

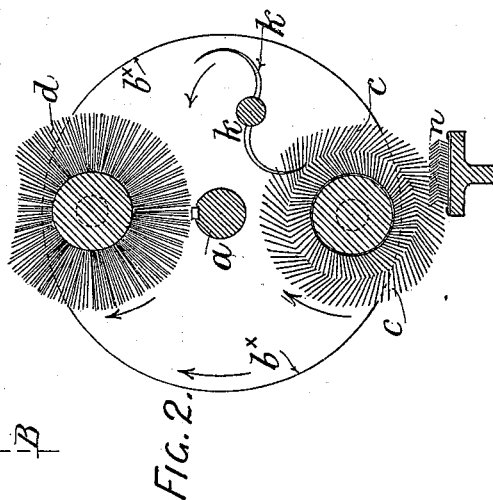
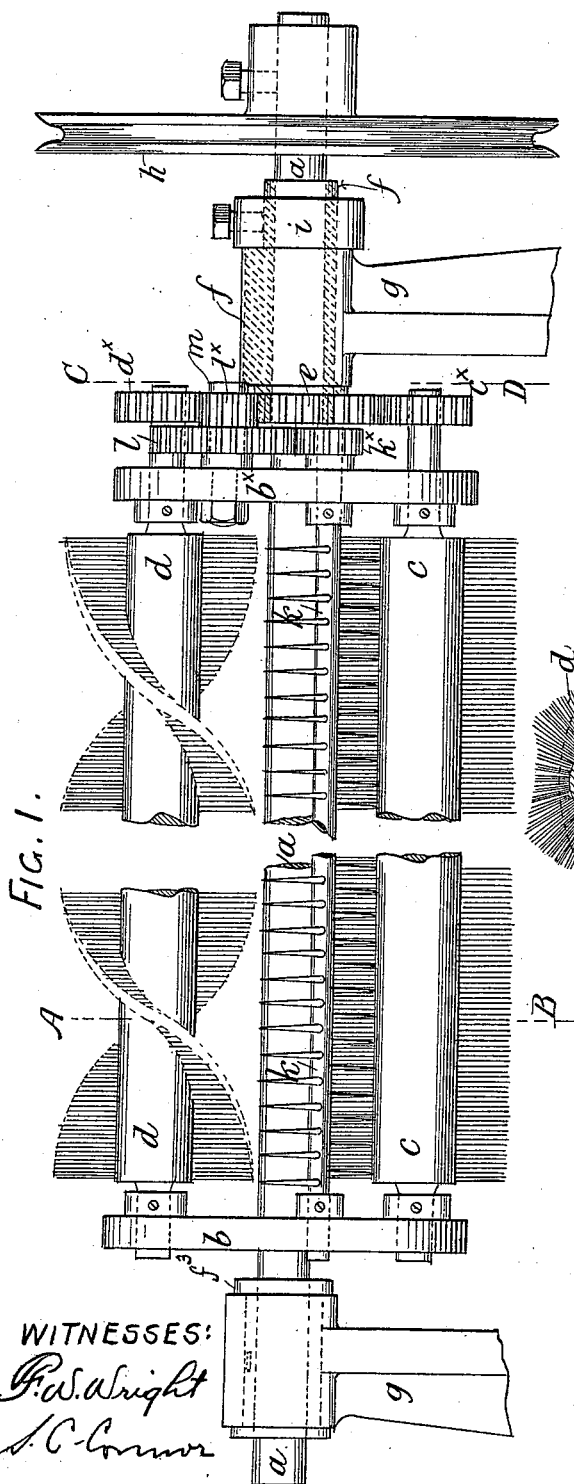
W. RHODES.

APPARATUS FOR STRIPPING FLATS IN CARDING ENGINES.

(Application filed July 25, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:  
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 WRIGHT RHODES  
 BY  
*Howson and Howson*  
 HIS ATTORNEYS.

No. 645,832.

Patented Mar. 20, 1900.

