

No. 650,220.

Patented May 22, 1900.

E. V. BATES.

FEEDING MECHANISM FOR CARDING ENGINES.

(Application filed May 5, 1899.)

(No Model.)

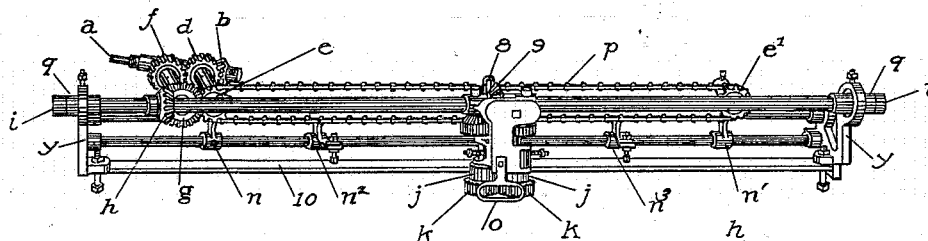


Fig. 1.

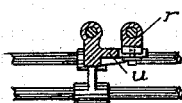


Fig. 5.

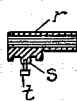


Fig. 6.

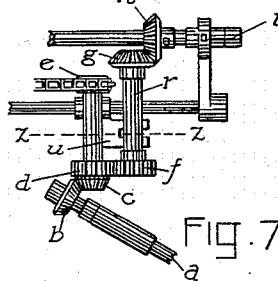


Fig. 7.

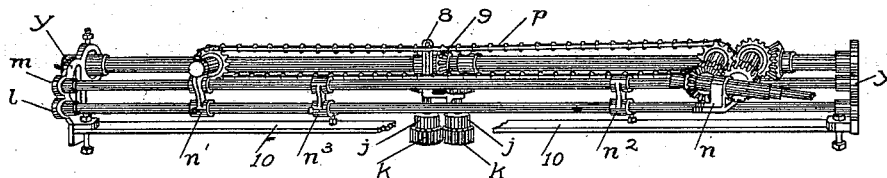


Fig. 2.

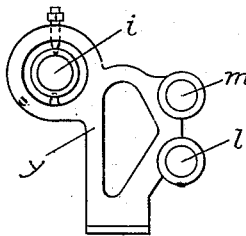


Fig. 3.

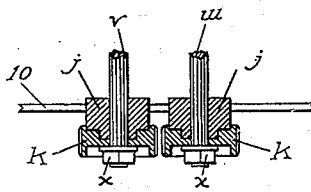


Fig. 4.

WITNESSES
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FEEDING MECHANISM FOR CARDING-ENGINES.

SPECIFICATION forming part of Letters Patent No. 650,220, dated May 22, 1900.

Application filed May 5, 1899. Serial No. 715,749. (No model.)

To all whom it may concern:

Be it known that I, EDDO V. BATES, a citizen of the United States, and a resident of Dracut, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Feeding Mechanism for Carding-Engines, of which the following is a specification.

My invention is an improvement of my patent of February 19, 1895, No. 534,418, and also of my patent of October 11, 1898, No. 612,303, relating to feeding mechanism for carding-engines; and it consists in the simplification thereof and addition of new and useful improvements thereon. Its objects are to lower the driving mechanism and the sprocket-chain, to permit greater range of adjustment of the parts for laying a shorter or longer sliver, to decrease the weight of all the parts, to permit greater facility of access to all parts, and to provide a compact and positive-action distributing-carriage. I attain these objects by means of the mechanism illustrated in the accompanying drawings, in which similar letters and numerals refer to similar parts, and in which—

Figure 1 is a front perspective view of the whole apparatus. Fig. 2 is a rear perspective view. Fig. 3 is an elevation of one of my end standards. Fig. 4 is a sectional view of the fluted and plain rolls in the distributing-carriage. Fig. 5 is a section through the line $z z$ of Fig. 7. Fig. 6 is a transverse sectional view of a portion of the sleeve r and shaft, together with its support; and Fig. 7 is a top view of the adjustable driving mechanism for the sprocket-chain and distributing-carriage. The base-plate 10 supports at its ends the standards $y y$, Figs. 1, 2, and 3, which are firmly connected by rods l and m and carry shaft i in suitable bearings $q q$.

The support u , attached by collars n and set-screws to the rods l and m , forms a collar or bearing and carries the shaft-connecting sprocket e and bevel-gear c and also forms a U-shaped projection, along which may be moved the collar r by means of shoulder s and set-screw t . (See Figs. 5 and 6.)

