

Sheet 1, 2 Sheets

J. Davis.  
Carding.

N<sup>o</sup> 39,381.

Patented Aug. 4, 1863.

Fig. 1

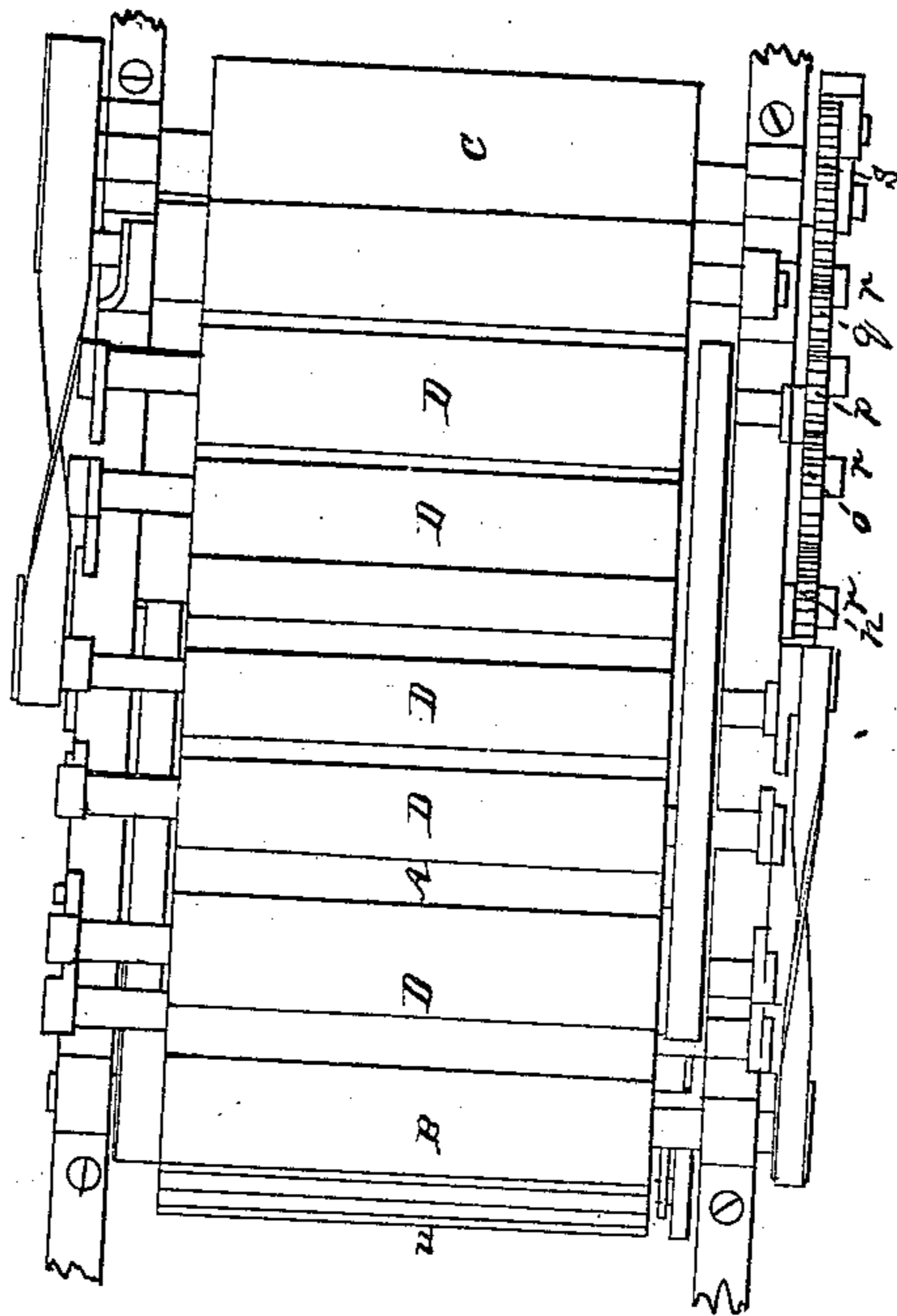
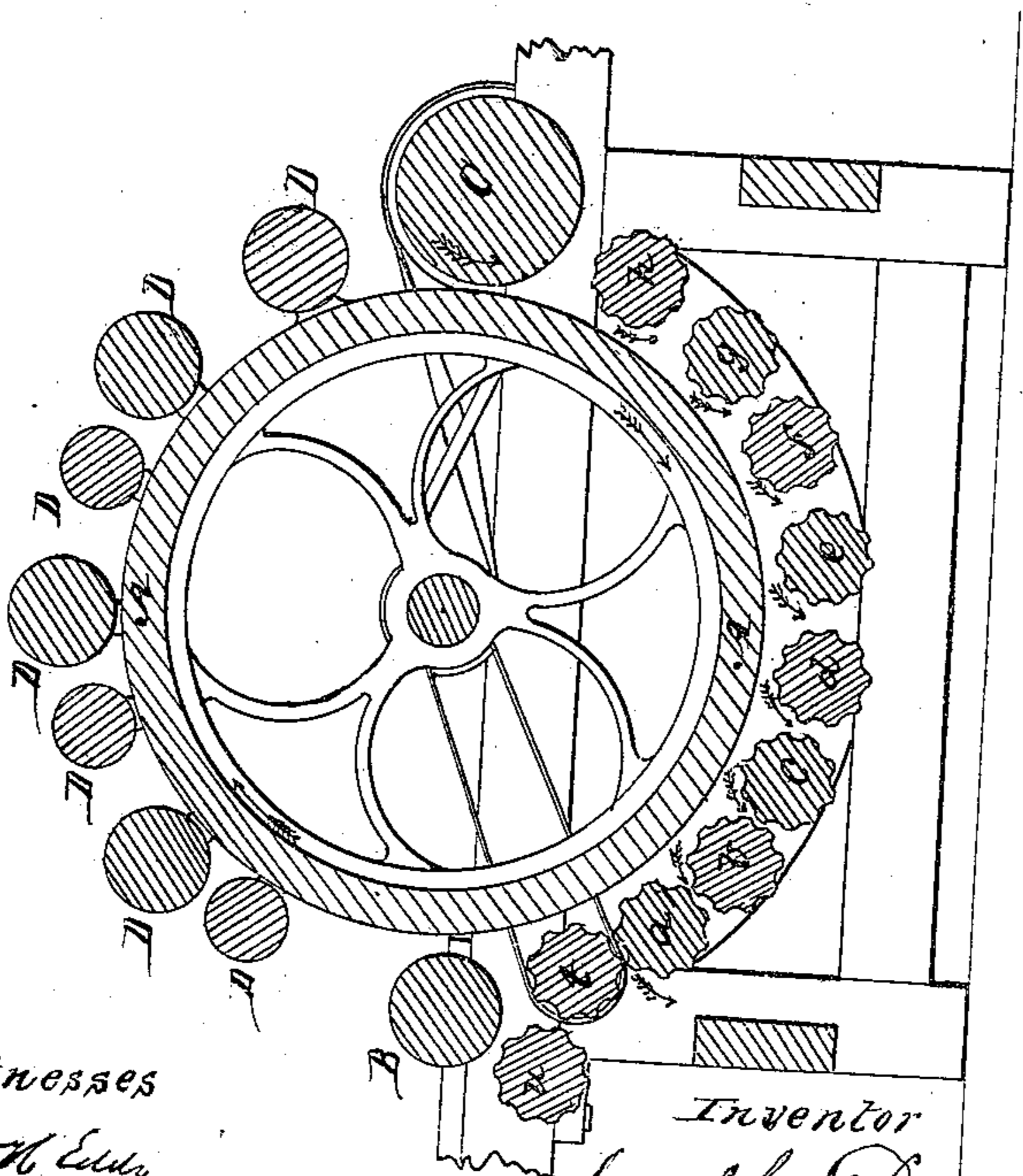