W. RHODES.

APPARATUS FOR STRIPPING FLATS IN CARDING ENGINES.

(Application filed July 28, 1899.)

(No Model.)

2 Sheets—Sheet 2.

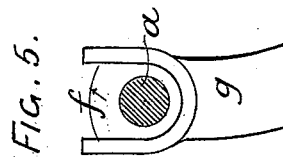
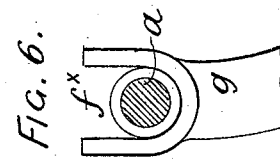
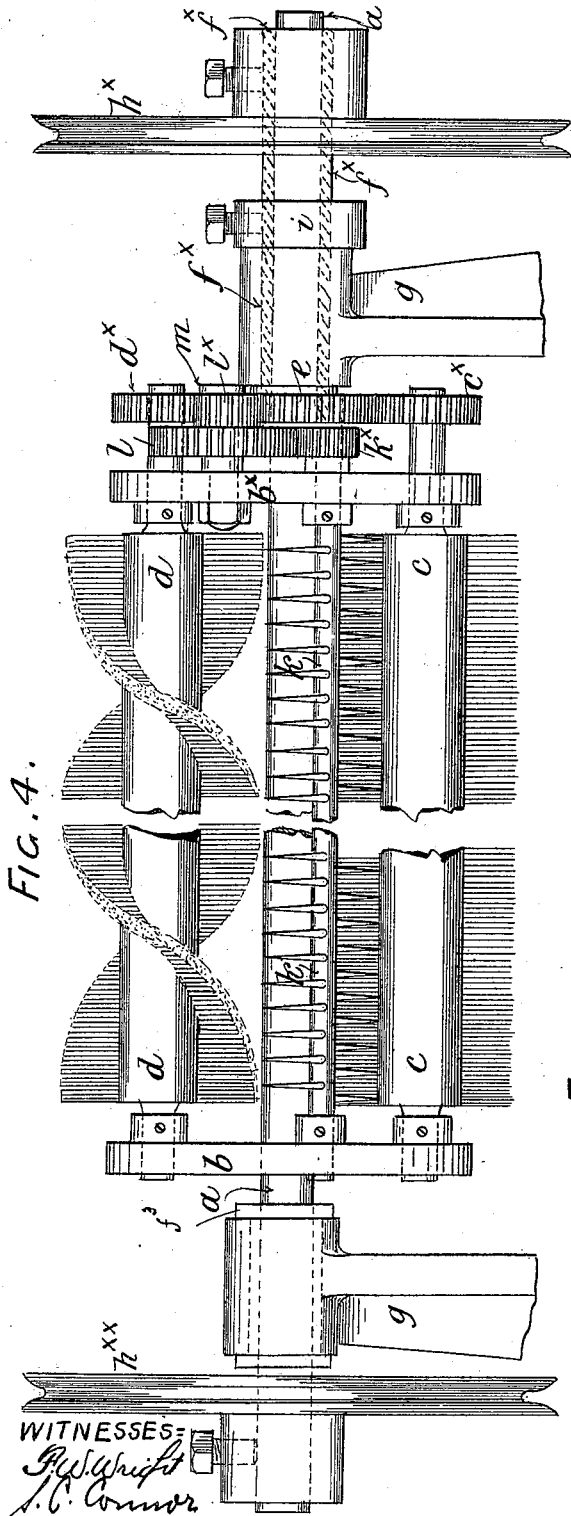
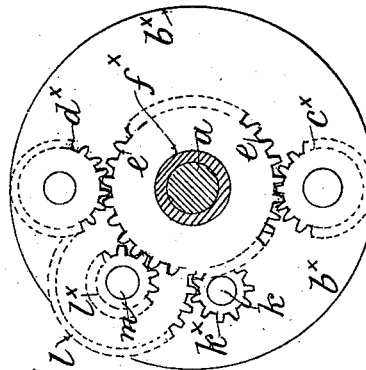


FIG. 3.



INVENTOR  
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# UNITED STATES PATENT OFFICE.

