

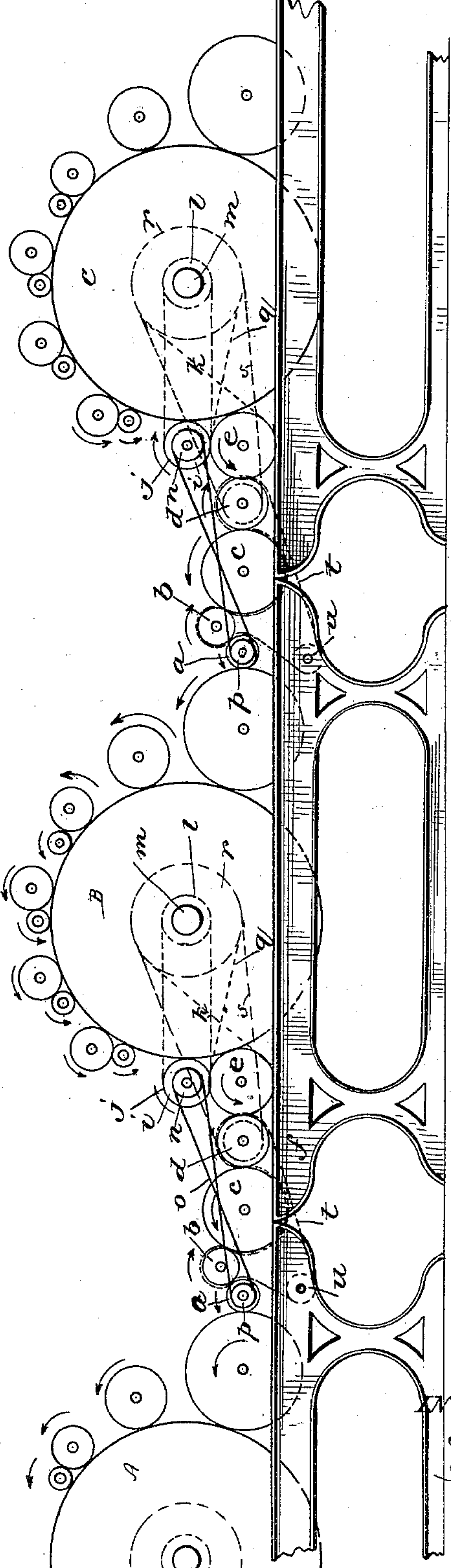
(No Model.)

2 Sheets—Sheet 1.

F. H. CARPENTER.
CARDING MACHINE.

No. 409,918.

Patented Aug. 27, 1889.



WITNESSES
F. L. Curran
E. A. Finckel

INVENTOR
Frederick H. Carpenter
by Wm. H. Finckel
his Attorney.

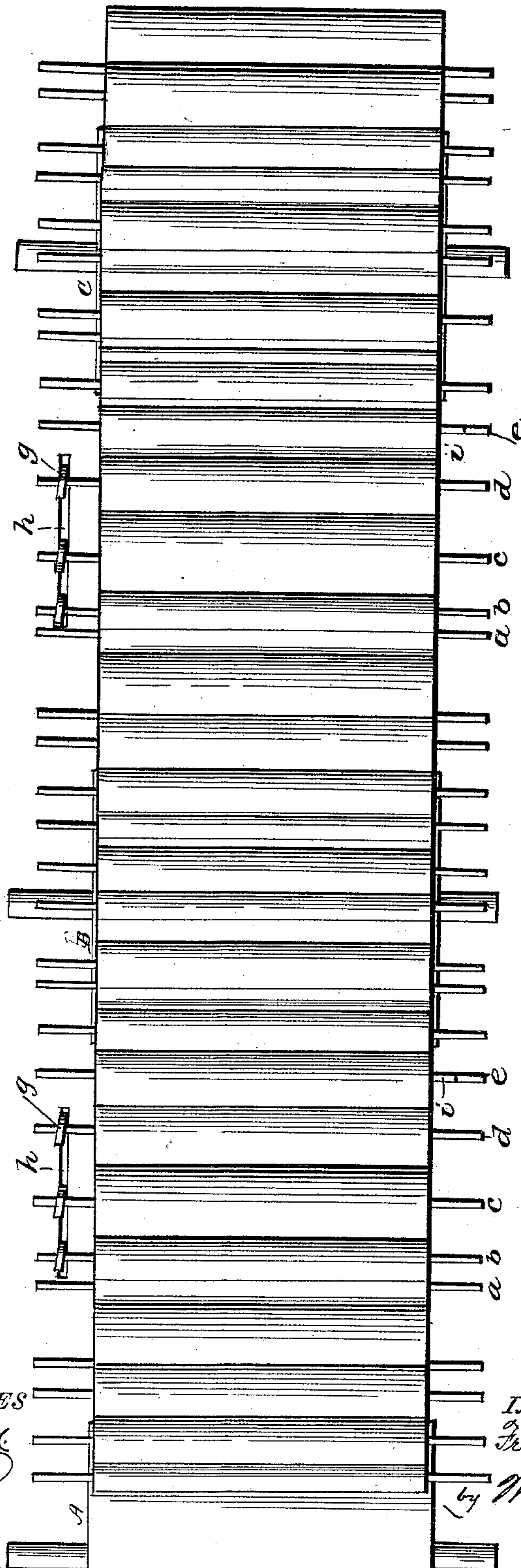
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UNITED STATES PATENT OFFICE.

