

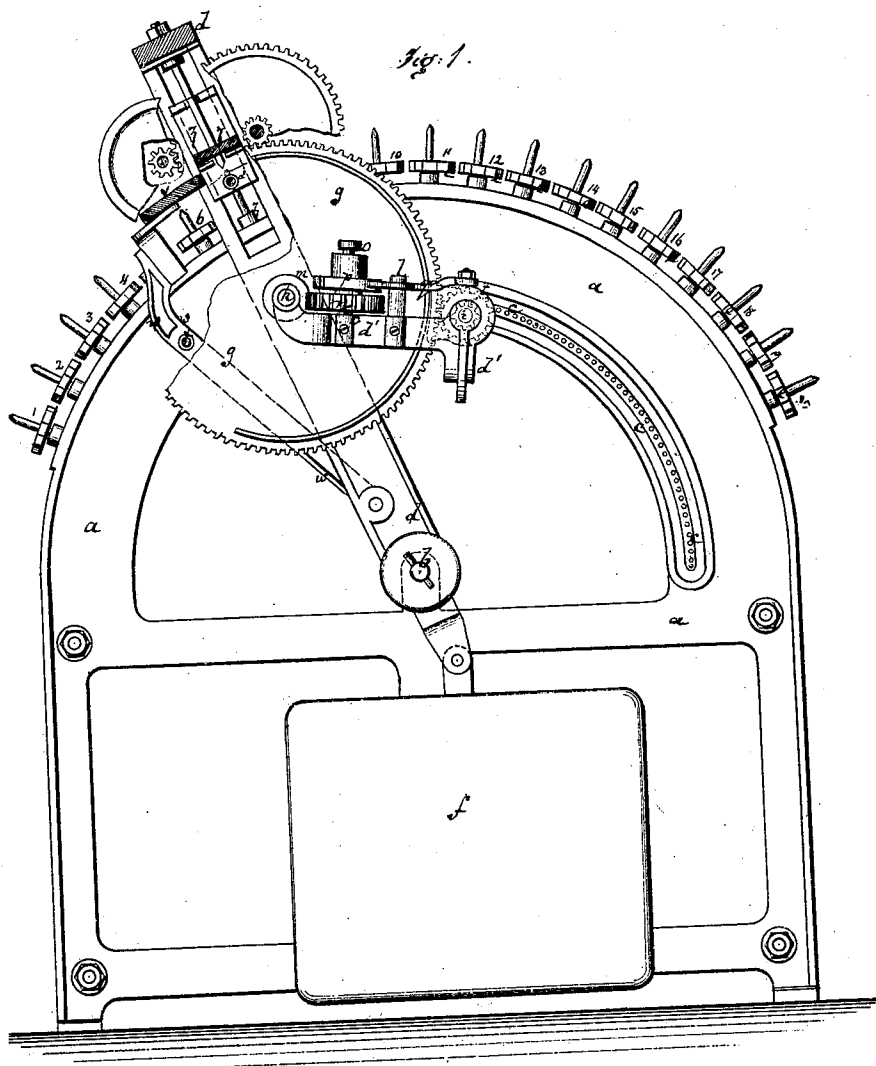
F. Morf,

3. Sheets. Sheet 1.

Card Cleaner.

No. 102851.

Patented May 10. 1870.



Witnesses:

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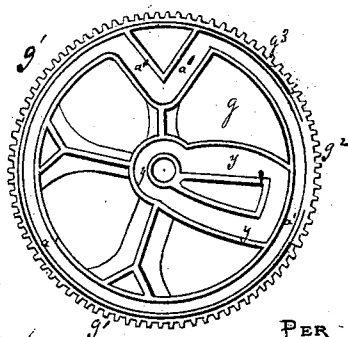
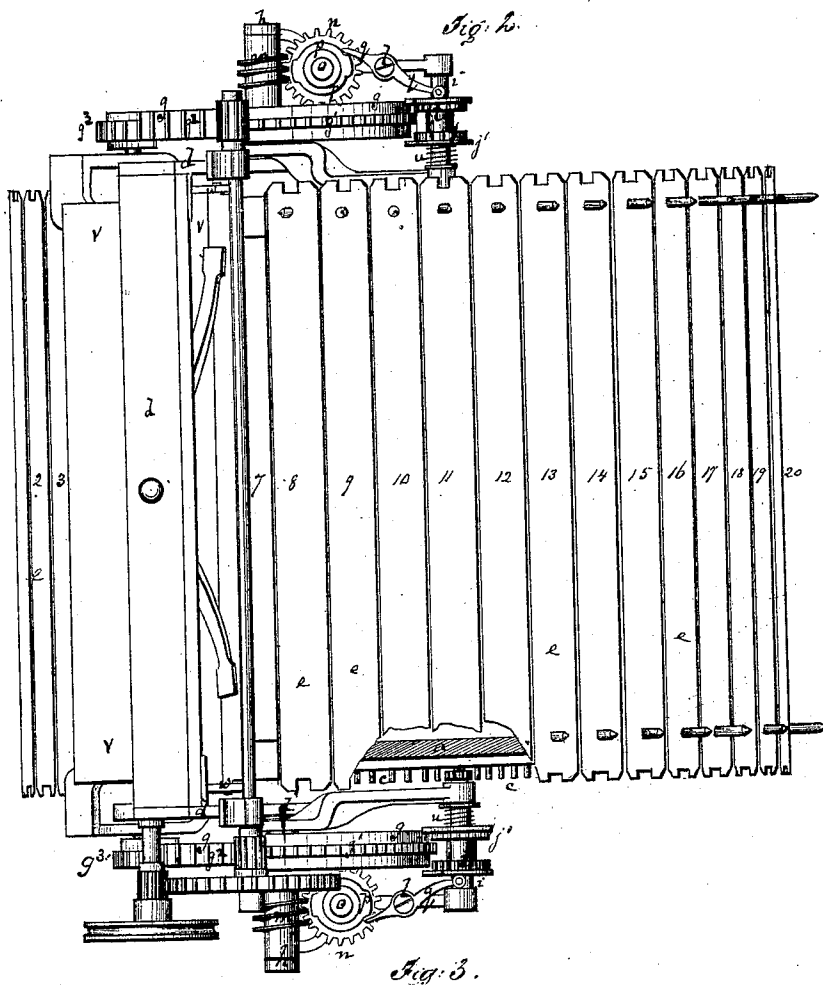
F. Morf,

3. Sheets. Sheet. 2.

Card Cleaner.

No. 102,851.

Patented May 10, 1870.



Witnesses:

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FERDINAND MORE, OF WETZIKON, SWITZERLAND.

Letters Patent No. 102,851, dated May 10, 1870.

IMPROVEMENT IN MECHANISM FOR STRIPPING THE TOP FLATS OF CARDING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern :

Be it known that I, FERDINAND MORE, of Wetzikon, in Switzerland, have invented new and useful Improvements in Carding-Engines; for which Letters Patent No. 776 were granted to me in England in 1864; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification.

This invention is applicable to the machines known as George Wellman's patent self-stripping carding-engines, and for which Letters Patent were granted in the United Kingdom of Great Britain to the said George Wellman, on the 11th day of September, 1860, No. 2,190.

The object of the present invention is to enable the top flats or top cards to be stripped in any required succession, instead of stripping them in regular alternate succession, as described in the specification of the said George Wellman; and, in order that the invention may be fully understood, I will proceed to describe it, with the aid of the accompanying sheets of drawings, reference being had to the figures and letters marked thereon.

Figure 1 is a side elevation of a carding-engine, with my improvements.

Figure 2 is a plan or top view of the same.

Figure 3 is an inner face view of the principal gear-wheel.

Figure 4 is a vertical transverse section of the machine.

Similar letters of reference indicate corresponding parts.

a is the main frame, which is to contain the main cylinder and the doffer of the carding-machine.

c are the mangle segments fixed to the sides of the frame.

d are the rocker-frames, supported in the projecting ends of the axle *b* of the main cylinder.

To these rocker-frames are attached the stripping apparatus of the top cards *e*. I have in this instance represented twenty top cards, but the number may be increased or diminished.

The rocker-frames *d*, and the parts connected therewith, are counterbalanced by the weights *f*, which are jointed, as usual, to the lower arms of the rocker-frames.

g is the principal wheel of the stripping apparatus. It is loose on the stud *h*, which is fixed on the rocker-frame *d*.

i is the shaft, with the small rack-pinion *i'*, which gears in the mangle segment *c*, fixed to the bend of the carding-engine, and which sets the stripping apparatus in motion.