WRIGHT RHODES, OF MANCHESTER, ENGLAND.

## APPARATUS FOR STRIPPING FLATS IN CARDING-ENGINES.

SPECIFICATION forming part of Letters Patent No. 645,832, dated March 20, 1900.

Application filed July 25, 1899. Serial No. 725,090. (No model.)

*To all whom it may concern:*

Be it known that I, WRIGHT RHODES, a subject of the Queen of Great Britain, residing at Manchester, in the county of Lancaster, England, have invented new and useful Improvements in or Applicable to Apparatus for Stripping and Cleaning Flats Used in Carding-Engines, of which the following is a specification.

10 This invention relates to the means for stripping and cleaning the flats used in what are called "revolving-flat carding-engines," and has for its objects, first, simple and efficient means for stripping and cleaning from  
15 such flats the adhering cotton fibers, "neps," and other impurities which have not been effectively removed by the stripping-comb when the flats are at work, and, secondly, removing the so-stripped-off cotton fibers, neps, and other impurities from the stripping-roller, as hereinafter explained, automatically  
20 by a revolving circular comb, thereby keeping the said stripping-roller always clean and in efficient working order while at work.

25 The manner in which my said invention is to be performed or carried into practical effect will be readily understood on reference to the two sheets of illustrative drawings hereunto annexed and the following explanation thereof.  
30

Figure 1 on the drawings is an elevation of my improved apparatus; Fig. 2, a vertical transverse section of the same through the line A B looking from the left, and Fig. 3 a similar view taken through the line C D looking from the right. Fig. 4 is an elevation of a modification of the same, and Figs. 5 and 6 are detached views hereinafter more particularly referred to.

40 My apparatus consists principally of a central shaft *a*, upon which two cast-iron disks *b* and *b*<sup>x</sup> are fastened, one near to each end, at the required distance apart, according to the width of the wire on the flats. At equal  
45 distances from the centers of these disks *b* *b*<sup>x</sup> and in a straight line with the center of the said shaft *a* and parallel with each other bearings are formed in these disks to receive the end pivots or shafts of two rollers *c* *d* of  
50 small diameter, made of wood or other suitable material, one of which, *c*, is covered with a suitable card-stripping fillet, the other, *d*, with

one or more rows of bristles, set in spirally. At the one end (which I will call the "driving" end) of each roller a small gear-wheel or pinion *c*<sup>x</sup> *d*<sup>x</sup> is fixed on the shaft, which engages  
55 or gears with a larger wheel *e* of same pitch fixed on a stationary short boss or tube *f*, which latter is bored to receive the said central shaft *a* and in which the same is free to  
60 revolve. This stationary boss or tube *f* forms the bearing for the central shaft *a* at one end and also the bearing for the whole apparatus at one end by having two sides flattened and fitting into the steps of the ordinary flat-stripping-brush brackets *g*, (see  
65 also detached view, Fig. 5,) or other suitable means may be adopted for fastening or fixing this boss. The two small wheels or pinions *c*<sup>x</sup> and *d*<sup>x</sup>, fixed at the end of the stripping-roller and bristle-brush, gear, as aforementioned, with the large wheel *e*, fixed on the  
70 inside of the stationary boss or tube *f*, in which the central shaft *a* revolves, and no matter in what position the apparatus may  
75 be these pinions being always at equal distances from the axis of the central shaft and disk will always remain in gear. The fact of the two disks *b* *b*<sup>x</sup> being fixed on the said  
80 central shaft and having bearings formed in a parallel line to the center of the said shaft and being parallel to each other and carrying the said stripping-roller *c* and bristle  
brush *d*, which latter are both geared by the small pinions with the stationary wheel *e*,  
85 causes the stripping-roller *c* and the bristle brush *d* to revolve on their own axes and also at the same time to be carried around the central shaft in the same direction, as hereinafter explained. A grooved band-pulley *h*, fastened to the central shaft *a*, drives the same  
90 in the desired direction, as shown by the arrows, at a positive speed, causing the aforementioned two disks to revolve with it. The bristle brush *d* and stripping-roller *c* being  
95 geared at their ends with the aforementioned large stationary gear-wheel *e*, fixed on the stationary boss or tube *f*, are caused thereby to revolve on their own axes at a positive speed in the desired direction at the same time they  
100 are carried around the central shaft *a* in the same direction as they are revolving on their own axes. When at work, the apparatus therefore revolves in such a manner that the

