

T. C. KIRKHAM.
Card-Grinding Machines.

No. 140,376.

Patented July 1, 1873.

Fig 2.

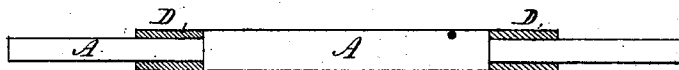
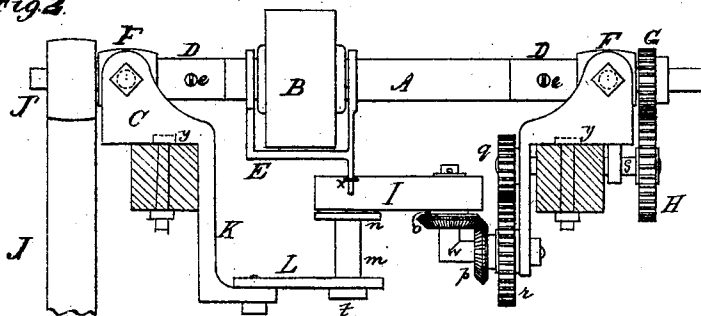
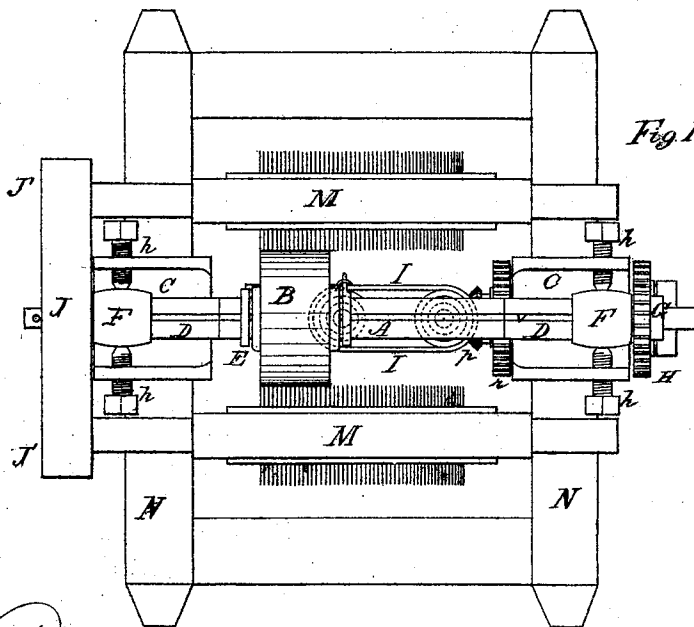


Fig 3.

Fig 1.



Wm. Price
P. & L. Scribner

Inventor.

Witnesses

Thomas Curran Kirkham

UNITED STATES PATENT OFFICE.

THOMAS C. KIRKHAM, OF ANCASTER, CANADA.

IMPROVEMENT IN CARD-GRINDING MACHINES.

Specification forming part of Letters Patent No. **140,376**, dated July 1, 1873; application filed March 22, 1873.

To all whom it may concern:

Be it known that I, THOMAS CURRAN KIRKHAM, of the village of Ancaster, in the county of Wentworth, in the Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Traverse Card-Grinders for Grinding Cotton and Woolen Cards; and I do hereby declare that the following is a full, clear and exact description of the construction and operation of the same:

Figure 1 represents a top or plan view of the device; Fig. 2, a side view of main shaft and collars in section. Fig. 3 is a side elevation detached from the supporting-frame.

There are two kinds of traverse grinders at present in use. One of them is only adapted to be used in the grinder-frame, and the other soon becomes out of repair, and only adapted to grind one width of card.

The object of my invention is the construction of a card-grinder that will be simple, durable, convenient; that will grind any width of card from a twenty-four inch to a forty-eight inch, or wider, if wanted, either in the card-frame or grinder-frame.

The device consists of a grooved, solid shaft, journaled in the circular boxes F F at each end, the said boxes being held by the points of the screw-bolts *h h h h*, which pass through the sides of the square boxes *c c*. The said shaft is made of smaller diameter at either end than at the center, as shown in Fig. 3, for the purpose of allowing loose collars, D D, to be placed thereon at each end to adapt the traversing grinder to grind any width of card. K is a standard, having a plate or bar, L, bolted to it, constructed with a slot at one end, through which the vertical shaft *m* passes, and is secured to it by the nut *t*. On the top of said shaft is a pulley, *n*, and a short distance to the right is a corresponding pulley, *o*, provided with a bevel gear on the under side. Around the two pulleys *n o* passes a belt I, the said belt having a small iron eye, *x*, into which passes a depending bar of the jacket-collar frame E. *p* is a small bevel gear keyed

on the spindle *w*, and meshes into its neighbor above it. Also keyed on the said spindle *w* is a cog-wheel, *r*, connecting with a smaller one, *q*, above it, which is keyed on the shaft *s*, and on the outer end of the same shaft or spindle is secured a larger cog-wheel, H, gear-into the cog-wheel G on the main shaft A. M M are cards in section on either side of the grinding-wheel B. They receive motion from the pulleys J'. The boxes *c c* are bolted to the frame N by the bolts and nuts *y y*, or by the same means to the card-frame. The boxes and gearing are so arranged and combined that they do not come apart when the bolts *y y* are withdrawn from the frame N, and cards of narrow width are ground by simply removing the collars D D from the shaft A, and pushing the two ends of the machine closer together, and setting the cog-wheel G to correspond with the one, H, below it, then tightening up the belt I sufficiently to drive the grinding-wheel.

Any length of collars can be fitted with a set-screw on the main shaft D to grind all widths of cards with one grinder, either in the card-frame or grinder-frame. It will be observed that there is one kind of traverse not adapted to use in the card-frame. The openings of the collars D, circular boxes F, cog-wheel C, are all of the same bore, for the purpose of allowing them to fit the shaft in grinding any width of card. On either side of, and joined together under the grinding-wheel B, is a jacket or collar-frame, E, with a vertical bar passing into the ring *x* on the belt I.

Rotary motion is given to the shaft A and grinding-wheel B from the pulley J, and lateral traversing motion is imparted to the wheel by means of the cog-wheels G H transmitting motion to the wheels *q r*; thence to the bevel-gears *p o*, to the traversing-belt I, the lateral motion of which causes the grinding-wheel to traverse back and forth, grinding the cards on either side of it.

Its peculiar advantages are, it is noiseless, durable, never heats, and is adapted to all widths of machine.

What I claim as my invention is—

1. The slotted bar *L*, carrying the shaft *m* for adjusting the belt *I* to varying lengths for the purpose of regulating the travel of the grinding-wheel, substantially as shown and described.

2. The arrangement of the adjustable collars *D D* in combination with the shaft *A* and

movable boxes *c c*, to which the traversing motion is attached, substantially as and for the purpose specified.

Hamilton, Canada, March 15, 1873.

THOMAS CURRAN KIRKHAM.

Signed in the presence of—

WM. BRUCE,
P. L. SCRIVEN.