W. E. MOORE.

DISK STACKING DEVICE.

APPLICATION FILED NOV. 8, 1920.

1,391,202. Patented Sept. 20, 1921.

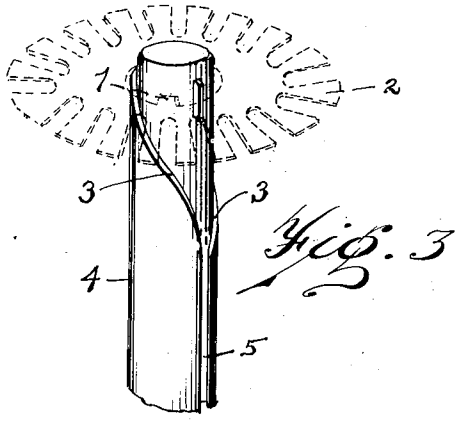


Fig. 3

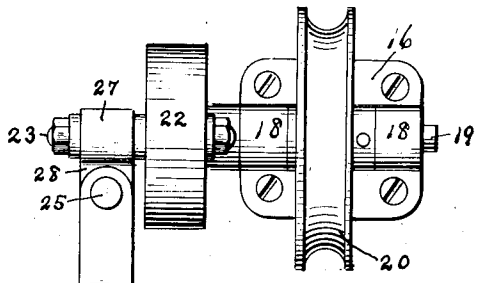
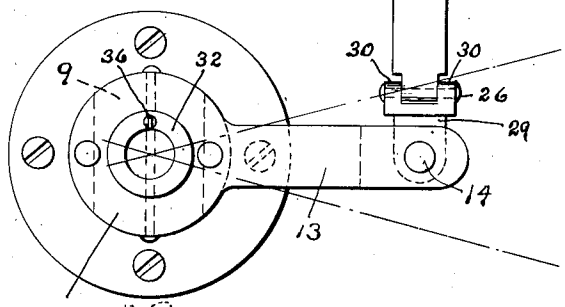


Fig. 1



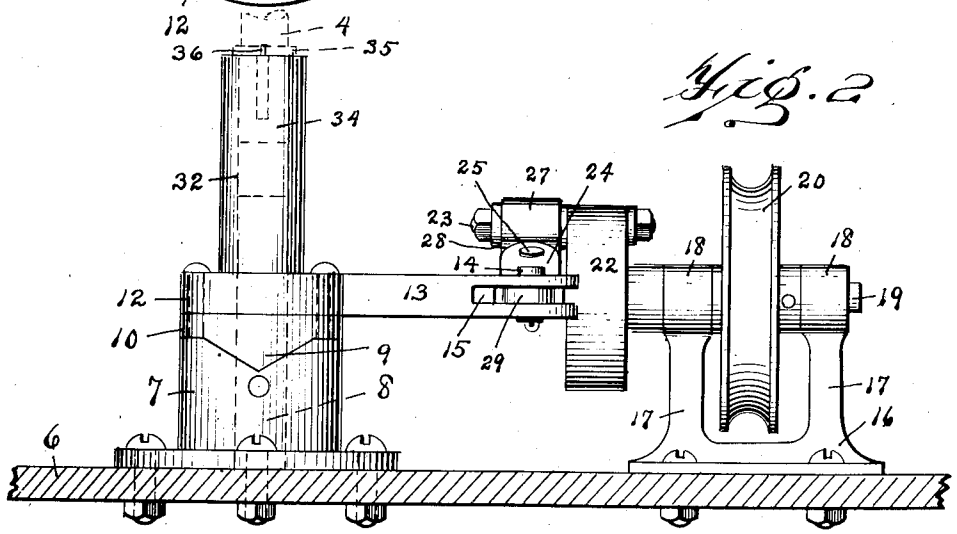


Fig. 2

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DISK-STACKING DEVICE.

1,391,202. Specification of Letters Patent. Patented Sept. 20, 1921.

Application filed November 8, 1920. Serial No. 422,532.

To all whom it may concern:

Be it known that I, WILLIAM E. MOORE, a citizen of the United States, and residing at Detroit, in the county of Wayne and State of Michigan, have invented a new and Improved Disk-Stacking Device, of which the following is a specification.

This invention relates to means for stacking the sheet iron disks used to make up the cores of the armatures for electric motors and generators, that is, to so arrange them co-axially that the key-ways or feathers by means of which they are positioned on the shafts are alined; and the object of this invention is to provide an automatic shaker with which the stacking pins shown in the Collins Patent Number 1,343,351, dated June 15, 1920, may coöperate.

