B. F. HAIGH.
Carding-Machines.

No. 207,272 Patented Aug. 20, 1878.

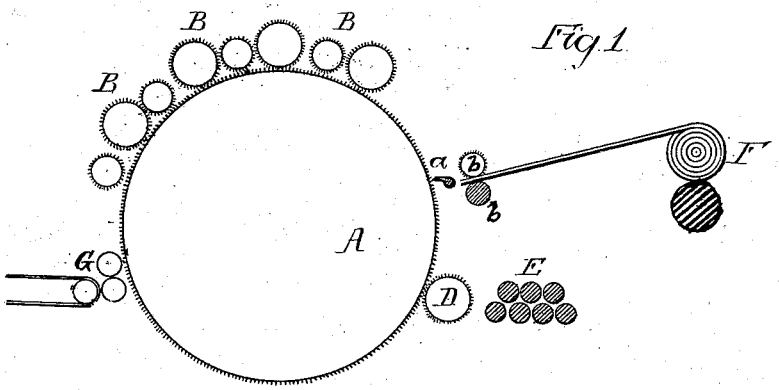

Fig. 1

Fig. 2.

Witnesses
Richard L. Gardiner
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UNITED STATES PATENT OFFICE.

BENJAMIN F. HAIGH, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THOMAS DOLAN AND R. WILLIAMS, JR., OF SAME PLACE.

IMPROVEMENT IN CARDING-MACHINES.

Specification forming part of Letters Patent No. **207,272**, dated August 20, 1878; application filed July 16, 1877.

To all whom it may concern:

Be it known that I, BENJAMIN F. HAIGH, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Carding-Machines, of which the following is a specification:

The object of my invention is to provide a carding-machine with an attachment by means of which slivers with spots at regular intervals may be produced, these spotted slivers being subsequently converted into spotted yarn.

In the accompanying drawing, Figure 1 is a diagram illustrating sufficient of a condenser carding-engine to show my improved spotting attachment, and Fig. 2 a view of a piece of yarn produced according to my invention.

A is the main cylinder of a condenser carding-engine; B, the smaller carding-cylinders or "workers;" G, the feed-rolls by which the strands or roping to form the body of the yarn are delivered to the said main cylinder; D, one of the condenser-doffers, and E one set of rub-rolls, all arranged and operating in the usual manner.

Above the doffer D I arrange a rotating "licker-in," *a*, provided with one or more longitudinally-toothed blades or rows of teeth, immediately adjacent to which are two feed-rolls, *b b*, the uppermost of the latter being, by preference, provided with card-teeth, as shown. F is a roll or spool, round which are wound a suitable number of spotting slivers or strands, this roll resting on an ordinary spool-drum, by which said spotting-slivers are delivered from the spool. The feed-rolls *b b* receive from the roll F the series of slivers, which are of the proper color for the desired spots, and the said feed-rolls are rotated, either constantly or intermittently, from some moving part of the machine, so as to feed the ends of the spotting-slivers forward into the path of the revolving licker-in *a*, by which bunches or tufts are cut or torn from the ends of said slivers, and are carried round by the teeth and laid upon the lap of the main card-cylinder A. The lap with its spots is carried round on the main cylinder until it reaches the doffers, which remove the said lap in the form of spotted slivers. These slivers thence pass through the rub-rolls and are wound onto spools, which are afterward transferred to the spinning machine or mule, where they are converted into spotted yarn.

As the movement of the revolving licker-in *a* is regular, it follows that the bunches or tufts of spotting-slivers must be laid on the lap at regular intervals, and the yarn into which the slivers are converted must also have spots at regular intervals, the length of the spots being governed by the speed of the feed-rolls *b b* in relation to that of the licker-in, and the distance between the spots by the speed of said licker-in in relation to that of the main cylinder A.

In yarn produced from slivers made by the above-described machine each spot is prominent and well defined, as shown in Fig. 2, owing to the fact that the slivers are fed directly to the revolving licker-in *a*, and the tufts severed by the latter are laid directly on the lap on the main cylinder above the doffers, so that the spots are not subjected to the carding-action of the card-rolls B.

I am aware that spotted yarns have heretofore been produced by depositing colored tufts on the lap in a carding-machine. This, therefore, I do not claim, broadly; but

I claim as my invention—

1. The combination, in a carding-machine, of the main cylinder A with the rolls *b b* for feeding the spotting-slivers, and a rotating licker-in, *a*, provided with one or more rows of teeth, by which tufts are torn from said slivers and laid directly on the lap of the main cylinder, substantially as set forth.

2. The combination of the main cylinder of a carding-engine with a revolving licker-in, *a*, provided with one or more rows of teeth, feed-rolls *b b*, and a drum adapted to deliver the spotting-slivers from a roll, F, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BENJAMIN F. HAIGH.

Witnesses:

WALTER S. WRIGHT,
HARRY SMITH.