Power is transmitted to the apparatus by shaft a , carrying bevel-gear b , which meshes

with bevel-gear c , thus giving motion to the shaft, on which are affixed gear d and sprocket e , as well as bevel-gear c . Gear d meshes with gear f , which through a connecting-shaft bearing in the collar r transmits power to the bevel-gear g at the other end of the shaft. This gear f is attached to the shaft by means of a set-screw or in any other suitable manner and may be replaced by a larger or smaller gear at pleasure, the collar r and gear g being adapted to slide on support u and to be held in place by means of spur s and set-screw t , and thus keep gears f and d enmeshed. Bevel-gear g meshes with bevel-gear h , which may be so adjusted on the splined shaft i by means of a set-screw or other suitable device as to always mesh with g when gear f is changed.

The endless chain p traverses and is propelled by sprocket e and also traverses sprocket e' and moves the distributing-carriage backward and forward by means of a projecting pin which engages throughout its course the slotted tongue 8, firmly attached to the back of the carriage in the same manner as in my patents of February 19, 1895, No. 534,418, and of October 11, 1898, No. 612,303. The bearings of sprocket e' are supported by collars n' on rods l and m , and by set-screws or other suitable appliances may be adjusted at any point along rods l and m to correspond with the chain p when it is desired to increase or diminish the length of the path of the distributing-carriage by adding links to or removing links from the chain p . The supports $n^2 n^2$ are merely to give stiffness to the apparatus and serve as braces between rods l and m .

The distributing-carriage is similar to the head described in my patent of February 19, 1895, No. 534,418, except that the slotted tongue 8 is attached lower down than in said patent to correspond with the lower position of chain p in this device. Motion is transmitted to the fluted rolls $k k$, which turn inwardly and draw in the sliver to deliver it upon the feed-table through shafts v and w , to the ends of which they are attached by nuts $z z$, and these shafts are rotated by similar devices to those shown in my patent of

February 19, 1895, No. 534,418, taking motion from shaft *i* by sleeve bevel-gear 9, which slides upon the splined shaft *i*, as there shown. The novel feature of this distributing-carriage consists in loosely mounting the plain rolls *j j*, which are smaller than the fluted rolls *k k*, upon the shafts *v w* directly above rolls *k k* and in a position to roll upon the face of base-plate 10 while the carriage is in motion, thus acting as guides to it, while fluted rolls *k k* extend partially under the base-plate 10, and thus carry the sliver from the guide-*O* and deliver it immediately under the said plate 10 upon the feed-table.

15 The advantages of my device are a lighter, lower, and more compact frame and more compact working parts, dispensing with the intermediate driving-gear formerly used and bringing down the chain to a level with the driving-shaft *i*, this permitting the operator to more conveniently keep the apparatus in order and to more easily reach over the whole device to the feed-table, facility in changing the speed of the feed-rollers by changing the gear *f* for one larger or smaller and adjusting collar *r* and gear *h* to correspond, and facility in changing the range of feed upon the feed-table by lengthening or shortening chain *p* and adjusting sprocket *e'* along rods *l* and *m*.

30 By placing the two plain loose guide-rolls *j j* upon the shafts *v w* and by having them smaller than the fluted feed-rolls *k k* the said rolls *k k* extend under the plate 10 and deliver the sliver directly underneath it, thus avoiding any springing back of the carriage by elasticity of the sliver when the sliver gets between the face of plate 10 and the rolls *k k*, as was the case in the former devices. These plain rolls also serve as more positive guides and lateral supports for the distributing-carriage than the rolls used on the rocking arm in my patent numbered 612,303, of October 11, 1898.

In former devices trouble has arisen from pieces of sliver or waste getting away from the feed-rolls and winding upon their shafts, and this my plain rolls prevent, for if pieces should wind upon them while traveling one way as soon as they reverse upon the return trip of the carriage these pieces are unwound and thrown off. In case the sliver, or part of it, should work up above the fluted rolls no harm is done, nor is it broken, for the plain rolls allow it to run by them and under the plate 10 without winding or breaking it.

What I claim, and desire to secure by Letters Patent, is—

1. In a carding-engine, a traveling distributing-carriage, having fluted rolls for feeding the sliver, plain rolls loosely mounted on the same shafts, above and smaller than the fluted rolls, and a fixed bottom plate against the face of which the plain rolls rest in such a way as to be revolved by frictional contact as the carriage moves.

2. In a carding-engine, a frame consisting of a bottom plate, two end stands and two

rods connecting the end stands, combined with suitable power-distributing mechanism supported by the two rods, for moving the distributing-carriage back and forth, said distributing-carriage supported by a main shaft, and the said main shaft which is supported by bearings in the end stands and derives motion from the power-distributing mechanism and transmits it to the feed-rolls of the distributing-carriage, as described.

