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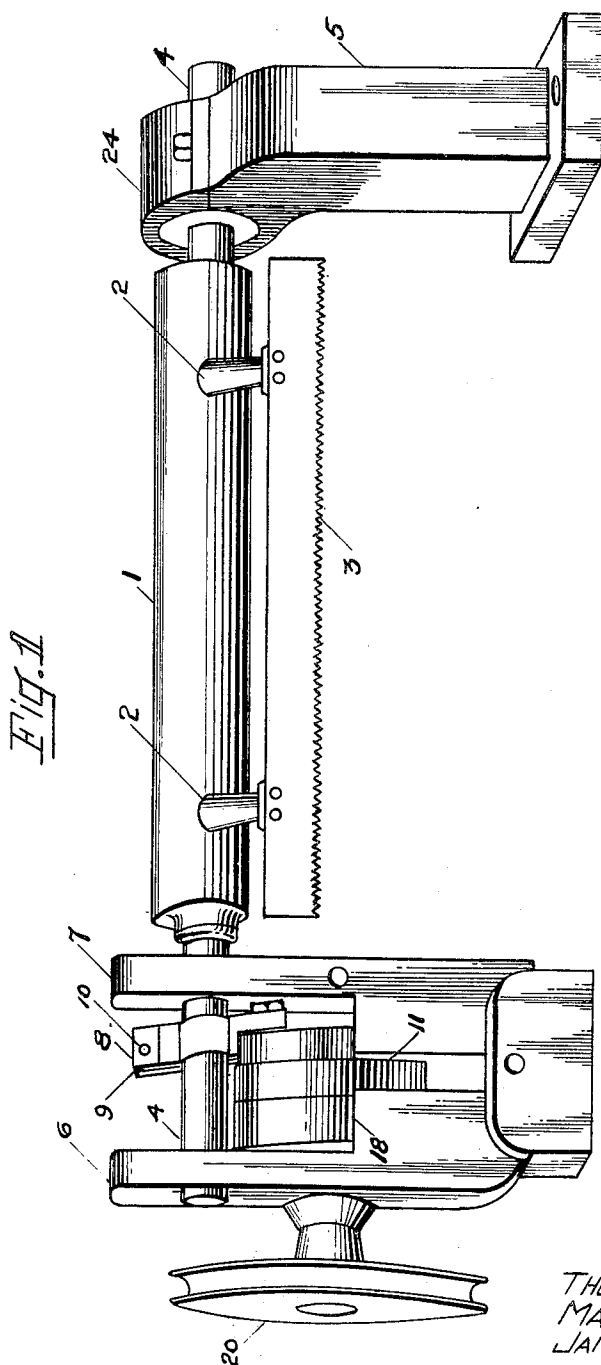
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**2,539,081**

