(No Model.) 3 Sheets—Sheet 1.

G. DIXON.

MECHANISM FOR ACTUATING THE DABBING BRUSHES OF COMBING MACHINES.

No. 422,125. Patented Feb. 25, 1890.

FIG 1.

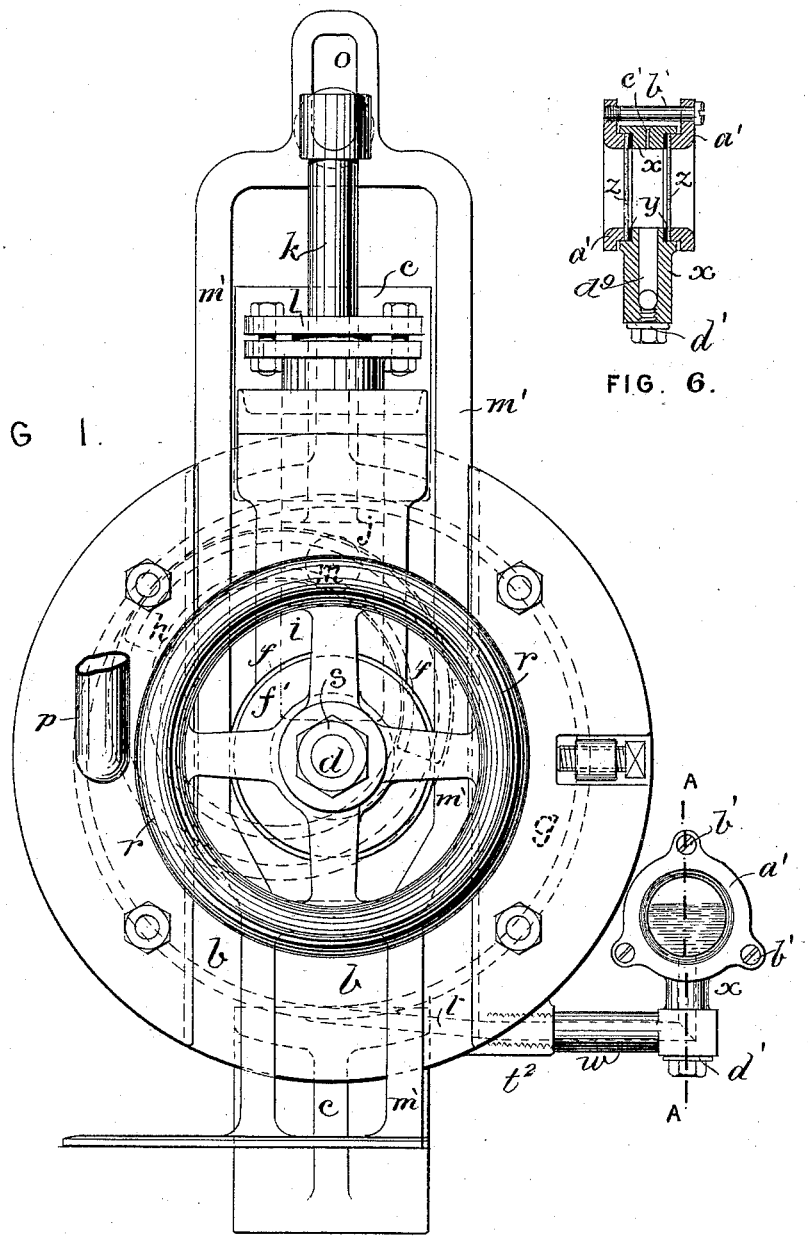

FIG. 6.

Witnesses.
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(No Model.) 3 Sheets—Sheet 2.