Fig. 3



Witnesses

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Inventor

Joseph Davis

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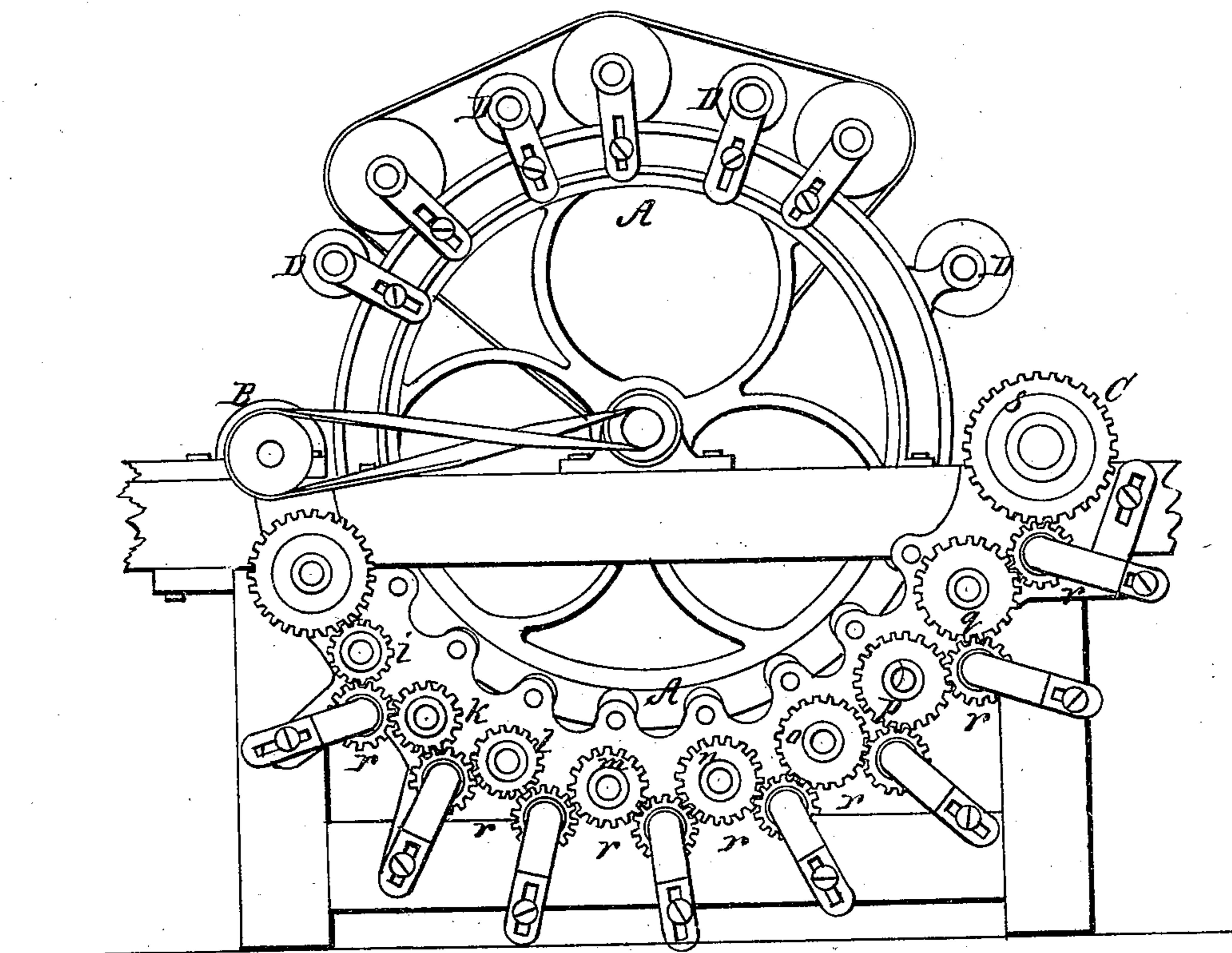
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Fig: 2.



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# UNITED STATES PATENT OFFICE.

JOSEPH DAVIS, OF WILTON, NEW HAMPSHIRE.

## IMPROVEMENT IN WOOL-CARDING-MACHINES.

Specification forming part of Letters Patent No. 39,381, dated August 4, 1863.

*To all whom it may concern:*

Be it known that I, JOSEPH DAVIS, a resident of Wilton, in the county of Hillsborough, and State of New Hampshire, have made an invention of certain new and useful Improvements in Machinery for Carding Wool or other Fibrous Material; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a top view Fig. 2 a side elevation, and Fig. 3 a longitudinal and vertical section, of a carding-engine provided or constructed with my invention, the nature of which is as follows—that is to say, it consists in a carding-engine so constructed that each of its waste-preventing rollers, which are arranged beneath the main card-cylinder, shall have while in operation a speed or velocity of revolution greater than that of the roller immediately in advance of it, the same being for the purpose of preventing the fibrous material or waste from gathering in a mass or roll between any two of such waste-preventing rollers, as it is likely to do when each of them has a like degree of speed. By causing each of such rollers to revolve a little faster than that next in advance of it the waste will be drawn by the former away from the latter and will be prevented from accumulating in a mass or roll between such rollers; and my invention further consists in a carding-engine as not only constructed so as to have waste-preventing rollers arranged underneath and so as to operate with the main card cylinder, but as having one or more such rollers arranged so as to operate in a similar manner with the “tumbler” or “licker-in.”

