No. 81,213. PATENTED AUG. 18, 1868.

B. S. ROY.
CARD GRINDER.

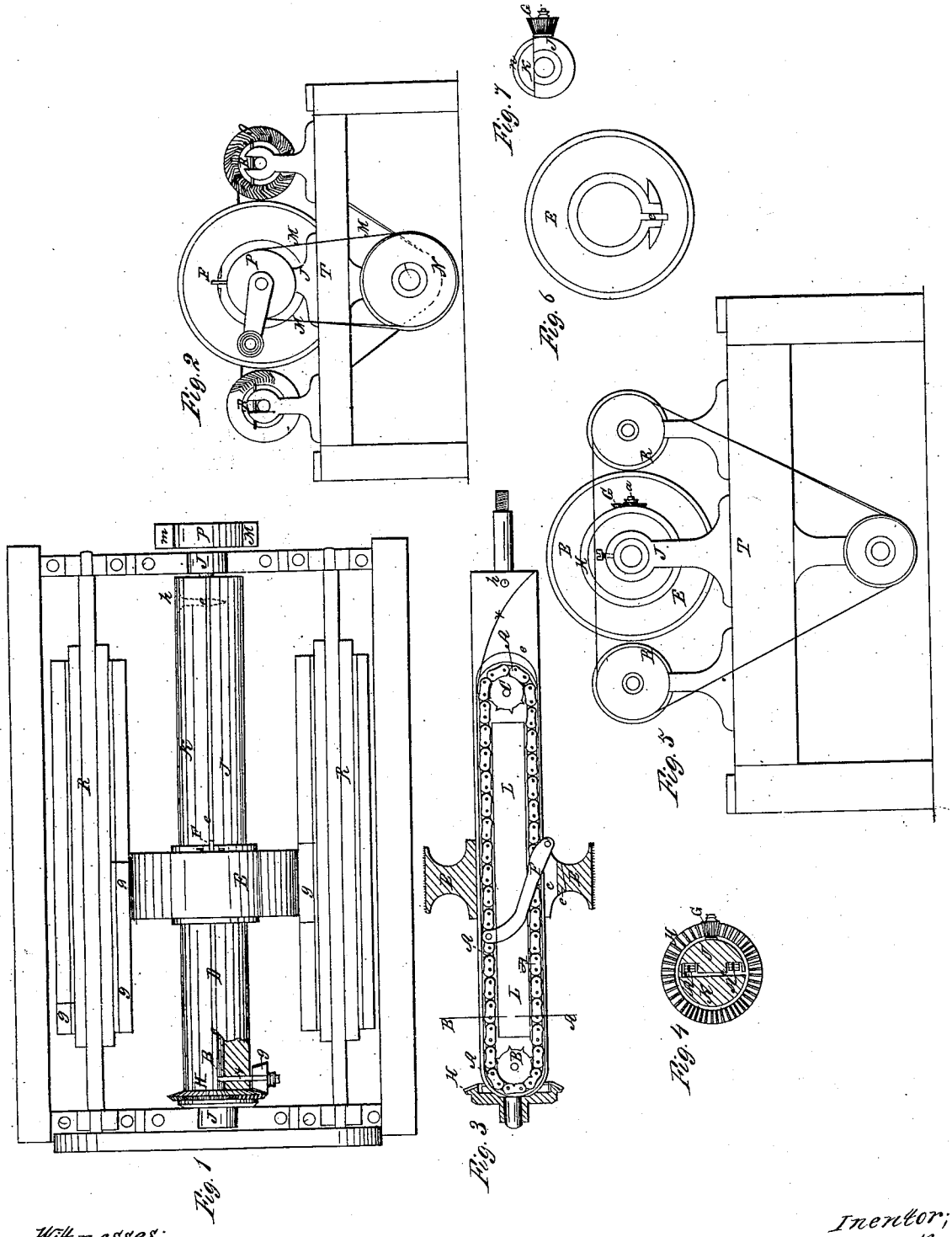

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Witnesses;
John E Crane
Chas. E. Smith

Inventor;
Basil S. Roy

United States Patent Office.

BOZIL S. ROY, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND HENRY S. MORSE, OF SAME PLACE.

Letters Patent No. 81,213, *dated August* 18, 1868.

IMPROVEMENT IN CARD-GRINDER.