# MECHANISM FOR OPERATING A COMB-BOX ON A CARD

Filed May 23, 1947

2 Sheets-Sheet 1



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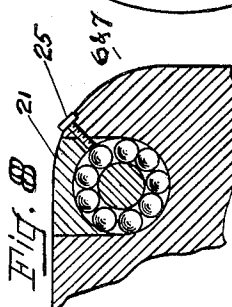
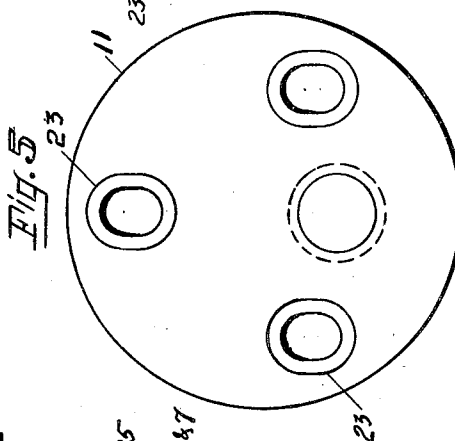
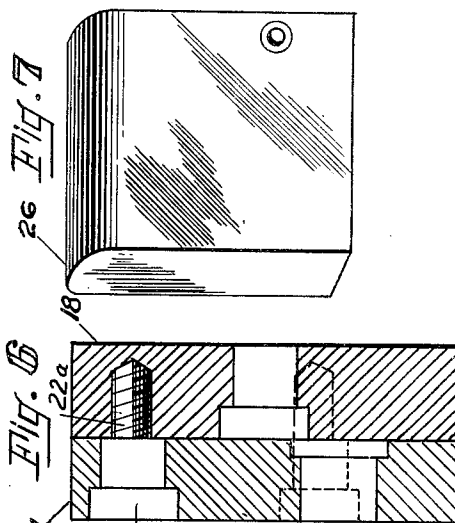
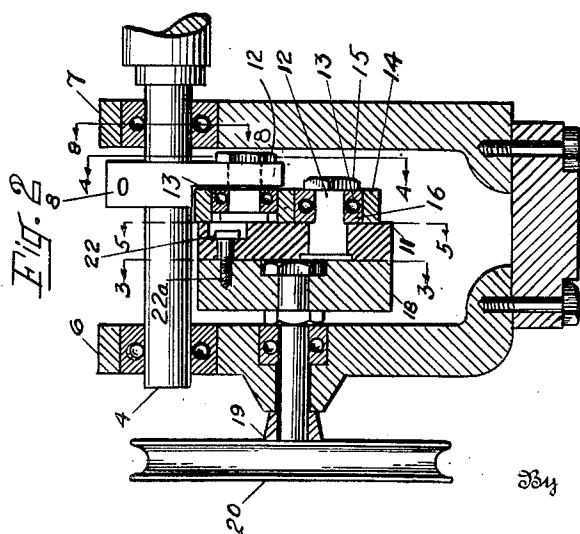
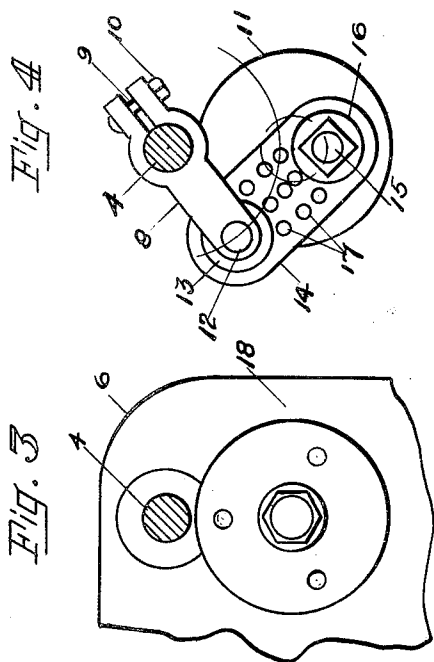
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MECHANISM FOR OPERATING A COMB-BOX ON A CARD

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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE

2,539,081

MECHANISM FOR OPERATING A COMB BOX  
ON A CARD

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1 Claim. (Cl. 74—75)

1

The object of our invention is to provide a novel mechanism for operating a comb on a carding machine and the novelty of the invention is mainly in the driving mechanism whereby vibration, chatter, friction, heat and wear of the machine are prevented.

It is also an object of our invention to eliminate the present practice of constant oil changes and greasings. It is also our object to provide a mechanism which eliminates static; and to provide a cover to protect the mechanism from dust and lint.

We attain these and other objects of our invention by the mechanism illustrated in the accompanying drawings in which—

Figure 1 is a perspective view of the machine;

Fig. 2 is a central vertical section through the cam and cam plate and associated mechanism;

Fig. 3 is a section on line 3—3 of Fig. 2 showing a front elevation of the comb;

Fig. 4 is a section on line 4—4 of Fig. 2 showing a front elevation of the comb arm and cam throw;

Fig. 5 is a front elevation of the cam plate viewed from line 5—5 of Fig. 2;

Fig. 6 is a vertical section through the cam and cam plate;

Fig. 7 is a perspective view of a cover for the mechanism; and

Fig. 8 is a section on line 8—8 of Fig. 2.

Like numerals indicate like parts in each of the several views.

Referring to the drawings, our machine has the usual comb support 1, arms 2 and comb 3. The comb support 1 is mounted on a comb shaft 4 which is mounted in the conventional end support 5 and in two spaced supports 6 and 7, which give it a more rigid support and help to overcome vibration. In the prior art, vibration has broken down the web and has tended to injure the combs. The comb support is shaped to counterbalance the weight of the comb, as shown in Fig. 1 of the drawing.