said stripping-roller *c* and bristle brush *d* alternately strip and brush the wire of the flats *h* (see Fig. 2) in an efficient manner by having a double action or movement on the wire of the flats—that is, an upward or lifting and at the same time a forward movement. Different speeds can be given to the apparatus by using different sizes of driving band-pulleys. A setting ring or collar *i* (see Fig. 1) fits on the said stationary boss or tube *f* for setting and keeping the same in position. A circular revolving comb *k* is attached in a suitable position by forming bearings in each disk *b b<sup>x</sup>* at equal distances from the center of the stripping-roller *c* and the center of the disks to receive the end pivots or shaft of the said circular comb. This circular comb *k* receives its rotating motion in the desired direction by means of two intermediate or carrier wheels *ll<sup>x</sup>*, revolving freely on a short stud *m*, which latter is fixed to the disk, in the following manner: A small pinion or gear-wheel *k<sup>x</sup>*, fixed at one end of the shaft of the circular comb, engages or gears with the larger, *l*, of two carrier-wheels, free to revolve on the said short stud. To this carrier-wheel another and smaller wheel or pinion *l<sup>x</sup>* is pinned or pegged, (both wheels being free to revolve together on the short stud,) the pinion *l<sup>x</sup>* engaging or gearing with the large stationary wheel *e*. When the disks *b b<sup>x</sup>* are caused to revolve by being positively driven by the band-pulley *h*, fixed on the central shaft, the small pinion *l<sup>x</sup>* on the short stud *m*, which gears with the large stationary wheel *e* on the stationary boss or tube *f*, is carried around the said large wheel *e* and also at the same time is caused to revolve on its own axis and being pinned to the other and larger gear-wheel *l* and revolving together on the said short stud and the larger wheel *l* again being geared with the small pinion *k<sup>x</sup>* at the end of the circular comb *k* to rotate in the desired direction and in such a manner and at such a suitable and quicker speed than the stripping-roller *c* is revolving that the said comb *k*, which being set into the wire of the card-fillet of the stripping-roller *c* will strip or clear the said stripping-roller automatically of the cotton fibers, neps, &c., taken from the flats, thereby keeping the said stripping-roller *c* always clean and efficient to perform its work and while the apparatus is in motion. This comb *k* is also carried around the central shaft at the same time as it is revolving on its own axis. The comb *k* consists of a thin steel shaft or other suitable material, into which two or more rows of steel teeth, bent or shaped into a half circle, or nearly so, are inserted at equal distances apart and in such a position as shown in Fig. 2. When this circular comb *k* gets full of cotton fibers, &c., or nearly so, the strips of cotton fibers collected by it are removed by the attendant. This comb may be made to lift out of its bearings for cleaning the same. The bristle brush *d* is made rather larger in