This invention is particularly pointed out in the following claims and illustrated in the accompanying drawing, in which Figure 1 is a plan of this improved stacking device, Fig. 2 is a front elevation thereof, and Fig. 3 is a perspective of the upper end of the stacking pin.

Similar reference characters refer to like parts throughout the several views.

The above named Collins patent shows a stacking pin which is intended to be held and shaken by one hand, while the disks are placed thereon by the other hand, the shaking and rocking of the pin causing the disks to aline themselves through the engagement of the inwardly extending feathers 1 on the disks 2, indicated in dotted lines in Fig. 3, with the helical shoulders 3 of the stacking pin 4 which guide the feathers 1 down to the longitudinal groove 5 in the pin. It has been found that the simple construction shown in Figs. 1 and 2 of the drawing enables the workman to assemble many times the number of sets of disks that he can by hand.

Mounted on the base 6 is a pedestal 7 within which is an upright shaft 8, indicated in dotted lines in Fig. 2. The upper face of the pedestal is formed with a groove with inclined sides, and into this groove extends the transverse rib 9 on a collar 10. Secured to this collar 10 or integral with it is a disk 12 having an arm 13 which carries a pin 14 in its outer end extending across a slot 15. A base 16 has two upright posts 17 which support bearings 18 for a crank-shaft 19, on which a driving pulley 20 of any desired character is mounted. A crank 22 is secured to one end of this shaft and has a crank pin 23 of well known construction. A connecting rod 24 has a vertical pin 25 at its crank-pin end and a horizontal pin 26 at the opposite end. A small sleeve 27 receives the crank-pin 23 and has a lip 28 provided with a hole to receive the pin 25. The small plate 29 extends into the slot 15 in the arm 13 and receives the pin 26 on the connecting rod.

Rotation of the crank-shaft 22 will therefore cause the arm 13 to swing back and forth and the connections between this arm, the connecting rod and the crank pin permit this movement without binding of the parts. At each reciprocation of the arm 13, the disk 12 and the hub 32 thereon is caused to move up and down by reason of the inclined sides of the groove and of the transverse rib 9. Any other desired means may be employed to cause this arm 13 to swing back and forth so long as said means permits the up-and-down movement of this arm at the same time.

The lower ends 34 of the stacking pins 4 are of such size that they fit the central hole in the top of the hub 32 on the oscillating member 12, the collars 35 of the pins being provided with notches to receive the small pin 36 extending upward from said hub. This stacking device is constantly in motion and the disks in predetermined numbers for each core and the pins therefor are brought to the machine, the lower end of each pin being dropped into the hole in the top of the hub 32 and turned until the notch in its collar 35 alines with the small pin 36. The operator then takes up a hand full of these core-disks and places them over the top end of the stacking pin. The vertical and oscillating movements of the pin causes the core-disks to aline themselves as fast as they can be placed over the end of the pin. When the proper number has been alined on the pin this is grasped above the disks and lifted from the hub 32 and replaced by another.

I claim:—

1. In a stacking device for the disks of armature cores, the combination of a pedestal and a collar rotatable thereon, said pedestal having a transverse groove across its top and said collar having a rib extending downwardly into said groove, a hub on the collar having a central hole adapted to receive a stacking pin, and means to turn the collar back and forth on a vertical axis.

2. In a stacking device for the disks of armature cores, the combination of a pedestal and a collar rotatable thereon, said pedestal having a transverse groove across its top and said collar having a rib extending downwardly into said groove, a hub on the collar having a central hole adapted to receive a stacking pin, means to turn the collar back and forth on a vertical axis, comprising a crank shaft and a crank and crank pin thereon, means to rotate the crank shaft, an arm on said collar, and a connecting rod extending from said arm to said crank pin whereby rotation of the shaft causes oscillation of the collar.

3. In a stacking device for the disks of armature cores, the combination of a stacking pin having a longitudinal groove and helical shoulders extending from the groove, to a meeting place between them on the opposite side of the pin, means to support the pin in a vertical position, and means to cause the pin to simultaneously turn back and forth and to move up and down.

4. In a stacking device for the disks of armature cores, the combination of a stacking pin having a longitudinal groove, a hub having a central vertical socket to receive the lower end of the stacking pin, means to cause the hub to turn back and forth on the axis of said pin, and means to cause the hub to move up and down.

5. In a stacking device for the disks of armature cores, the combination of a stacking pin having a longitudinal groove, and means rotating back and forth on the axis of the pin provided with a socket to receive the lower end of said pin.

WILLIAM E. MOORE.