hive body.

A further object of the invention is to provide a beekeeper's hoist comprising hoisting mechanism, a free swinging sling carrying a hive clamp, and a supporting frame having legs and adapted to be arranged over a hive with said legs spaced from the same so that when the supers are lifted from the hive body they may be swung from a position above the hive body laterally to a position beyond the hive body and be suitably secured to one of the legs for holding them out of the way to permit the hive body to be conveniently inspected.

Another object of the invention is to provide a beekeeper's hoist comprising a supporting frame, block and tackle mounted on the frame and a hive clamp having means for engaging a hive body and for also engaging a super for lifting one or more supers and a sling carried by the block and tackle and having flexible sling members connected to the clamp and arranged to engage the hive body at the top thereof and cooperating with the clamp for holding the supers intact particularly when they are swung away from the hive body.

It is also an object of the invention to enable the hive body and the supers to be readily weighed when desired.

A further object of the invention is to provide a beekeeper's hoist capable of being compactly folded to enable it to be easily carried from one apiary to another by automobile or other conveyance.

With these and other objects in view, the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying

drawing and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion and minor details of construction within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any advantages of the invention.

In the drawing:

Figure 1 is a perspective view of a beekeeper's hoist constructed in accordance with this invention and shown applied to a hive.

Figure 2 is an elevation of a portion of the hoist taken at right angles to Figure 1.

Figure 3 is a detail perspective view of one form of the hive engaging clamp.

Figure 4 is a detail perspective view of the cap of the sling.

Figure 5 is a detail view illustrating the arrangement of a scale between the block and tackle and the sling of the hive engaging clamp.

Figure 6 is a detail view illustrating a modification of the members for connecting the sling with the hive engaging bars of the clamp.

Figure 7 is a detail view of a triangular loop or ring for connecting the sling members together and for connecting the sling with the block and tackle.

In the accompanying drawing in which is illustrated the preferred embodiment of the invention, the beekeeper's hoist includes a tripod frame 1 composed of legs 2, 3 and 4 connected together at the top by irons 5 and 6. The legs of the tripod frame which, as is true of all parts of the hoist, may be constructed of any suitable material of any desired dimensions and said legs 2, 3 and 4 preferably consist of light bars of wood. The leg 4 is composed of spaced parallel bars spaced apart by spacing members 7 and connected by transverse rods or bolts 8. The spacing members and rods are arranged at any desired points and the sides of the leg 4 are connected together at their upper ends by the top iron 5.

The top iron 5 is approximately U-shaped and is bolted or otherwise secured to the upper ends of the sides of the leg 4 and the top irons 6 which are also substantially U-shaped are suitably secured to the upper ends of the legs 2 and 3 and are linked into the top iron 5 by passing the top iron through loops formed by the top irons 6. This will enable the tripod frame to readily collapse for folding the hoist and also provides a rigid connection between the legs when the tripod is arranged for use as illustrated in Figure 1 of the drawing. A hanger 9 preferably consisting of a hook is suspended from the top of the tripod preferably by being linked into the top iron 5 and

is preferably arranged between the top irons 6 as clearly illustrated in Figure 2 of the drawing. The top iron 5 may be secured to the sides of the leg 4 in any other desired manner and any other suitable means may be employed to provide a hinged connection between the legs 2 and 3 and the legs 4 to permit collapsing or folding of the supporting frame.

A block and tackle 10 of the ordinary construction is hung from the hanger 9 and its rope 11 which may consist of a sash cord or any other equivalent flexible member extends downwardly from the top of the block and tackle to a windlass 12 journaled in suitable bearings on the sides of the leg 4 and consisting essentially of a drum or reel 13 having an operating crank or handle 14 and provided with a ratchet wheel 15. The ratchet wheel 15 preferably consists of one of the sides or cheeks of the drum or reel and is engaged by a pawl which may be conveniently formed by a hinge 17 secured to one of the bars of the leg 4. One leaf of the hinge is secured to the leg 4 and the other leaf constitutes the said pawl 15. The loose leaf is adapted when swung upward out of engagement with the ratchet wheel 15 to lie against the inclined leg 4 and thereby retained by gravity out of engagement with the ratchet when it is desired to permit the drum or reel of the windlass to rotate freely. Any other suitable form of windlass and ratchet may of course be provided.