For operating the comb box, a comb arm 8 is provided which has a slot 9 at its end, the arm being tightly fastened to the comb shaft 4 by a bolt 10 which is screw-threaded to the slotted ends of the arm 8 beyond the shaft 4. This permits of adjustably securing the arm 8 on the shaft 4 at the desired distance from a crank plate 11.

The outer end of the arm 8 is slotted to receive a stud 12. The other end of stud 12 is mounted in a ball bearing 13 which is seated in

2

the outer end of a pitman 14. The bearing is sealed in. The sealing of the bearings prevents getting oil in the arm and eliminates the expense of frequent oiling. The other end of this pitman 14 carries the ball-bearing 16 which, in turn, is mounted on a crank pin 15 in an eccentric position in the crank plate 11. The pitman 14 has a series of channels 17 extending transversely through it and which function to cause a circulation of air through it and around the cam-throw which prevents overheating of the mechanism and which will also blow away any dust or dirt.

The crank plate 11 is adjustably and slidably fastened to a disk 18 of the same diameter by three socket-head, screw-threaded studs 22. These studs are received in tapped bores 22a provided in the face of disk 18 at equally spaced points as shown in Fig. 3 and are mounted in elongated slots 23 which extend vertically of the crank plate to permit of its vertical adjustment relative to the disk to adjust the stroke of the comb for different weights of yarn. Disk 18 is fixed to a drive shaft 19 which is driven by a pulley 20 which is of conventional construction and driven by a V-belt or rope, not shown.

The two supports 6 and 7 on which the comb-shaft 4 is mounted are provided to reduce vibration. In each, directly over the comb shaft, are removable plugs 21 which are removably held in place by diagonally positioned screws 25 which keep the plugs pressed snugly to the bearings. The screws are countersunk in the supports. The purpose of having the plugs removable is to permit of quick substitution of a new comb for repair in case of breakage of teeth. The support 5, at the other end of the comb shaft, is a conventional support with removable cap 24 which can be easily removed when a change in the number of teeth, size or style of comb is desired.

The comb box is covered with a plastic cover 26 (Fig. 7), which will protect the mechanism from dust and grease and also will protect operatives from possible injury.

Also, the entire machine may be mounted on two adapter plates which are just the size of the two bases of the supports which support the machine, whereby to adjust the height of the machine to suit different types of cards as made by different companies.

The machine has but two principal moving parts, and these are mounted in ball bearings which do not require lubrication for at least one year. These bearings are used in the pitman, crank plate and in the supports for the comb-

3

shaft. In prior machines there have been many moving parts and constant lubrication has been required.

Our comb-box eliminates the throw-load and prolongs life of the comb.

In the event the comb band jumps off, our mechanism will save the comb as the motion of doffer will oscillate the comb, which it will not do in any other boxes. On other boxes the doffer will load and break the teeth in the comb and endanger the wire on the doffer.

Our mechanism is designed so that the oscillating movements up and down can be adjusted to any desired length to assure uniform web, which improves the quality of work produced by the card. In other words, on other boxes in the prior art they have no adjustment to take care of bulk of stock that the card produces; if the card produces 15 pounds per hour the stroke should be shorter than if the card produces 51 pounds per hour.

What we claim is:

In a mechanism for oscillating a comb shaft, a pair of supports arranged in spaced side by side relation, a comb shaft pivotally mounted through both supports and projecting outwardly from one of said supports, a drive shaft arranged in parallel spaced relation to said comb shaft rotatably mounted in the other of said supports having one end projecting toward said one support and terminating at a point between said supports, a disk positioned between said supports fixedly secured to said one end of said drive shaft, a crank plate positioned in face to face relation with the face of said disk adjacent

4

said one support, means connecting said plate to said disk for sliding adjustment, an arm fixed at one end on said comb shaft between said supports, a pitman positioned between the other end of said arm and said crank plate in face to face relation with the crank plate, a crank pin extending through said crank plate and projecting toward said one support pivotally connected to one end of said pitman the other end of said pitman being pivotally connected to said other end of said arm for oscillating said comb shaft as said drive shaft is rotated.

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