FREDERICK H. CARPENTER, OF LOUISVILLE, OHIO.

CARDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 409,918, dated August 27, 1889.

Application filed May 27, 1889. Serial No. 312,233. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK H. CARPENTER, a citizen of the United States, residing at Louisville, in the county of Stark and State of Ohio, have invented a certain new and useful Improvement in Carding-Machines, of which the following is a full, clear, and exact description.

The object of this invention is to take the stock from the first breaker-doffer, thoroughly mix and card the same, transmit it evenly to the second breaker, and thence take it to the finishing-card without the employment of side drawing and feed rollers. In accomplishing this object I arrange the first and second breakers and the finishing-card in a train, and interpose between the first and second breakers and between the second breaker and finishing-card rollers provided with card-clothing to strip from the doffers of the first and second breakers, stretch, spread, and even the stock and feed it to the finishing-card.

The invention consists in the combination of first and second breakers and a finishing-card of usual construction, with stripping, stretching, spreading, evening, and feeding rollers interposed, substantially in the manner and for the purpose hereinafter particularly set forth, and finally specifically claimed.

In the accompanying drawings, in the two figures of which like parts are similarly designated, Figure 1 is a diagrammatic side elevation, and Fig. 2 is a plan view.

I have omitted from the drawings part of the first breaker and its appurtenances, together with the feeder, as they may be of usual construction.

A is the first breaker, composed of a cylinder and the usual workers—strippers, fancy and doffer—and B is the second breaker, similarly equipped, and C the finishing-card, also similarly equipped. Between the first and second breakers and between the second breaker and the finishing-card are arranged the series of rollers *a*, *b*, *c*, *d*, and *e*. These rollers are provided with card-clothing and have shafts arranged in suitable bearings mounted upon suitable frame-work *f*. The rollers *b*, *c*, *d* are provided with wave-cams *g* on their shafts,

as shown in Fig. 2, which take into grooves *h*, to impart a longitudinal vibratory motion to the said rollers.

The several rollers *a*, *b*, *c*, *d* are driven as follows: A stripper-roller *i* is provided with a rim-pulley *j*, from which a belt *k* passes to a pulley *l* on the shaft *m* of the carding-machine in advance. The roller *i* is provided also with a pulley *n*, from which a cross-belt extends to a pulley *p* on the roller *a*. The roller *e* is provided with a rim-pulley, from which a belt *q* extends to a pulley *r*, also fast on the shaft *m*. A belt *s* passes about a pulley upon the main shaft, and thence to a pulley on the shaft on roller *d*, to drive said roller *d*, and a belt *t* passes about pulleys upon the shafts of rollers *b*, *c*, and *d*, and a pulley *u* to drive said rollers *b* and *c* from roller *d*. The arrows upon the several rollers indicate their direction of rotation. Ordinarily the longitudinal vibration of the rollers *b*, *c*, *d* will not be necessary; but I prefer so to operate them when working shoddy or short wool. The stock is fed to the first breaker in the usual manner, and operated upon by that carding-engine, as usual, but upon reaching its doffer it is taken by the stripper and stretcher *a* and delivered to and passed between the rollers *b*, *c*, *d*, which spread and even it, and is by the roller *d* delivered to the roller *e*, which further stretches it, and in the first instance feeds it to the second breaker-cylinder, and in the second instance feeds it to the finishing-card.

In actual working of a train of cards arranged in accordance with my invention I have found that the stretching and spreading and evening of the stock are effected without breaking of the fiber to anything like the extent of the usual procedure by means of detached first and second breakers with side drawing and feed rolls. The carding of the stock is far better than by the old means, the roping is smoother, and the thread made from such roping is very much stronger.

There is considerable economy in the erection of a plant in accordance with my invention, both in the matter of first cost and in the matter of floor-space.

What I claim is—

1. In a train of carding-engines, first and

second breaker-cylinders equipped with the usual appurtenances, a stripping and stretching roller to take the stock from the doffer of the first breaker, spreading and evening rollers arranged next to the stripper and stretcher, and another stretching-roller arranged next to the second breaker-cylinder, and which also serves to feed the stock to the said second breaker-cylinder, combined with a finishing-card and similar stripping and stretching and spreading and evening and stretching and feeding rollers interposed in the order named between it and the second breaker, substantially as described.

2. In a train of carding-engines, first and second breaker-cylinders equipped with the usual appurtenances, a stripping and stretching roller to take the stock from the doffer of the

first breaker, spreading and evening rollers, and means to impart a longitudinal vibration thereto, arranged next to the stripper and stretcher, and another stretching-roller arranged next to the second breaker-cylinder, and which also serves to feed the stock to the said second breaker-cylinder, combined with a finishing-card and similar stripping and stretching and spreading and evening and stretching and feeding rollers interposed in the order named between it and the second breaker, substantially as described.

In testimony whereof I have hereunto set my hand this 24th day of May, A. D. 1889.

FREDERICK H. CARPENTER.

Witnesses:

A. M. MCCARTY,

F. E. FAVRET.