J. B. MACKIE.
Spinning-Machine.

No. 203,632. Patented May 14, 1878.

Fig. 1.

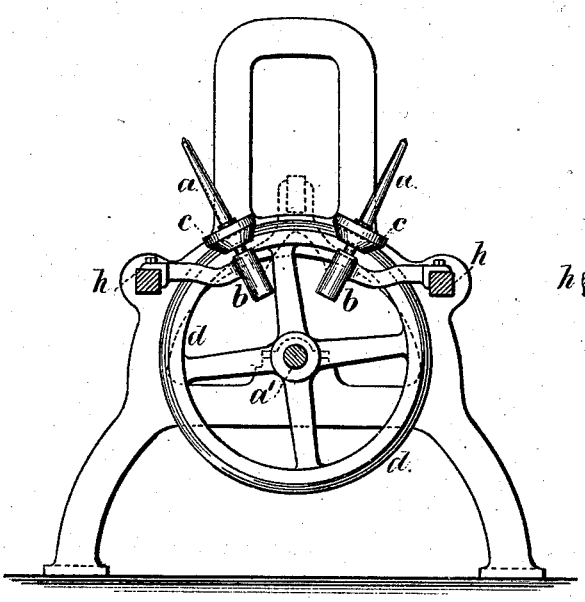
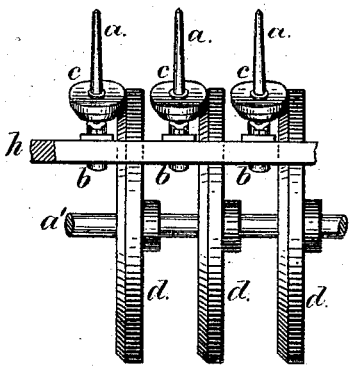


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES B. MACKIE, OF NEW YORK, N. Y.

IMPROVEMENT IN SPINNING-MACHINES.

Specification forming part of Letters Patent No. **203,632**, dated May 14, 1878; application filed November 12, 1877.

To all whom it may concern:

Be it known that I, JAMES B. MACKIE, of the city and State of New York, have invented an Improvement in Spinning-Machines, of which the following is a specification:

In spinning-machinery it is usual to have two ranges of bobbins, one at each side of the machine, driven by separate belts, with the drawing or winding rollers above. These machines occupy considerable space, and the clothes of the attendant are liable to get caught in the belts or pulleys.

The object of my invention is to render the spinning-machine more compact and easily managed by dispensing with one set of driving-pulleys and driving two ranges of spindles by one range of shafting and pulleys. This dispenses with the cost, weight, and friction of a second shaft and range of driving-wheels; hence the construction and maintainance are less expensive than in other machines for this purpose, as considerable friction is avoided.

In the drawing, Figure 1 is a vertical section representing the spindles and their driving mechanism; and Fig. 2 is a side view, showing a portion of the range of spindles.

The spindles *a* rest with their lower ends within the bearings *b*, and each spindle is provided with a friction-pinion, *c*, of a conical or other suitable shape, driven by contact with the edge or rim of the wheel *d*, the parts being of usual character, and reference is made to Letters Patent No. 179,496, in which a similar manner of driving a single spindle is illustrated.

I arrange the shaft *a'* of the driving-wheels *d* in the center of the machine transversely, or nearly so, and run said shaft longitudinally of the machine, and place upon the same the friction-wheels *d* at suitable distances apart to correspond with the distances that the spindles are apart in each row. Instead of having a shaft, *a'*, and row of wheels *d* for each row of spindles, I make use of the shaft *a'* and the one row of wheels *d* upon the shaft *a'*, and I introduce two rows of spindles at an inclination to each other, and radially, or nearly so, to the driving-wheels, as shown in Fig. 1, so that one row is at the proper distance from the other, and both are above the driving-wheels, so that the threads can be led off to the drawing or winding rollers.

I remark that in the winding of silk the threads or fibers are usually drawn off the bobbins and wound together on spools as they are twisted by the revolution of the bobbins, and in drawing and spinning machinery the threads will be spun and wound upon the bobbins as they are delivered by the drawing-rollers.

The bearings *b* for the spindle are connected by arms to separate bars *h*, one at each side of the shaft *a'*, forming part of the frame of the machine; or such bearings may be supported by a central bar, as shown by dotted lines in Fig. 1. The frictional pinion of each spindle is kept in contact with its wheel by a yielding presser composed of the spring-arm carrying the bearing, as in aforesaid patent, or in any other desired manner.

By this improvement the spinning-machine is simplified. One shaft and its wheels drive two ranges of spindles. The spindles are adjacent to each other; but the bobbins are applied or removed at the respective sides of the machine, and there are not any belts to become broken or inefficient, and great uniformity of twist is obtained.

I am aware that spindles have been driven by friction-belts, and that frictional gearing has been employed in driving spindles. In some instances a horizontal wheel has been used to drive two vertical spindles. By my arrangement the gearing is simplified and the spinning-machine rendered much more compact than the machines before made.

I claim as my invention—

In a spinning-machine, the longitudinal shaft *a'*, in the center, or nearly so, transversly of the machine, and provided with a beveled friction-wheel, *d*, for each pair of spindles, in combination with spindles and their beveled friction-pinions, arranged in the manner shown, so that there are two spindles to each beveled frictional driving-wheel, and said spindles stand radially above the same, as and for the purposes set forth.

Signed by me this 9th day of November, A. D. 1877.

JAMES B. MACKIE.

Witnesses:
GEO. T. PINCKNEY,
CHAS. H. SMITH.