This pinion *i'* may be assisted in traveling over the centers of the mangle segments by a spring (not shown in the drawing) fixed to the rocker-frame *d*, and pressing against the double arm or frame *d'*, in which the shaft *i* revolves. The stud *h* connects this arm *d'* to the rocker-frame *d*.

j is a pinion, hung so that it can slide on the shaft *i*. The edge of the wheel *g* has three different widths of teeth.

On about two-thirds of the entire circumference the teeth *g*¹ are narrow, and equidistant from the inner and outer face.

One-half of the remaining third has teeth *g*² extending from face to face of the wheel, and the remaining teeth, *g*³, reach from the outer face of *g* to the inner end of the teeth *g*¹.

To the pinion *j* is fixed the tumbler-plate *j'*.

m is a worm fixed on the boss of the wheel *g*.

This worm gears into the worm-wheel *n*, which revolves on a stud, *o*, that is fixed in a projection of the arm *d'*.

p is an eccentric fixed on the worm-wheel *n*, and *q* is a catch-lever on a stud, *l*, which is also fixed on the arm *d'*. This catch-lever *q* is acted upon by the eccentric *p*, and acts on the sliding pinions on the shaft *i*.

t is a second pinion on the shaft *i*. It is similar to the pinion *j*, and is firmly connected with the same, by means of a sleeve encircling and turning loosely on the shaft *i*, so that both will slide and revolve on said shaft simultaneously. The lever *q*, through the motion given to it by the eccentric *p*, causes the pinion *t* to slide on the shaft *i*, and brings it into or out of gear with the toothed segments *g*² *g*³.

A spring, *u*, throws the wheels *j* *t* outward, and holds the catch-lever against the eccentric.

The shaft *i* makes thus two revolutions, instead of only one, as usual. It is driven once around by the broad-toothed segment *g*² of the wheel *g* and the pinion *j*, as usual, and is driven around a second time by the segment *g*³, on the outside of the wheel *g*, gearing into the pinion *t*, so that, when both segments are in gear with the pinions, the whole apparatus travels double the usual distance, and goes over three top cards, instead of only one.

It is evident that the eccentric *p* must be made so that the pinion *t* is thrown out of gear during the stripping of the first half of the top cards, in order that the stripping apparatus may travel only its usual distance, and that it must come into operation during the stripping of the second half of the top cards, when the apparatus travels a double distance.

The stripping apparatus consists of a plate, *v*, secured to arms *w* that are pivoted to the frame *d*, and that have projecting pins *x* fitting into grooves *d'* of

the wheels *g*, said grooves giving to the stripper the required motion.

The top cards are lifted by slides *z*, which are also worked by grooves *y* of the wheels *g*.

The mode of operation is as follows:

When the stripping apparatus, starting from the feeding end of the machine, has stripped the first, third, fifth, and seventh cards, and arrives at the ninth top card, and has stripped it also, the pinion *t* comes into gear with the segment *g*³, and the apparatus then moves at the next motion to the thirteenth top card, and strips it, and then the seventeenth. Returning, the twentieth, sixteenth, and twelfth top cards are stripped; when the pinion *t* is drawn out of gear, and the apparatus strips the top cards marked 10, 8, 6, 4, 2. Returning again, the first, third, fifth, seventh, ninth, and eleventh top cards are stripped. At this point the pinion *t* comes again into gear, and the apparatus now strips the top cards marked 15 and 19, and returning again strips those marked 18, 14, and 10, when the pinion *t* is again thrown out of gear, and the apparatus strips the top cards marked 8, 6, 4, and 2, which brings it again to the position from which it started, and the above-described operation commences again.

The first ten top cards are consequently stripped

twice while the last ten are only stripped once; in all, thirty top cards are stripped, so that the wheel *g* has to make thirty revolutions while the worm-wheel *n* and the eccentric *p* make one revolution.

The tumbler-plates of the pinions fit into gaps or recesses of the wheel *g*, as long as such pinions are revolved. At other times these plates are guided by flanges of the wheel *g*.

By varying the number of teeth in the wheels, segments, and pinions, and the shape of the eccentric, the order of the succession in which the top flats are stripped may be modified or varied.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The combination of the wheel *g*, having teeth of different widths, as specified, and the sliding pinions *j* *t*, all arranged and operating as set forth, for the purpose indicated.

2. The combination of the cam *p* and clutch-lever *q* with the sliding wheels *t* *j* and wheels *g*, all arranged to operate substantially as herein shown and described.

Witnesses:
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