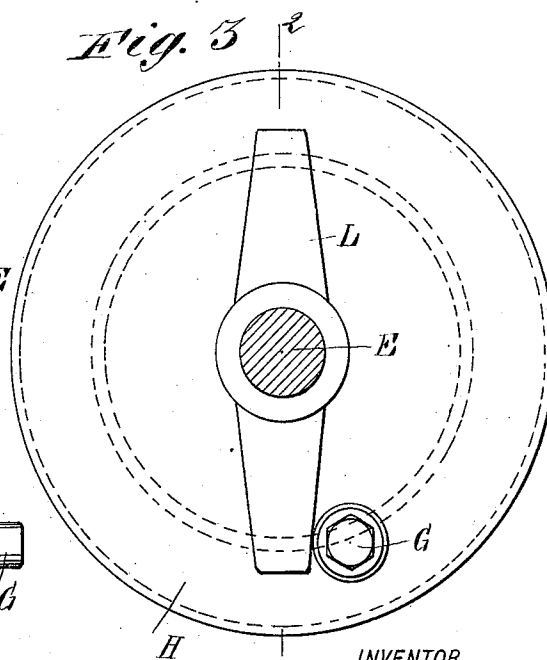
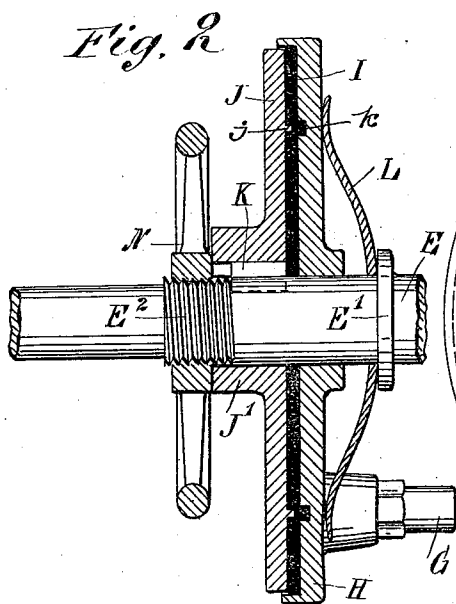
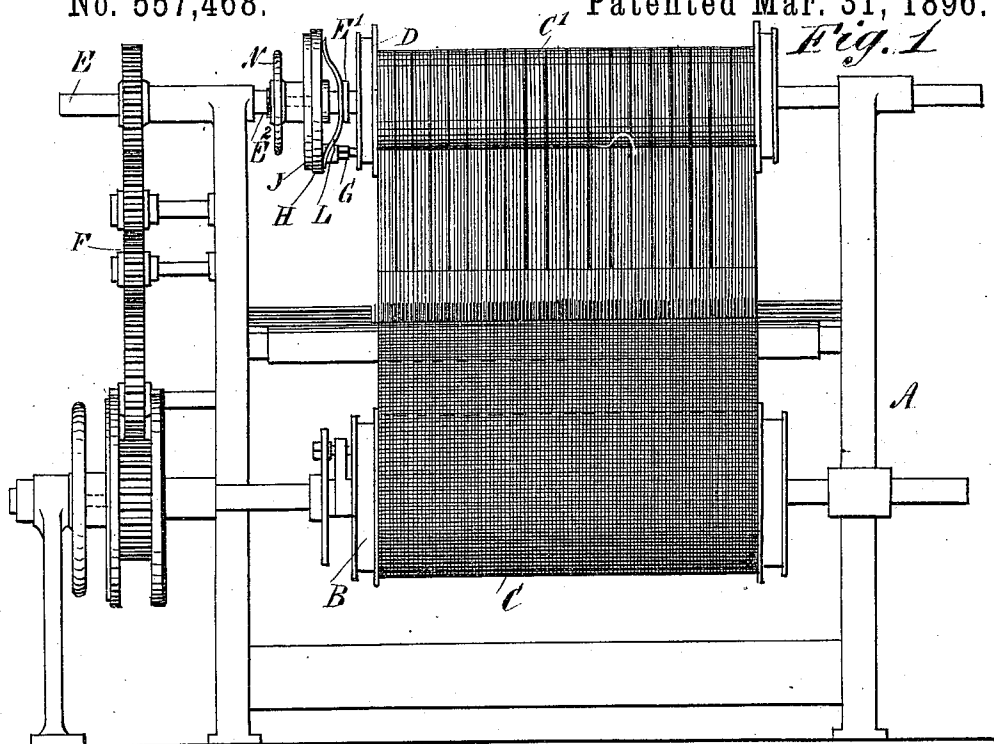


A. WOODMAN.
WARP SIZING MACHINE.

Patented Mar. 31, 1896.