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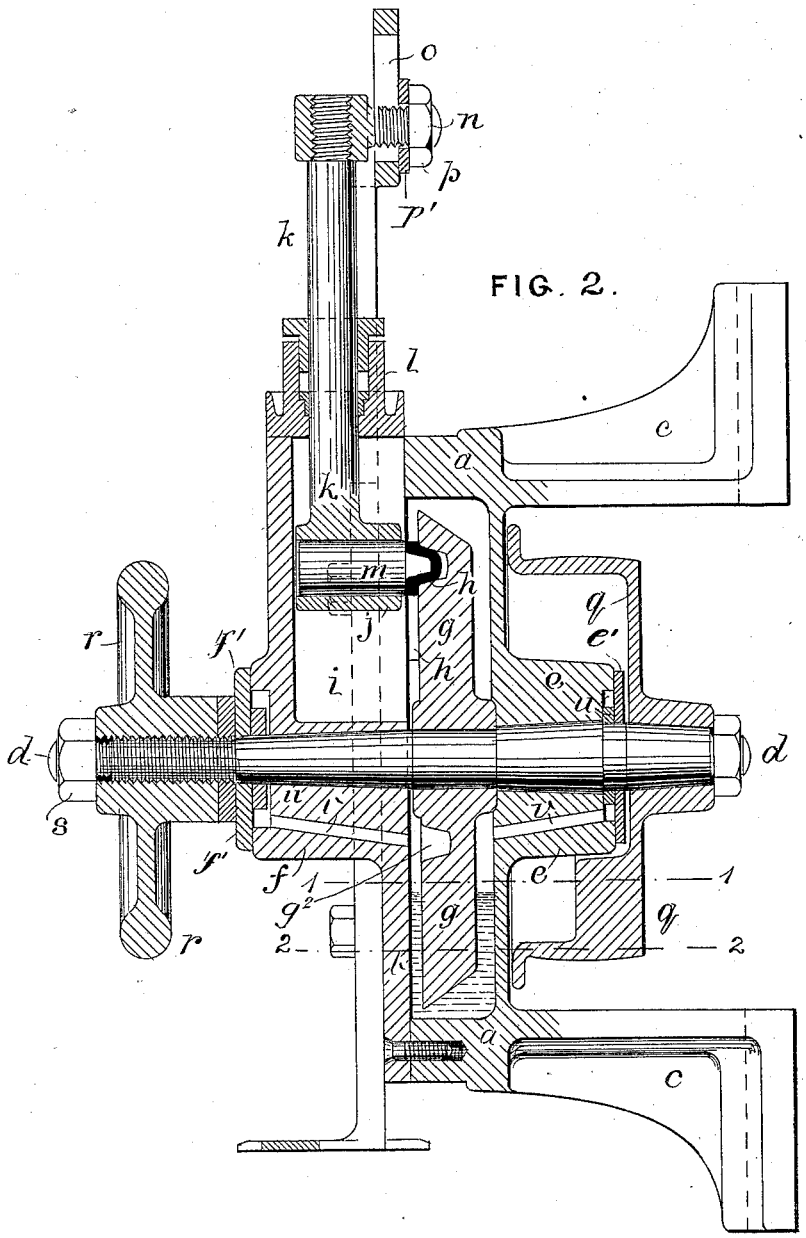
FIG. 2.



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(No Model.)