The lower block 13 of the block and tackle is provided with a hook from which is suspended the sling 19 of the hive engaging clamp 20. The sling 19 is provided with a cap 21 preferably consisting of a rectangular plate provided at its corners with apertures 22 and having a central hole 23. The corners of the plate are bent downwardly as clearly illustrated in Figure 4 of the drawing and an eye bolt 24 is secured in the central hole of the cap and is detachably engaged with the hook 25 of the lower block 13. Instead of employing the cap and the eye bolt 24 for connecting the sling members with each other and with the hook 25 of the lower block 13 the triangular loop 21^a shown in Figure 7 may be employed. A triangular or circular loop or ring may of course be used and the upper ends of the sling members may be connected by snap hooks or any other suitable means with the triangular loop or ring and the triangular loop or ring may be readily engaged with the hook 25. Any other suitable means may be employed for connecting the sling members with the hoisting mechanism.

Four flexible sling members 26 are secured at their upper ends in the apertures of the corner portions of the cap 21 and these sling members may consist of wires, chains or any other suitable flexible elements and they are provided at their lower ends with snap hooks 27 or other suitable means adapted to engage eyes of extension sections 28 or eyes or openings of the clamp. The extension sections may be of any desired length and are designed for increasing the length of the sling members to enable the sling to accommodate itself to a hive having any number of supers stacked above the hive body. The sling members which converge upwardly are preferably arranged in pairs at opposite sides of the hive as clearly indicated in Figure 1 of the drawing but the clamp may be positioned on the hive to arrange the sling members at the front and back of the hive as will be readily understood. The sling members may consist of chains, wires, cables or a combination of the same or any other

suitable means which will provide a flexible connection between the hive engaging clamp and the hoisting mechanism so that the sling members may extend upwardly and inwardly over the top of the hive and engage the same and cooperate with the clamp in holding the supers intact when the latter are lifted from the hive body and are swung laterally beyond the same and secured to one of the legs.

The hive engaging clamp is composed of spaced parallel bars 29 located at opposite sides of the hive and preferably constructed of wood but any other suitable material may be employed as will be readily understood. The clamping members are provided intermediate of their ends with inwardly projecting lips 30 preferably consisting of metal plates suitably secured to the clamping bars 29 and adapted to fit into the usual hand hold or other holes in the hive body 31 and supers 32. Instead of employing lips for engaging holes or recesses in the hive body and supers cleats or blocks (not shown) may be secured to the hive body and the supers and the clamping bars may be arranged beneath the blocks or cleats in engagement with the same but frictional engagement of the clamps with the hive body and the supers may be relied on from firmly connecting the said parts of the hive with the sling and the hoisting mechanism.

The ends of the clamping bars 29 may be provided with diagonal kerfs 33 in which are inserted corner irons 34 and preferably consisting of narrow plates and provided at their ends with suitable eyes or openings 35 and 36. The openings 35 are adapted to be engaged by snap or other hooks 37 provided at the lower ends of the extension sections 28 or the snap or other hooks 27 provided at the lower ends of the sling members 26. The corner irons 34 are provided with central perforations 38 to permit fastening devices to be driven into or otherwise applied to the ends of the clamping bars and pass through the corner irons for permanently securing the corner irons to the end bars. The corner irons at the adjacent ends of the end bars may converge downwardly as shown so that the upper ends of the inclined corner irons project outwardly beyond the planes of the side faces of the clamping bars 29 so that the pull on the clamping bars by the sling members will cause the clamping bars to engage either the hive body or any one of the supers firmly and the inwardly projecting lips 30 which engage recesses or hand holes of the hive cooperate with the clamping bars in effectually preventing the clamp from slipping when the windlass is operated to lift one and all of the supers or the hive body. The corner irons when flat may be arranged either at an inclination or horizontally and various other means may be employed for connecting the sling members with the clamping bars and various means may be employed for adjustably connecting the clamping bars with each other.

