Feb. 9, 1954 J. J. BRAMBLETT 2,668,409

KEEPER MEANS FOR COTTON PICKING SPINDLE SLATS

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FIG. 2

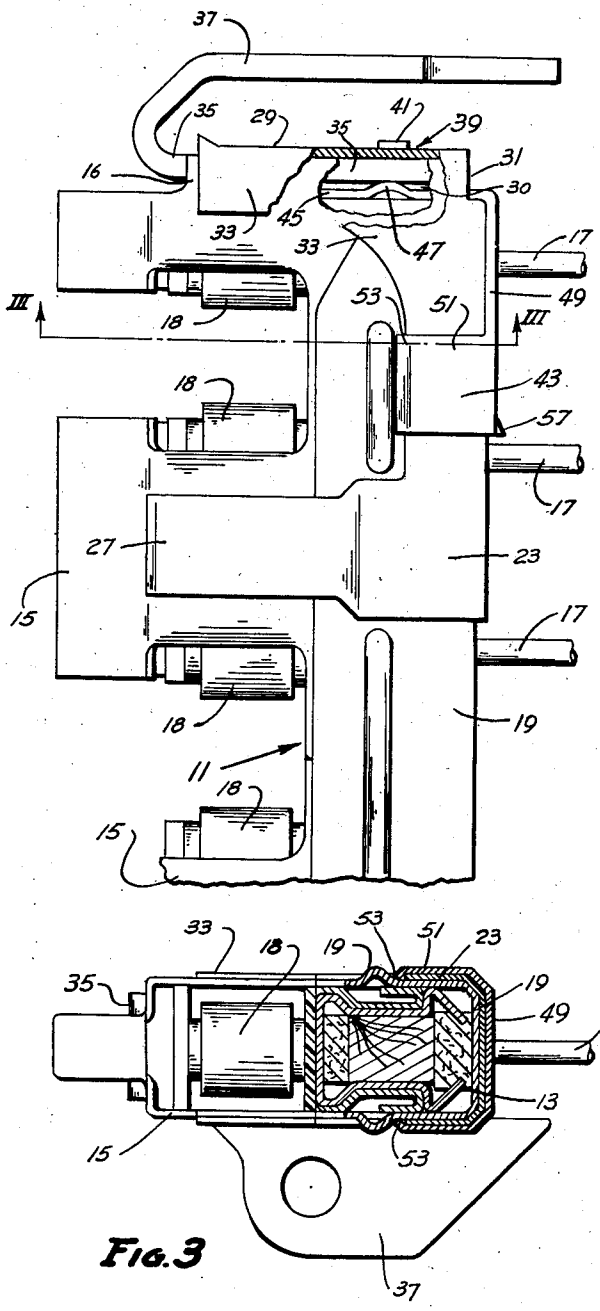



FIG. 3




FIG. 1

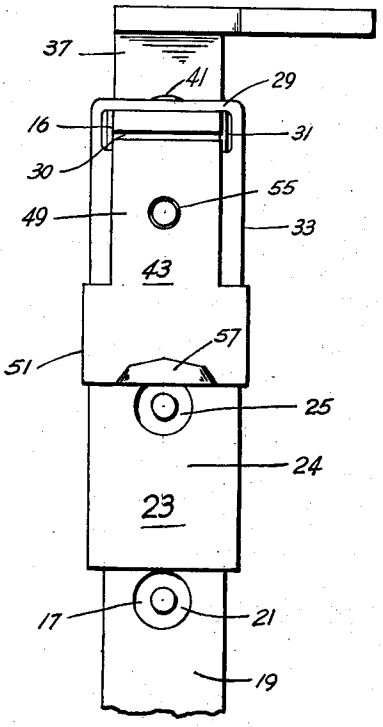
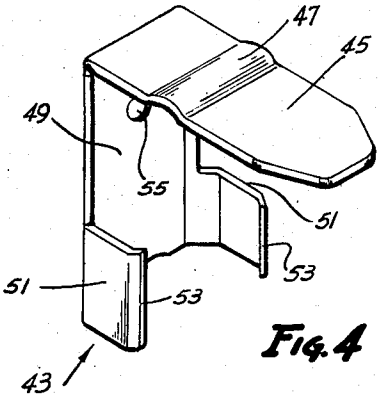



FIG. 4




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## KEEPER MEANS FOR COTTON PICKING SPINDLE SLATS

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8 Claims. (Cl. 56—42)

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This invention relates to certain new and useful improvements in spindle slats for cotton picking machines of the type generally shown and described in Patent 2,440,450, and specifically relates to a new and useful improvement in keeper means for such slats, by which hinge elements, similar to those shown in the above mentioned patent, are locked into position upon a slat of the general nature of that described in said patent. In general the spindle slat consists of means for rotatably supporting a plurality of cotton picking spindles in a vertical bank. To the upper and lower ends hinge members are secured, by means of which the slats are attached to carrying means such as chains.