3 Sheets—Sheet 3.

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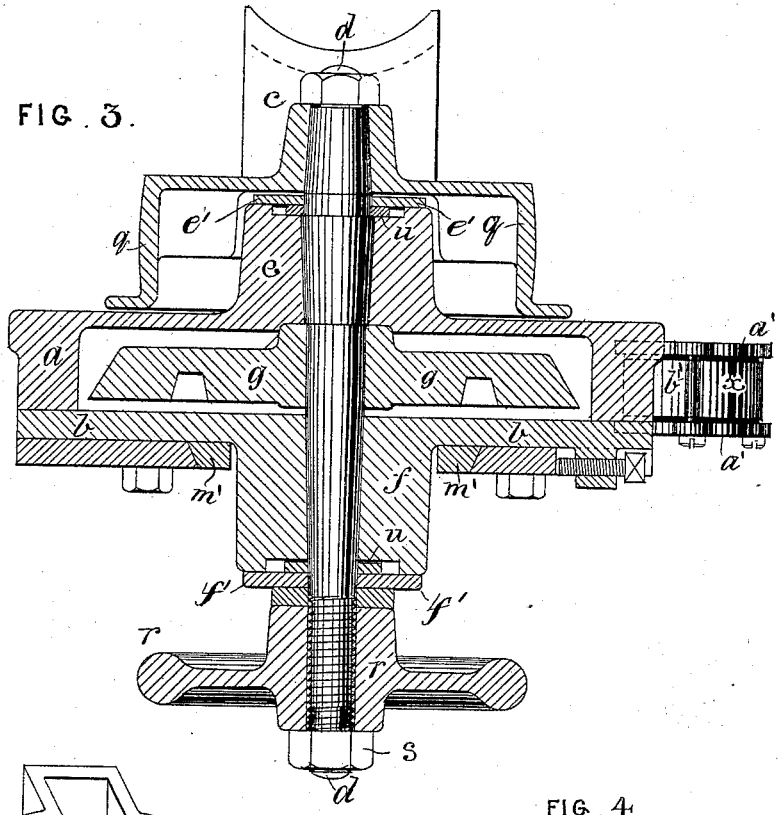
MECHANISM FOR ACTUATING THE DABBING BRUSHES OF COMBING MACHINES.

No. 422,125. Patented Feb. 25, 1890.

FIG. 3.



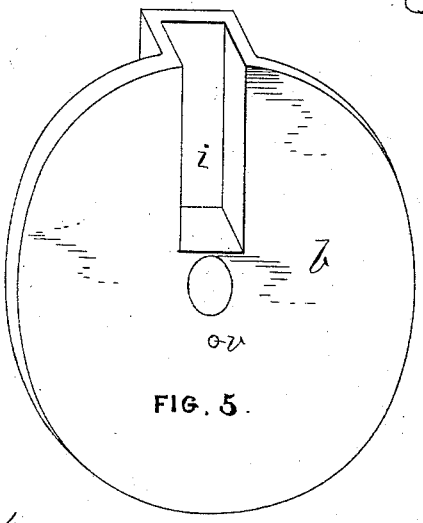
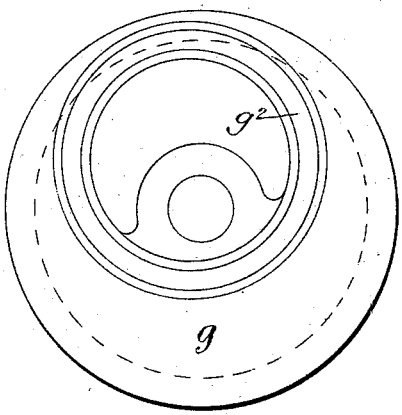


FIG. 5.

FIG. 4



Witnesses.
J. Thomson Cross
Geo. H. Dowe

Inventor.
George Dixon
per Henry Orth
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UNITED STATES PATENT OFFICE.

GEORGE DIXON, OF LEEDS, COUNTY OF YORK, ENGLAND.

MECHANISM FOR ACTUATING THE DABBING-BRUSHES OF COMBING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 422,125, dated February 25, 1890.

Application filed October 1, 1889. Serial No. 325,715. (No model.) Patented in England November 15, 1888, No. 16,598.

To all whom it may concern:

Be it known that I, GEORGE DIXON, a subject of the Queen of Great Britain and Ireland, residing at Leeds, in the county of York, England, have invented new and useful Improvements in Mechanism for Actuating the Dabbing-Brushes of Combing-Machines, (for which I have obtained Letters Patent in Great Britain, No. 16,598, bearing date November 15, 1888,) of which the following is a specification.

