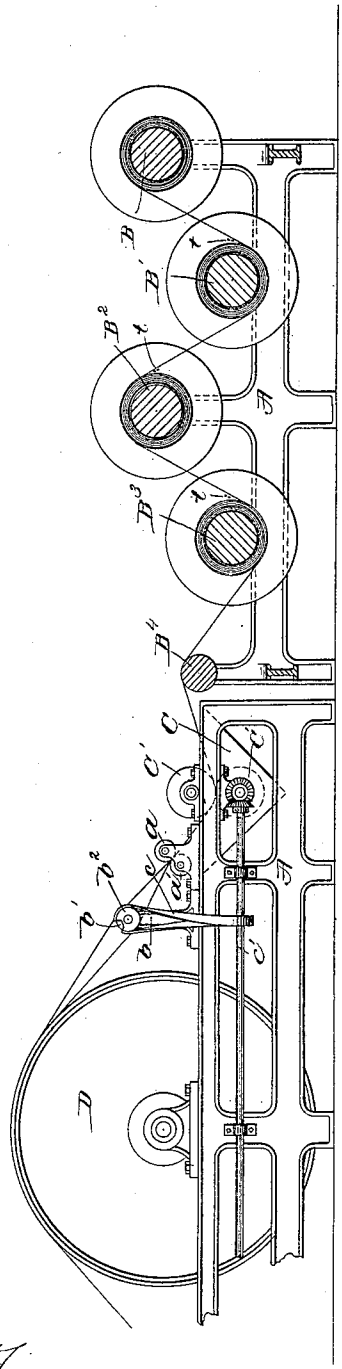
(No Model.)

E. W. BLAKE.

SIZING MACHINE.

No. 346,636. Patented Aug. 3, 1886.



Witnesses
Fred L. Emery
John F. C. Frankfurt

Inventor
Eben W. Blake.
by Emery & Gregory Attys.

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UNITED STATES PATENT OFFICE.

EBEN W. BLAKE, OF WALTHAM, ASSIGNOR OF ONE-HALF TO GEORGE DRAPER & SONS, OF HOPEDALE, MASSACHUSETTS.

SIZING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 346,636, dated August 3, 1886.

Application filed July 27, 1885. Serial No. 172,744. (No model.)

To all whom it may concern:

Be it known that I, EBEN W. BLAKE, of Waltham, county of Middlesex, and State of Massachusetts, have invented an Improvement in Sizing-Machines, of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawing representing like parts.

This invention has for its object to improve the construction of sizing-machines, whereby the breaking of yarns may be substantially prevented, and the yarn be left in smoother and better condition.

In accordance with this invention, instead of separating the warps between the size-box and the drying apparatus by a rod, I have provided the machine with a roller which is positively rotated, the said roller in its rotation acting to break or dissipate the film of size adhering to contiguous yarns before the latter meet the drying-drum, the rotation of the roller preventing the accumulation of sizing at any one part thereof, and preventing the adhesion of the yarns to the roller, as would be the case if the roller were stationary and the machine should be stopped with the wet sized yarn in contact with it. Rotation of the said roll slowly, the surface-speed of the roller being less than the speed of the yarn, also prevents a yarn, if broken, from being wound upon it.

My invention consists, essentially, in the combination, with a size-box and a drying apparatus or drum in a yarn-drying machine, of a rotating roll to divide the yarns between the said box and drying apparatus, as will be described.

The drawing, in elevation and partial section, shows a sufficient portion of a sizing-machine to enable my invention to be understood. The frame-work A, the warp or yarn beams B B′ B^2 B^3, the guide-roll B^4, the size-box C, the size-rolls C′ C′, (shown partially by dotted lines,) and the drying apparatus D, herein shown as a drum, are and may be all as usual. The size-box at its delivery side is provided, as usual, with two squeezing-rolls, *a a′*, and between these rolls and the drying apparatus I have provided uprights *b*—one at each side of the machine—which serve as bearings for the separating-roll *b′*, having at one end a pulley, over which is passed, as herein shown, a quarter-turn belt, *c*, which is driven from the shaft *c′*, arranged at the outside of the frame, such shaft being common in sizing-machines to rotate the undermost of the size-rolls, the said roll *b′* having a surface-speed slower than the speed of the warp-threads, the threads of the sheet of warp passing alternately above and below the said roll, being separated one from the other, so as to destroy any film of size between adjacent threads before the threads arrive at the drying apparatus. To enable the threads to be separated beyond the rolls *a a′*, two tapes, *t t*, (shown by dots and dashes,) are laid upon the threads of one beam as they come in contact with the threads of another beam. When the combined sheet of warp is to be separated centrally, the said sheet is fed between the rolls *a a′* until the proper central tapes, *t t*, pass the said rolls *a a′*, and then the tapes, caught at both ends, are lifted to divide the sheet, and the roller *b′* is then pushed through the opening so made between the two halves of the sheet, the journals of the roll *b′* fitting the bearing portions of the uprights *b* loosely. In this invention it will be noticed that the roll *b′* is rotated slowly, and this is very essential to its practical operation, for the size dries rapidly, and if the roll did not rotate the size, accumulating thereon at the points of contact of the sheet and roll would clog or check the free travel of, and thus break, the threads; but by rotating the roll slowly the accumulating or bunching of the size is avoided.

Instead of employing the drum as the drying apparatus, I may employ a series of steam-pipes in a case, the yarn being passed between the pipes, as in United States Patent No. 150,058.

I am aware that the warp has been divided between the size-box and the drying apparatus by means of a lease-rod which had no positive motion imparted to it.

I claim—

The size-box and squeezing-rolls and the drying apparatus of a sizing-machine, combined with a warp-separating roll and means to rotate it, to separate the warp after it is sized and before it is dried, substantially as described.

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

EBEN W. BLAKE.

Witnesses:

C. F. STONE,

H. P. BUNCHER.