3. In a carding-engine, the combination of two fixed rods, a sprocket carried by bearings adapted to be adjusted upon and along said rods, an endless chain traversing said sprocket and adapted to move the distributing-carriage back and forth, a second sprocket which transmits to the endless chain, power derived from the main power-shaft through meshing gears and a short connecting-shaft, with mechanism adapted to rotate the feed-rolls of the distributing-carriage, and said distributing-carriage as described.

4. In a carding-engine, the combination of a driving-shaft and bevel-gear, with a short shaft carrying a bevel-gear, a sprocket and a plain gear, together with a second shaft carrying a fixed bevel-gear and a detachable plain gear, a collar carrying the second shaft and adjustable along a U-shaped support by means of a set-screw, to and from the first-named shaft, a sleeve bevel-gear adjustable along the driving-shaft, which actuates the feed-rolls of the distributing-carriage, so as to always mesh with the last-named bevel-gear, a distributing-carriage for feeding the sliver, and a sprocket and endless chain traversing this and the first-named sprocket for imparting the backward and forward motion to said carriage as described.

5. In a carding-engine, the base-plate 10, standards *y, y*, and rods *l* and *m* connecting the standards *y, y*, forming the supporting-frame of the mechanism, combined with power-shaft *a* bevel-gear *b* carried by said power-shaft *a*, bevel-gear *c* meshing with bevel-gear *b*, gear *d* meshing with detachable gear *f*, detachable gear *f*, bevel-gear *g* carried by same shaft which carries detachable gear *f*, collar *r* which carries said last-named shaft, its support *s*, set-screw *t*, and the fixed support *u*, whereby collar *r* shaft and gear *f* may be adjusted to or from gear *d* and a larger or smaller gear *f* may be used, sleeve bevel-gear *h* adjustable along shaft *i* which transmits power to the feed-rolls, so as to always mesh with bevel-gear *g*, sprocket *e* carried by the same shaft with gears *c* and *d*, sprocket *e'* supported by collars *n'* upon and adjustable along rods *l* and *m* and endless chain *p*, traversing sprockets *e* and *e'* and adapted to move the distributing-carriage back and forth.

6. In a carding-engine, the combination of a frame consisting of a base-plate 10, end stands *y, y* and connecting-rods *l* and *m*, with power-distributing mechanism consisting of bevel-gear *c*, gear *d*, sprocket *e*, connecting-shaft, upon which said bevel-gear *c*, gear *d*

and sprocket *e* are rigidly affixed, detachable gear *f* meshing with gear *d*, bevel-gear *g*, shaft connecting gears *f* and *g*, sleeve *r* which supports said shaft and rests on slotted support *u* and is adjustable thereon by means of set-screw *t*, support *u*, sleeve bevel-gear *h* adjustable along shaft *i* to always mesh with bevel-gear *g*, and shaft *i* adapted to transmit motion to the feed-rollers of the distributing-carriage by suitable devices, with sprocket *e'* carried by collars *n'* adjustably attached to the rods *l* and *m* whereby it may correspond with chain *p* when it is lengthened or shortened, sprocket-chain *p* traversing sprockets *e* and *e'* and adapted by means of suitable connecting devices to move the distributing-carriage back and forth, and with a traveling distributing-carriage adapted to slide upon the shaft *i* and carrying fluted rolls *k*, *k* for feeding the sliver, firmly mounted on shafts *v* and *w*, and plain rolls *j*, *j*, smaller than the fluted rolls and loosely mounted above them upon the shafts *v* and *w*, said plain rolls adapted to roll along the face of base-plate 10 to conform to the motion of the

carriage, as described and for the purpose specified.

7. In a carding-engine, a traveling distributing-carriage having fluted rolls for feeding the sliver; revoluble plain rolls loosely mounted upon the same shafts with the fluted rolls to guide the carriage, and a bottom plate for rotating the plain rolls by frictional contact therewith as the carriage travels backward and forward, substantially as described.

8. In a carding-engine, a traveling distributing-carriage, having fluted rolls for feeding the sliver extending partially underneath the base-plate, plain rolls loosely mounted upon the same shafts, above and smaller than the fluted rolls, and a fixed base-plate against the face of which the plain rolls rest in such a way as to be revolved by frictional contact as the carriage moves.

In testimony whereof I have affixed my signature in presence of two witnesses.

EDDO V. BATES.

Witnesses:

FISHER H. PEARSON,
JOHN J. DEVINE.