My invention relates to improvements in the mechanism for actuating the dabbing-brushes of combing-machines, and to the means for insuring the efficient lubrication of the same; and the objects of my improvements are, first, to impart a rapid vertical reciprocating or up-and-down motion to the slide to which the dabbing-brush is attached; secondly, to afford facilities for the proper adjustment or taking up of the slack or play due to wear of the working parts; thirdly, to provide for the automatic and continuous lubrication of the wearing parts, and, lastly, to offer facilities for ascertaining the presence or otherwise of oil in and for lubricating the apparatus. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the entire apparatus; Fig. 2, a section of the same along the central vertical plane; Fig. 3, a section of the same along a horizontal plane passing through the main shaft, said shaft, however, being in elevation; Fig. 4, a separate view, on a smaller scale, of the front side of the cam or eccentric disk; Fig. 5, a perspective view of the inner side of the cover and showing the slide-race; and Fig. 6, a vertical section of the oil-indicator on line A A, Fig. 1.

Similar letters refer to similar parts throughout the views.

The shallow circular box *a*, which, with its cover *b*, incloses the principal actuating mechanism, is cast in one piece with the lugs or brackets *c*, and carries the whole of the apparatus, being attached to the pillar or standard on the combing-machine by bolting the brackets *c* to such pillar or standard.

d is the main axle or shaft, which passes through the two bosses *e* and *f*, cast, respectively, on the box *a* and its cover *b*.

Within the box *a* and keyed to the shaft *d* is a circular disk *g*, having in the front face thereof an eccentric or cam groove g^2, preferably V-shaped in cross-section. Fitting in this groove is a half-annulus or half-ring *h*, preferably of the section shown in Fig. 2 in full black, so that the half-annulus or half-ring *h* and the groove in the disk will still accurately fit together, even after considerable wear, when the slack or play is taken up.

A vertical rectangular radial recess or slide-race *i* is cast on the cover *b*, and is open throughout its whole length on the inner side to the interior of the box *a*. In this recess is fitted a slide-block *j*, attached to or formed on the lower end of vertical spindle *k*, which latter passes through a stuffing-box *l*, closing the upper end of the recess or slide-race *i*. The before-mentioned slide-block *j* is provided with a hole, in which fits the pin *m*, formed in one piece with and projecting from the front side of the half-annulus or half-ring *h*. It will be evident that the rotation of the circular disk *g* will impart a vertical reciprocating or up-and-down motion to the block *j* and spindle *k*, and consequently, also, to the dabbing-brush slide *m'*, which is attached in an adjustable manner to the upper end of the spindle *k* by means of the screw *n*, passing through slot *o*, formed in the cross-piece at the upper end of the slide *m'* and fixed by the nut *p* and washer *p'*. The journals of the shaft or axle *d* and their bearings in the bosses *e* and *f* are formed conical, the taper of all being in one and the same direction—that is, as shown, toward the front end of the shaft. On the back end of the shaft, which projects beyond the boss *e*, is fixed the driving-pulley *q*. The front part of the shaft *d* is screw-threaded, and on this is fitted a small hand-wheel *r*, having a central tapped hole in the hub, so that by screwing up this hand-wheel any wear of the mechanism is taken up. It is for this reason that the taper of the axle or shaft *d* in both journals is in one and the same direction. A lock-nut *s* is provided to lock the hand-wheel *r* in position.

The bosses *e* and *f* are provided at their

outer ends with circular recesses, in which are placed the annular washers *u*, the inner diameter of these corresponding with the diameters of the axle at these parts, while the outer diameters are considerably less than the diameters of the recesses, which recesses are covered by disks or plates *e' f'*, respectively. Inclined holes or passages *v* lead from the bottom of these recesses to the interior of the box *a*. By this arrangement any oil which may have traveled along the axle *d* from the interior of the box *a* is thrown off by the loosely-fitting washers *u*, and is drained from the bottom of the recesses back into the interior of the box *a* along the passages *v*, instead of passing forward to the outside of the bosses and dropping therefrom.