A keeper key has heretofore been used, being interposed between such hinge member and the slat for the purpose of locking the hinge to the slat. It has been found that there is extreme difficulty in removing such keeper key for the purpose of releasing the hinge from the slat, as when repairs or replacements are necessary, so that special tools have been heretofore required, and it has further been found that under conditions of use the hinge is permitted to rock out of vertical alinement with the slat resulting in a distortion of the slat support and a consequent imperfection in subsequent operation.

The primary object of this invention is to provide a new and novel keeper arrangement to interact with slot-carried means including one or more of the spindles to effect locking of the hinge member to the slat, inhibiting relative rocking between the hinge and slat and being readily accessible for easy and simple removal.

A further object of the invention is to provide keeper means comprising a key tongue and a body portion disposed angularly to the keeper tongue, the body portion being provided with arms for embracing the slat and being apertured for the passage of one or more spindles therethrough.

A further object of the invention is to provide keeper means for the spindle slats of cotton picking machines, including a portion engaging the end of the slat and a hinge member to interlock the hinge member to the slat end and further engaging a vertical face of the slat to inhibit relative rocking between the hinge member and slat.

A further object of the invention is to generally improve the design, construction and efficiency of keeper means for spindle slats of cotton picking machines.

The means by which the foregoing and other objects of this invention are accomplished and

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the manner of their accomplishment will readily be understood from the following specification upon reference to the accompanying drawings, in which:

Fig. 1 is a fragmentary front elevational view of one end of a spindle slat for a cotton picking machine with the keeper means of the present invention in position thereon.

Fig. 2 is a side elevational view of the device as seen in Fig. 1, with certain parts broken away for illustration.

Fig. 3 is a sectional view taken as on the line III—III of Fig. 2; and

Fig. 4 is a perspective view of the keeper means of the present invention.

Referring now to the drawings in which the various parts are indicated by numerals, the slat is indicated in general at 11 and includes an elongated member 13, commonly referred to as "backbone," which is a clip-like member and is adapted to carry packing and bearing members substantially in the manner described in the aforementioned Patent 2,440,450. Attached to the backbone are a plurality of members 15 conveniently denominated "ribs," these being composite members and adapted to house and support additional bearing members similar to the construction of said patent.

In the present drawings one of the end ribs and a fragment of an adjacent rib are included, it being understood that the opposite end of the slat when formed in accordance with the present invention is substantially identical with the arrangement of the one end illustrated herein. End rib 15 is provided with vertical end flanges 16.

Rotatably supported by the backbone and rib means are a plurality of cotton picking spindles 17 having suitable drive rollers 18. The forward edge of backbone 13 is embraced by an elongated substantially channel-shaped cover member 19 which preferably extends throughout the length of the backbone and which is provided with a plurality of apertures 21 for the extension of spindles 17 therethrough. The end portion of cover member 19 is embraced and covered by a retainer 23 which includes a front face 24 adapted to lie along the outer face of cover channel 19 and to extend at least below the second spindle from the end of the slat, retainer 23 being apertured as at 25 for the extension of spindles 17 therethrough. Retainer 23 is provided, remote from the end of slat 11, with a pair of rearwardly extending legs 27 which lie along and frictionally engage the sides of end rib 15 and the retainer includes a flat end plate 29 which extends rearwardly in a plane at right

angles to the plane of front face 24, plate 29 being slidably seated on the end edges of vertical rib flanges 16 so that plate 29 is spaced from the end of the slat backbone, the plate, rib flanges and slat forming an end chamber 30. Retainer 23 is cut off at the junction between plate 29 and vertical front face 24 to provide an access slot 31 extending into chamber 30 thus established between plate 29 and the end of slat 11 when retainer 23 is positioned. Plate 29 is connected to vertical front face 24 by sides 33, of which legs 27 form an extension, sides 33 along their respective end portions lying along rib flanges 16 and being cut out, as best shown in Fig. 2, to establish a minimum depth intermediate the sides slightly less than the depth of cover 19.

Chamber 30 between plate 29 and the end of slat 11 is adapted to loosely receive attachment portions 35 of hinges 37, by means of which hinges the slat is attached to a conveyor chain, not here shown, in the manner substantially as shown in the aforementioned patent. Plate 29 is slotted as at 39 to receive and engage a lug 41 formed on the attachment portion 35 of hinge 37.