diameter than the stripping-roller *c* to enable the bristles to penetrate deeper into the wire and brush out the dust from the bottom of the foundation or cloth of the flat-clothing *n*. The apparatus can of course be set or adjusted by the adjusting-screws or arrangement in the ordinary stripping-brush brackets in the same manner as any ordinary stripping-roller. At the other end of the central shaft a bush *f<sup>3</sup>* or step is placed upon the said shaft *a*, and is fastened to it by a set-screw. This bush is of corresponding thickness to the stationary boss or tube at the other end of the central shaft, and the said shaft and bush revolve together in the ordinary flat-stripping-brush steps or brackets *g*. I also attain the same or similar results by the following arrangement: Instead of having the aforementioned short boss or tube in which the central shaft revolves stationary or fixed, as described, I may allow the same (the boss) to be free to revolve or loose in the bearings or steps of the ordinary flat-stripping-brush brackets *g*. (See Fig. 4 and detached view, Fig. 6.) The said short boss or tube *f<sup>x</sup>* is in this case made without the two flat sides, but perfectly round to revolve in the steps or bearings of the ordinary brackets *g*. Upon this loose boss or tube the large gear-wheel *e* is fixed, as before, and the same engages with the two small pinions *c<sup>x</sup>* and *d<sup>x</sup>*, fixed at the end of the stripping-roller and the bristle brush. A grooved band-pulley is fastened on the said loose boss and drives the same at a positive speed in the opposite direction to which the stripping-roller *c* and bristle brush *d* are required to revolve, which causes the large gear-wheel *e*, fixed on the said loose boss, to engage with the pinions fixed on the stripping-roller *c* and bristle brush *d*, and thereby causing them to revolve in the opposite and desired direction at a positive speed. At the same time a slow forward or revolving movement around the central shaft is given to the said stripping-roller *c* and bristle brush *d* by a grooved band-pulley *h<sup>x</sup>*, fixed at the other end on the central shaft and driving the same (and consequently also the two disks *b b<sup>x</sup>*, upon which the two rollers are mounted) at a suitable positive speed in the same direction as the stripping-roller and the brush are revolving. This second arrangement, as above described, requires an additional driving-pulley *h<sup>x</sup>* and requires the short boss or tube to be made round (without the two flat sides) and free to revolve in the ordinary steps *g* of the usual flat-stripping-brush brackets. The short boss *f<sup>x</sup>* is driven positively by the band-pulley *h<sup>x</sup>*, and the central shaft *a* is also driven positively by another band-pulley *h<sup>x</sup>*. I therefore prefer my first arrangement, as fully described, as it only requires one grooved band driving-pulley to drive the whole apparatus and can be applied to any card without any alterations or additional driving-pulley than the usual means of driving a flat-stripping brush.

The advantages of my apparatus are an efficient double-acting two-speed movement for removing or stripping and brushing the cotton fibers, neps, and other impurities and preventing the so-called "felting" or accumulation of cotton fibers and other impurities in the flat-card clothing.

I claim as my invention—

1. Apparatus for cleaning flats of carding-engines, consisting of a main shaft, rollers adapted to come into contact with the flats, shafts on which said rollers are mounted and adapted to revolve about the axis of the main shaft in combination with a comb mounted to revolve about the main shaft and adapted to clean the rollers of fibers substantially as described.

2. Apparatus for cleaning the flats of carding-engines, consisting of a main shaft, rollers adapted to clean the flats, shafts on which said rollers are mounted, adapted to revolve about the axis of the main shaft and pinions on the roller-shafts in combination with a comb mounted on a shaft adapted to revolve about the main shaft, and provided with a pinion, a pinion central with the main shaft, all said roller-shafts adapted to be revolved on their own axes through engagement of their pinions with the central pinion, substantially as described.

3. Apparatus for cleaning the flats of card-

ing-engines consisting of a main shaft, rollers adapted to clean the flats and a comb adapted to clean the rollers, shafts on which the rollers and comb are mounted to revolve about the axis of the main shaft, gearing adapted to revolve the rollers on their own axes and adapted to revolve the comb on its axis at a greater speed than that of the rollers substantially as described.

4. Apparatus for cleaning the flats of carding-engines consisting of a main shaft, three shafts parallel to the main shaft and adapted to revolve both about the axis of the main shaft and on their own axes, the said shafts respectively carrying a stripping-roller, a bristle brush and a comb substantially as described.

5. Apparatus for cleaning the flats of carding-engines consisting of a stripping-roller and a roller carrying bristles spirally secured thereto, and means to cause said rollers to successively come into contact with the flats to be cleaned, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WRIGHT RHODES.

Witnesses:

GEORGE DAVIES,  
JNO. HUGHES.