The lower part of the box *a* is kept more or less filled with oil, as shown in Fig. 2, so that the lower part of the disk *g* is constantly running in oil, and owing to the speed at which the disk rotates the oil is constantly being thrown off from the circumference, so as to thoroughly and automatically lubricate the slide-race *i*, the pin *m*, the half-annulus or half-ring *h*, and the shafts *d* and *k*. The oil may be supplied to the box *a* through feed-pipe *p*, Fig. 1, or in any other desired manner.

In the side of the box *a* is provided a passage *t*, leading from the lower part of the interior of the box. This passage terminates at the outside in a pap or lug t^2, into which is screwed one end of the connecting-pipe *w*. This connecting-pipe *w* screws into or forms part of the lower termination of the ring *x*. This ring is recessed on both sides, so as to receive the packing-rings *y*, the glass sides *z z*, and the inner sides of the closing-rings *a' a'*, which latter are held together in place by means of the screwed pins or bolts *b'*.

c' is an air-hole provided in the top of the ring *x*, and d^9 is a plugged hole, from which the plug *d'* can be unscrewed, so as to drain the oil from the interior of the box *a* when desired. It will be evident that so long as the level of the oil in the box *a* stands between the lines 1 1 and 2 2 this level will be indicated by the level of the oil in the chamber between the glasses *z z*.

If, instead of locating the passage *t* at the lower part of the box *a*, it be located at a higher position and made larger in section and the ring *x* be placed close to the side of the box *a*, the presence of oil in sufficient quantity to lubricate the apparatus will be indicated by the splashing of oil between the glasses *z z* as it is thrown off by centrifugal action from the edge of the rapidly-rotating disk *g*.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I do claim as my invention, and desire to secure by Letters Patent, is—

1. In connection with the mechanism for actuating the dabbing-brushes of combing-machines, the combination of a rotating disk *g*, having a cam or eccentric groove in the face thereof, with a half-ring piece *h*, provided with a projecting pin *m*, substantially as set forth.

2. The combination of the rotating disk *g*, having a cam or eccentric groove in the face thereof, the sliding piece *h*, having a projecting pin *m*, the slide-block *j*, the spindle *k*, and the cover *b*, having the slide-race *i*, substantially as set forth.

3. The combination of the shallow box *a*, the cover *b*, having a vertical slide-race therein, and a stuffing-box closing the upper end of said race, with the disk *g*, provided with a cam-groove in the face thereof, the spindle *k*, and a connection between said spindle and the cam-groove, substantially as set forth.

4. The combination, with the box *a*, provided with a hub *e*, having formed therein a tapering bearing, and the cover *b*, also provided with a tapering bearing of a less diameter than that in the hub of the box and having its taper in the same direction, of the shaft *d*, screw-threaded at its smaller end and having tapering portions that fit the bearings in the box hub and cover and a cylindrical portion, the disk *g*, mounted on the latter portion, the hand-wheel *r* on the threaded end, the covering-plate *f*, a washer interposed between said plate and the hand-wheel, and the lock-nut *s*, substantially as and for the purposes specified.

5. The combination, with the box *a*, provided with a hub *e*, having a tapering bearing formed therein and a recess in its upper face, the cover *b*, having also a tapering bearing formed therein and a recess in the outer face thereof, and channels *v*, connecting the recesses with the interior of the box *a*, of the shaft *d*, having tapering portions fitting the bearings in the box hub and cover, the washers *u* on said shaft within the recesses in the faces of its bearings, the covering-plates *e' f'* for said recesses, and a locking device to lock the shaft against endwise motion in its bearings, substantially as and for the purposes specified.

6. The combination, with the box *a*, of the tubular connection *w x*, terminating in a ring *y*, the glass plates *z*, washers interposed between them and the ring *y*, and the open clamping-rings *a'*, substantially as and for the purposes specified.

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Witnesses:
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