When it is desired to inspect the hive body the supers may be lifted as illustrated in Figure 1 of the drawing and they may be swung to one side and suitably secured in such position so as to afford ready access to the hive body for inspection of the same or other purpose.

The openings at the inner ends of the corner irons 34 of one of the clamping members has linked into it an eye of a hook 39 which adjustably engages a short chain 40 which is linked into the inner eye 36 of the adjacent corner iron. The hook 39 and the short chain 40 constitute ad-

justable means for connecting the bars 29 at each end of the clamp.

Instead of slitting the ends of the clamping bars 29 to receive the straight corner irons 34, angle corner irons 41 may be provided. The angle corner irons are provided with a central angular bend 42 which provides a seat for the clamping bar and to which the clamping bar may be readily secured by vertical and horizontal fastening devices. The ends of the angle corner irons are provided with upper and lower openings similar to the openings of the inclined corner irons for the same purpose as the openings 35 and 36 of the corner irons 34, but any other suitable means may be employed for this purpose.

When it is desired to weigh the whole or any portion of the hive a scale 43 of the ordinary construction may be interposed between the cap of the sling and the hook of the lower block 18 of the block and tackle.

The bottom cross piece which connects the lower ends of the side bars of the leg 4 is adapted to receive the foot of the operator. At the start of the lifting of an extra heavy load the operator may place a foot on this bottom cross bar to steady the hoist. This is unnecessary with ordinary lifting operations.

What is claimed is:

1. In a beekeeper's hoist, including hoisting mechanism having a sling provided with depending sling members spaced apart at their lower ends, and a clamp composed of spaced hive engaging bars provided intermediate their ends with lips arranged to extend into recesses in a high, flexible means for connecting the bars with each other and means for connecting the bars with the sling members for causing the bars to tend to move towards each other when there is a pull on the sling member by the hoisting mechanism.

2. In a beekeeper's hoist, including hoisting mechanism having a sling provided with depending sling members spaced apart at their lower ends, and a clamp composed of spaced hive engaging bars provided at their ends with corner irons having portions projecting from the said bars, flexible means located at the ends of the

bars for connecting the corner irons with each other, and means for connecting the projecting portions of the corner irons with the sling members.

3. In a beekeeper's hoist, including hoisting mechanism having a sling provided with depending sling members spaced apart at their lower ends, and a hive clamp comprising spaced hive engaging bars provided at their ends with inclined kerfs, corner irons fitted in the said kerfs and projecting beyond said bars, means located at the ends of the bars for connecting the lower ends of the corner irons, and means for connecting the upper ends of the corner irons with the sling members.

4. In a beekeeper's hoist, including hoisting mechanism having a sling provided with depending sling members spaced apart at their lower ends, and a hive clamp comprising spaced hive engaging bars provided at their ends with corner irons projecting beyond the bars and having intermediate angle portions forming seats for the said bars, means located at the ends of the bars for connecting the corner irons with each other and means for connecting the corner irons with the sling members.

5. In a beekeeper's hoist including hoisting mechanism provided with a sling having depending sling members provided at their lower ends with removable sections, and a clamp comprising hive engaging bars spaced apart and flexibly connected with each other, said sling members and said removable sections thereof being provided with means for connecting the removable sections with the said bars and for also connecting the sling members with the removable sections and with said bars when the removable sections are not in use.

6. In a beekeeper's hoist including hoisting mechanism having a sling provided with depending sling members and a clamp comprising hive engaging bars and means located at the ends of the bars connecting the same with the sling members and with each other including hooks and chain sections arranged to permit an adjustment of the said bars with relation to each other.

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CERTIFICATE OF CORRECTION.

Patent No. 2,275,704.

March 10, 1942.

THEODORE B. TURNER, SR.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, second column, line 27, for the word "from" read --for--; page 3, first column, line 35, claim 1, for "high" read --hive--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 5th day of May, A. D. 1942.

(Seal)

Henry Van Arsdale,
Acting Commissioner of Patents.