The keeper key means of the present invention comprises a substantially angle-shaped member 43 having a horizontal keeper tongue 45 deformed as at 47 to establish a camming boss thereon. Perpendicularly joined to one end of the keeper tongue 45 is one end of a front face 49, which, adjacent its opposite end, is provided with a pair of spring arms 51 adapted to embrace and engage the body portion of retainer 23. It will be seen that arms 51 at their free ends are provided with converging tip portions 53, which, when the keeper device is positioned in assembly of the slat, overlap and embrace the edges of the cut-out portions of sides 33 of retainer 23, as best shown in Figs. 1 and 3.

It will further be seen that arms 51 are offset from face 49, thus in effect bulging the arms so as to provide for embracing the retainer member. Front face 49 is of a length to extend along the front face 24 of retainer member 23 substantially beyond at least one of the extending spindles 17, face 49 being apertured as at 55 to accommodate the spindle extension. It will be understood that face 49 may be extended further along the front face 24 of retainer 23 if desired and it is preferred that the front face 49 of keeper means 43 be extended a substantial distance below the endmost spindle 17 bearing solidly against the vertical face 24 of retainer 23 throughout a substantial segment of the retainer length, resisting any tendency of the hinge or retainer to tip forwardly. Front face 49 is preferably provided with an outwardly turned lip 57 to assist in the removal of the device when desired.

When the keeper device is positioned on the slat, keeper tongue 45 is inserted through slot 31 in retainer 23 extending into chamber 30 between rib flanges 16, hinge attachment member 35, and the end of slat 11. Camming boss 47 is effective to force the hinge away from the end of the slat and to insure the engagement of hinge lug 41 with retainer plate slot 39 and is preferably positioned so as to lie substantially vertically beneath lug 41 and slot 39. Endmost spindle 17 is passed through keeper aperture 55, this relative positioning effectively limiting any undesired vertical movement of the keeper. In this manner the hinge and retainer are effectively locked to retainer 23 and thus to the end of slat 11 against accidental removal and the substantial engagement in length between keeper face 49 and the front face 24 of retainer 23 insures against relative rocking between hinge 37 and slat 11.



It will be seen that as the device is frictionally retained in position by the action of spring arms 51 it may be quickly and simply removed, as when it is desirable to replace parts of the assembly, lip 57 providing ready access for the removal of the device without the necessity of special tools, and the device may be as quickly replaced when it is desired to reconstitute the slat and hinge as an operative unit.

I claim:

1. Keeper means adapted for use with a slat assembly for a cotton picking machine comprising a face portion adapted to lie along the face of said assembly, a tongue attached to and extending from one end of said face portion substantially perpendicularly thereto, said tongue including a camming boss intermediate its length, a pair of arms extending from the opposite sides of said body adjacent the opposite end of said face portion, said arms being disposed substantially parallel to each other and perpendicular to said face portion and underlying said tongue, and being adapted to embrace and frictionally engage said assembly remote from the end thereof, said face portion being apertured for the passage of a cotton picking spindle therethrough.

2. Keeper means, for use with a cotton picking spindle slat having a plurality of spindles, comprising a keeper tongue, a face portion disposed angularly to the tongue, and arms carried by said face portion for embracing said slat, said face portion being apertured for the extension of at least one said spindle therethrough.

3. Keeper means, adapted for use in cotton picker spindle slat assemblies, which assemblies each include a hinge member, a slat, a plurality of spindles carried by the slat, and an end clip adapted to embrace a said hinge member and an end of the slat, said keeper means being adapted to retain a said hinge member in engagement with a said end clip; said keeper means comprising a front face adapted to engage the front of an end clip, said front face being provided with at least one spindle receiving aperture adjacent but spaced from one end of said face for receiving the endmost spindle of a said assembly, a keeper tongue integrally connected at one end to said face end and projecting substantially perpendicularly away from one side of said face, said tongue intermediate its length having a transverse camming boss projecting from the tongue surface remote from said face, said camming boss extending substantially from side to side of said tongue and merging along its opposite edges with said tongue surface, said tongue and boss being adapted for insertion between an end clip and a hinge member, and a pair of spring arms respectively connected at one end to the opposite edges of said face adjacent the opposite end of said face and spaced from said tongue, said arms projecting away from said face side and lying substantially in alinement with said tongue sides for embracing an end clip beyond the endmost spindle, the opposite ends of said arms having converging tip portions for clamping an embraced end clip, whereby, when said keeper means is mounted on a slat assembly, to retain the hinge member of a said assembly against accidental removal and tipping relative to the slat of the assembly.

