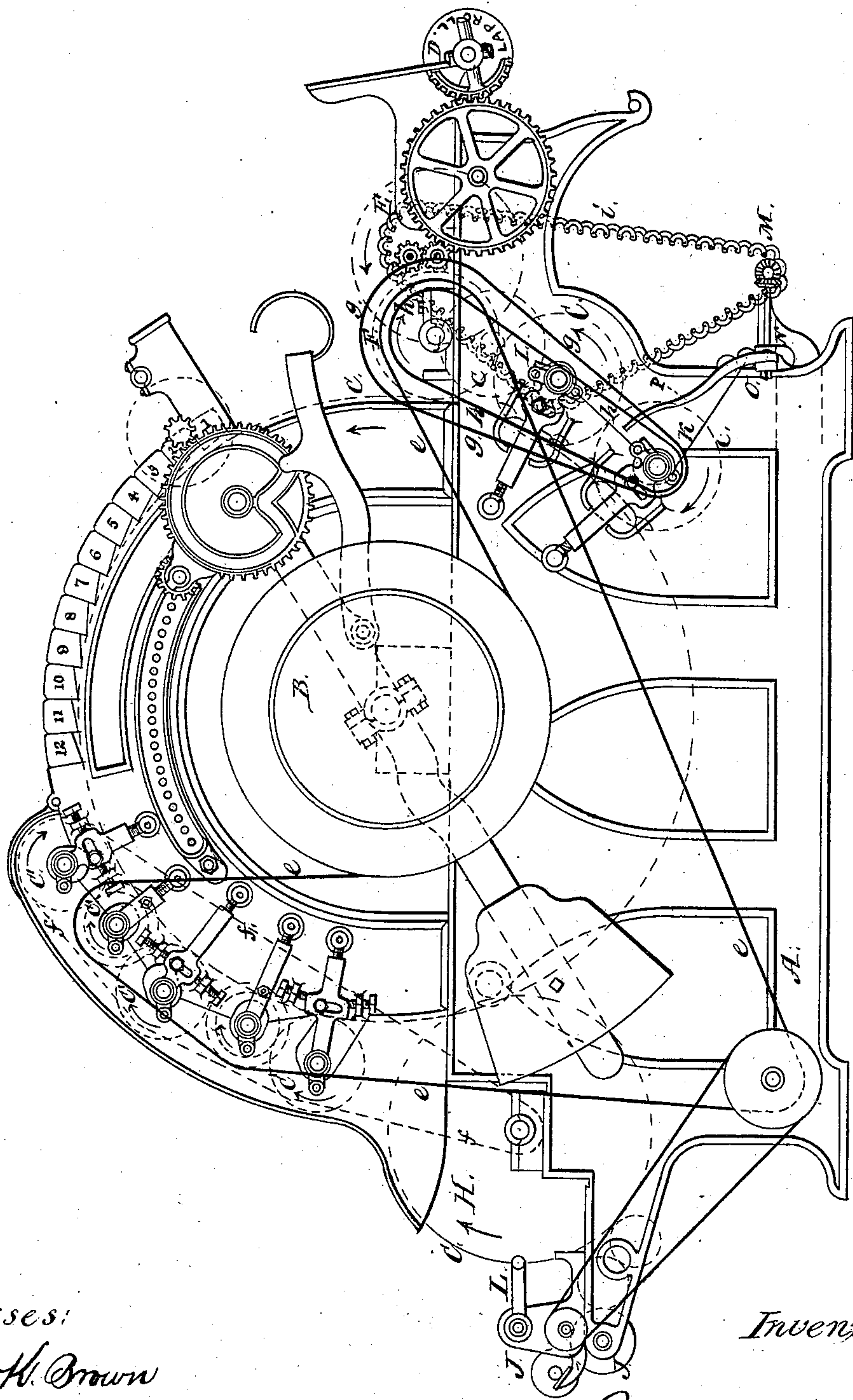


G. E. TAFT.
COTTON-CARDING ENGINE,

No. 193,571.

Patented July 24, 1877.



Witnesses:

Robt H. Brown

Henry B. Asgood

Inventor:

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UNITED STATES PATENT OFFICE.

GUSTAVUS E. TAFT, OF NORTHBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN COTTON-CARDING ENGINES.

Specification forming part of Letters Patent No. **193,571**, dated July 24, 1877; application filed October 16, 1876.

To all whom it may concern:

Be it known that I, GUSTAVUS E. TAFT, of Northbridge, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Cotton-Carding Engines; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which my improved carding-engine is represented in side view.

In the manufacture of cotton goods, carding is one of the first and most essential of the needful operations, and if this is ill done no subsequent work of drawing, slubbing, spinning, dressing, or weaving can produce cloth of the best quality.