In the drawings, A is the main card-cylinder of the carding-engine, it having at its rear a card-cylinder, B, usually termed the “tumbler” or “licker-in.” It also has at its front a doffer-cylinder, C. A series of workers and strippers is disposed over the upper surface of the main card-cylinder, the same being as shown at D D D D, &c. Extending underneath the lower part or half of the main card-cylinder A is a series of rollers, *a b c d e f g h*, which are disposed parallel, and each is at a short distance from that either in advance or in rear of it. These rollers may have plain cylindrical surfaces, or their external surfaces may be fluted lengthwise. Rollers so made and arranged

underneath and combined with a main card-cylinder of a carding-engine, in manner as described, have constituted the subjects of certain patents heretofore granted to me, the object or purposes of these rollers being duly set forth in such patents. In other words, they serve not only to catch the waste fibers, which may be thrown off or fall from the main card-cylinder, but to return them thereto. It has been found, in practice, that when each of these waste-preventing rollers (as they may be termed) is revolved at the same velocity the waste is likely to accumulate between the rollers and there gather in a mass or roll so as to obstruct or impair the correct operation of the engine. In order to prevent this I gradually diminish the number of teeth in their gears.

In Fig. 2 the respective gears of the rollers *a, b, c, d, e, f, g*, and *h* are shown at *i k l m n o p q*, each being connected with another by an intermediate pinion, *r*. Another such pinion also intervenes between the last gear, *q*, and the gear *s* of the shaft of the doffer C. When the doffer is in revolution, its gear *s* will produce rotary motion of the whole series of gears *i k l m n o p q*, and, as a matter of course, their rollers *a b c d e f g h* will be similarly and simultaneously put in revolution. If the first gear, *i*, has eighteen teeth, the next gear, *k*, in advance of it, should have a greater number of teeth, such as nineteen, for instance. Each of the succeeding gears, *l, m, n, o, p*, and *q*, should also have a number of teeth greater than that of the gear which immediately precedes it—as, for instance, the gear *l* should have twenty teeth, the gear *m* twenty-one teeth, the gear *n* twenty-two teeth, the gear *o* twenty-three teeth, the gear *p* should have twenty-four teeth, and the gear *q* should have twenty-five teeth.

From the above it will be seen that the first roller, *a*, will revolve at a speed a little greater than that of the roller *b* in advance of it. By the term “advance,” as used by me in connection with the word “roller,” I intend to be understood as applying it to that roller of the two which is nearer to the front end of the engine.

The directions of the motions of the main card-cylinder and its waste-preventing rollers are indicated in Fig. 3 by arrows placed on them respectively.

Besides the series of rollers *a, b, c, d, e, f, g*, and *h* applied to the main card-cylinder A, the

engine is constructed with one or more others—viz., *t u*—which should be arranged under or near the card-cylinder or tumbler B, and so as to operate therewith. They perform with respect to it functions similar to those of the said rollers *a b c d e f g h* in their relation with the main card-cylinder.

In the drawings I have not shown the feeding-rollers, as their arrangement and purpose are to be substantially the same as those of other carding-engines.

I claim as my invention—

1. A carding-engine so constructed that each of its waste-preventing rollers, *a b c*, &c., which are arranged beneath the main card-cylinder, shall have, while in operation, a speed or velocity of revolution greater than that of that

roller of the series which may be immediately in advance of it, the same being for the purpose as hereinbefore specified.

2. A carding-engine as not only constructed so as to have waste-preventing rollers, *a b c*, &c., arranged underneath and so as to operate with the main card-cylinder A in manner and for the purpose above explained, but as having one or more other such rollers, *t u*, arranged so as to operate in a similar manner with the lick-in or tumbler B, the whole being substantially as specified.

JOSEPH DAVIS.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.