4. Keeper means, adapted for use in cotton

picker spindle slat assemblies, which assemblies each include a hinge member, a slat, a plurality of spindles carried by the slat and an end clip adapted to embrace a said hinge member and an end of the slat, said keeper means being adapted to retain a said hinge member in engagement with a said end clip; said keeper means comprising a front face adapted to engage the front of an end clip, said front face being provided with at least one spindle receiving aperture adjacent but spaced from one end of said face for receiving the endmost spindle of a said assembly, a keeper tongue integrally connected at one end to said face end and projecting substantially perpendicularly away from one side of said face, said tongue being adapted for insertion between an assembled end clip and hinge member, and a pair of spring arms respectively connected at one end to the opposite edges of said face adjacent the opposite end of said face and spaced from said tongue, said arms projecting away from said face side and lying substantially in alinement with the sides of said tongue for embracing an end clip beyond the endmost spindle, the opposite ends of said arms having converging tip portions for clamping an embraced end clip, whereby, when said keeper means is mounted on a slat assembly, to retain the hinge member of said assembly against accidental removal and tipping.

5. Keeper means, adapted for use in cotton picker spindle slat assemblies, which assemblies each include a hinge member, a slat, and an end clip adapted to embrace a said hinge member and an end of the slat, said keeper means being adapted to retain a said hinge member in engagement with a said end clip; said keeper means comprising a front face adapted to engage the front of an end clip, a keeper tongue integrally connected at one end to one end of said face and projecting substantially perpendicularly away from one side of said face, said tongue being adapted for insertion between an end clip and a hinge member, and a pair of spring arms respectively connected at one end to the opposite edges of said face adjacent the opposite end of said face and spaced from said tongue, said arms projecting away from said face side and lying substantially in alinement with the sides of said tongue for embracing an end clip, the opposite ends of said arms having converging tip portions for clamping an embraced end clip, whereby, when said keeper means is mounted on a slat assembly, to retain the hinge member of said assembly against accidental removal and tipping.

6. Keeper means, adapted for use in cotton picker spindle slat assemblies, which assemblies each include a hinge member, a slat, and an end clip adapted to embrace a said hinge member and an upper end of the slat, said keeper means being adapted to retain a said hinge member in engagement with a said end clip; said keeper means comprising a front face adapted to engage the front of an end clip, a keeper tongue integrally connected at one end to one end of said face and projecting substantially perpendicularly away from one side of said face, said tongue being adapted for insertion between an end clip and a hinge member, and a pair of spring arms respectively connected at one end to the opposite edges of said face adjacent the opposite end of said face and spaced from said tongue, said arms projecting away from said face side for embracing an end clip, whereby, when said keeper means is mounted on a slat assembly, to retain the hinge member of said assembly against accidental removal and tipping.



7. Keeper means, adapted for use in cotton picker spindle slat assemblies, which assemblies each include a hinge member, a slat, a plurality of spindles carried by the slat and an end clip adapted to embrace a said hinge member and an end of the slat, said keeper means being adapted to retain a said hinge member in engagement with a said end clip; said keeper means comprising a front face adapted to engage the front of an end clip, said front face being provided with at least one spindle receiving aperture adjacent but spaced from one end of said face for receiving the endmost spindle of said assembly, and a keeper tongue integrally connected at one end to said face end and projecting substantially perpendicularly away from one side of said face, said tongue being adapted for insertion between an end clip and a hinge member, whereby, when said keeper means is mounted on a slat assembly, to retain the hinge member of said assembly against accidental removal and tipping.

8. Keeper means, adapted for use in cotton picker spindle slat assemblies, which assemblies each include a hinge member, a slat, a plurality of spindles carried by the slat and an end clip adapted to embrace a said hinge member and the upper end of the slat, said keeper means being adapted to retain a said hinge member in engagement with a said end clip; said keeper means comprising a front face provided with at least one spindle receiving aperture adjacent but spaced from one end of said face, a keeper tongue integrally connected at one end to said face end and projecting substantially perpendicularly away from one side of said face, said tongue intermediate its length having a transverse camming boss projecting from the tongue surface remote from said face, and a pair of spring arms respectively connected at one end to the opposite edges of said face adjacent the opposite end of said face and spaced from said tongue, said arms projecting away from said face side and lying in substantial alinement with the sides of said tongue.

JOHN J. BRAMBLETT.

**References Cited** in the file of this patent

UNITED STATES PATENTS

| Number | Name | Date |
|---|---|---|
| 2,440,450 | Rust | Apr. 27, 1948 |
| 2,533,631 | Rust | Dec. 12, 1950 |
| 2,548,069 | Rust | Apr. 10, 1951 |