Automatic stripping-cards, as heretofore constructed, are large and expensive, and they are also defective in the combined arrangement of their principal working parts, as the chief group of workers operate on the cotton before the top-flats have removed the motes and trash from the fibers.

To produce a carding-engine of convenient size, and of increased power and efficiency, is the object of my invention, which consists, mainly, in the combination and arrangement, with the under worker, of the leader-in rolls, the group of top-worker and clearer rolls, and a series of non-revolving top-flats in relation to each other, so that the latter are located in advance of the group of top-worker rolls, and remove the motes, leaves, &c., before they are broken and diffused by the rapidly-revolving top-rolls. I use a main cylinder of convenient diameter, say thirty-six inches. I drop the feed-rollers and the doffer below a horizontal plane passing through the axis of the main cylinder, thereby increasing the space for the group of top-flats and the main group of workers and clearers around the upper surface of the main cylinder. I arrange the group of top-flats, with their self-stripping mechanism, around the main cylinder, as near to the point where the cotton is fed in as conveniently, and before, instead of after, the main group of workers and clearers, whereby the greater portion of the trash, broken leaves, and motes of every kind is removed from the cotton and discharged from the card by the stripping top-flats before

the fibers reach the group of workers and clearers, which do a good part of the carding. This novel change in the relative arrangement of the top-flats and the main group of workers and clearers is the characteristic feature of my present improvement.

In the drawings, A indicates the card side of the machine; B, the driving-pulleys. The dotted lines C indicate the outside of the clothing of the card-cylinder, the worker, clearer, and stripper rolls. D indicates the lap-roll, and E the feed-rolls. F indicates the leader-in, and 1 2 3 4 5 6, &c., the top-flats. H indicates the doffer. K and I indicate two rolls covered with card-clothing, for stripping and carding the cotton of the main cylinder. L indicates the comb, and J the calender-rolls, which deliver the cotton to the railway-trough. *e* indicates the belt which drives the clearers, leader-in, and the comb; *f*, the belt which drives the workers; *g*, the belt which drives the lower roll K, and *h* the belt which drives the roll K at a different speed. *i* indicates a chain, which is operated by a chain-wheel on the lower feed-roll, and drives the roller I, and also the shaft M. This short shaft M has a miter-gear, which drives another miter-gear fixed on a small shaft, which has an eccentric, N, at the other end. This eccentric drives, by means of an eccentric strap, rod, and pin, the shipper-bar O. This shipper-bar O has two belt-guides, P, for shipping the belts *g* and *h* to and from loose pulleys, so that the roll I can be driven at varying speed, faster or slower than the main cylinder.

The operation is as follows: The cotton is fed from the lap over the lap-roll, in the usual way. The feed-rolls E seize the cotton and convey it uniformly to the leader-in F, which, running faster than the feed-rolls, draws the cotton, and conveys and applies it uniformly to the main-cylinder card-clothing C. The main cylinder, running faster than the leader-in, straightens and opens the fibers and loosens the trash and motes, and carries the cotton forward under the group of top-flats 1 2 3 4 5 6, &c. The top-flats do not revolve, but are clothed with a carding-surface in contact with the cylinder, and catch and hold the trash, broken leaves, and motes of all

kinds till they become filled or loaded, when they are automatically raised, cleaned, and replaced. The cotton, being carded and cleared of motes and non-fibrous matters by the group of top-flats, is carried forward by the main cylinder under the succeeding group of workers and clearers O', (the group of three workers and two clearers,) the workers running slow and carding the fibers, the clearers running fast, clearing the workers, and also carding the fibers, cards and lightens up the cotton, and tends to diffuse it evenly over the main cylinder and doffer, so that an even and uniform sheet may be combed from the doffer H by the comb L, in the usual way. The speed of the feed-rolls is adjustable to feed faster or slower. When much work is done the main cylinder requires more stripping than can be done with the doffer, and to effect this the cylinder-stripper roll K is used. The roll I breaks and diffuses any bunches of cotton

which the leader-in takes from the feed-rolls, and I and K keep the cylinder clean, assist in carding, and tending to harmonize and balance the action of the working parts of the whole machine.

Having thus fully described my invention, I claim—

The combination, with the main cylinder, of the feed-rolls, the leader-in, the top-flats, the top workers, the doffer, the cylinder-stripper, and the under worker I, the several parts being arranged around the main cylinder in the following order, to wit: the feed-rolls, leader-in, top-flats, upper workers, doffer, cylinder-stripper, and under worker, as and for the purpose set forth.

GUSTAVUS E. TAFT.

Witnesses:

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