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, BOZIL S. ROY, a native of St. Phillip, in the Province of Lower Canada, or Canada East, but at present, and for the whole of four years last past, residing in Lowell, in the county of Middlesex, and State of Massachusetts, and for seventeen years in the United States, and having on the eighth day of June, 1868, declared my intention to become a citizen of the United States, have invented certain new and useful Improvements in Card-Grinders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a plan or top view, partly in section.

Figure 2, an end elevation.

Figure 3, a central longitudinal section of the shaft D, on which the grinding-wheel traverses, the operating-chain, A, arranged and connected with said wheel and shaft, and the connecting-device or link F and stationary gear H, from which the power and the traverse motion are obtained by the rotary motion of said shaft.

Figure 4 represents a transverse section on the line A B, fig. 3.

Figure 5, an end view, opposite to that shown in fig. 2, but considerably enlarged.

Figure 6, an end view of the grinding-wheel.

Figure 7, an end view of the shaft D.

This invention consists in the employment of an endless chain, A, arranged on chain-wheels B and C, enclosed within the shaft D, said chain being connected with the grinding-wheel E by a connecting-device or link, F, and operated by a bevel-gear, G, which rotates with the shaft D, and gears into a stationary gear, H, secured to the end of the frame or to a stand, I, which may form the support for one end of the shaft D.

The bevel-gear G is secured to one end of a radial shaft, *a*, and the chain-wheel B is secured to the other end of the same shaft, and when the shaft D and the grinding-wheel E rotate, the bevel-gear G and chain-wheel B not only rotate with the shaft, but have an independent rotary motion with their radial axis *a*, which passes through one side of the shaft D, at a right angle therewith, as more clearly shown in the section in fig. 1, at the geared end of the shaft.

Rotary motion of the gear G and the chain-wheel B operates the endless chain A around the wheels B and C, and by means of the connecting-link F, the grinder-wheel is made to traverse from end to end of the shaft D, so long as the said shaft and the wheel E continue to rotate.

The connecting-link F is pivoted to the endless chain and to the hub of the grinding-wheel.

The hub of this grinding-wheel has a slot, *c*, formed in one side of it, sufficiently deep to allow the link F to spring back and accommodate itself to the movements of the chain, the end of the link which is pivoted to the latter passing around both chain-wheels, and longitudinally with the shaft D, on either part of the chain, to traverse the grinding-wheel the whole length of said shaft, and the link F, pivoted to the hub of the grinding-wheel in the slot *c*, serves the purpose of a spline or key, to prevent the wheel turning on the shaft, but allows an easy traverse of the wheel.

The shaft D is made in two parts, J and K, being divided longitudinally and near the centre, and between the two parts of this shaft is a space, *e*, extending from the geared end to the curved shoulder *x*, and opening through one side to allow the link F traversing-room the whole length of the shaft.

One part, J, of the shaft D is recessed, as shown in figs. 3 and 4, to receive the chain and the chain-wheels, and between the two latter is a central guide, L, to keep the two parts of the chain in place.

In fig. 7 is seen an end view of the shaft D, and at this end is a semicircular bridge, *n*, which is connected with the portion J of the shaft, and the portion K of the same is fitted within this bridge, which holds (at this end) the two parts together. The opposite ends of the two parts J and K are secured together by a screw, which passes through one part at *h* and screws into the other.

Power and motion are applied to rotate the shaft D and the grinding-wheel by a belt or band, M, running from a pulley, N, on the end of a lower rotating shaft into a pulley, P, or one end of the shaft D.

In grinding the teeth, *g*, of small card-cylinders, R, which are shown in section in fig. 1, such card-cylinders are placed in stands at each side of the shaft D and the grinding-wheel, and operated in the usual way, while the grinding-wheel rotates and traverses between them. The grinding-wheel is intended to traverse beyond the ends of the card-cylinders, so that no more grinding shall be performed on the card-teeth at one part or portion of either cylinder than any other part, but all parts shall be ground equally.

The stands I are made movable, and may be taken off from the frame-girts T, and placed and secured on the frame of the carding-machine, to grind the teeth of the main cylinder, which is always ground without removing it from the bearings in which it operates.

The employment of the endless chain A, the link F, and other connecting and operating parts renders this a very cheap, simple, and efficient card-grinder, easily operated, and not liable to get out of order.

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

The endless chain A and wheels B and C, and the radial shaft *a*, gears G and H, and the connecting-link F, combined with the shaft D and the grinding-wheel E, and all arranged to operate substantially as and for the purpose set forth.

BOZIL S. ROY.

Witnesses:
JOHN E. CRANE,
CHAS. E. SMITH.