C. Verneux

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ATTORNEYS:

UNITED STATES PATENT OFFICE.

ALVIN WOODMAN, OF LISBON, CONNECTICUT, ASSIGNOR OF ONE-HALF TO
FREDERICK L. LEAVITT, OF GRISWOLD, CONNECTICUT.

WARP-SIZING MACHINE.

SPECIFICATION forming part of Letters Patent No. 557,468, dated March 31, 1896.

Application filed August 14, 1895. Serial No. 559,277. (No model.)

To all whom it may concern:

Be it known that I, ALVIN WOODMAN, of Lisbon, in the county of New London and State of Connecticut, have invented certain
5 new and useful Improvements in Warp-Sizing Machines, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved warp-sizing machine or
10 slasher which is simple and durable in construction, very effective in operation, and arranged to wind up the ordinary threads and any desired number of ends on two beams simultaneously and without danger of break-
15 ing the ends by undue strain.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

20 Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is an end elevation of the improve-
25 ment as applied. Fig. 2 is an enlarged cross-section of the improvement on the line 2 2 of Fig. 3, and Fig. 3 is a face view of the same.

In warp-sizing machines as heretofore constructed the threads were sized and wound
30 only on one beam. Now for certain goods it is necessary that some of the yarns, especially fancy threads for a particular design, be wound on a separate beam, as these fancy threads are drawn into an extra harness sep-
35 arate from the one carrying the ordinary threads. These fancy threads in weaving are not taken up at the same rate of speed as the ordinary threads, owing to their increased or diminished size. Hence it is necessary that
40 the two sets of threads—that is, the ordinary and the fancy or separated ones—be unwound from separate beams.

Heretofore the sets of threads were passed
45 separately through the same slasher or two separate slashers and each set wound on different beams. By this arrangement several operations were necessary, and to avoid this and be enabled, after sizing all the threads for a single weave together—that is, in con-
50 tact with one another on the same slasher—and after passing the threads over the drying-

cylinders and separating the same at the measuring-roll, to finally wind up the threads on separate beams, is the object of the inven-
tion presently to be described in detail. 55

The warp-sizing machine A is provided with the usual beam B for the regular thread or
yarn C, and with an auxiliary or upper beam D for winding up the separated threads or
60 yarns C'. The warping-beam B is driven in the usual manner and the warping-beam D is mounted to rotate loosely on a shaft E, connected by a gearing F with a gear-wheel of the gearing for the lower beam B. The beam
65 D is engaged at one end by a stud G projecting from the inner face of a disk H, mounted to rotate loosely on the shaft E, and carrying at its front face a disk or ring I, of felt, leather, or like material, engaged by a second disk J,
70 held to slide on the shaft E and rotated with the same by the action of a key K, secured on the shaft E and engaging a longitudinal slot or keyway in the hub J' of the disk J. A spring
75 L, held on the shaft E and resting against a collar E' on the said shaft E, presses with its free ends on the rear face of the disk H, as is plainly illustrated in the drawings.

On the front end of the hub J' of the disk J abuts the hub of a hand-wheel N, screwing
80 on the threaded portion E² of the shaft E, so that the operator by screwing up the said hand-wheel N can increase the friction between the disks J and H or decrease the same by unscrewing the hand-wheel. The disk J is provided with a concentric rib j, which
85 operates with the groove k on the disk K to effect a more thorough frictional connection between said parts.

Now it will be seen that by the arrange-
90 ment described the rotary motion of the shaft E is transmitted by the disk J to the disks I and H, and the latter by the stud G rotates the beam B to wind up the yarn C'. Now as the frictional connection between the
95 disks J and H can be regulated by the operator manipulating the hand-wheel N it is possible to rotate the beam D under the tension necessary for properly winding up the thread C' without danger of straining or otherwise
100 injuring the said threads.

Normally the shaft E is run at the same speed as the shaft of the beam B; but it is

evident that the speed of the warping-beam can be decreased by sufficiently unscrewing the hand-wheel N to decrease the frictional contact between the disks J and K at the felt

5 I. By the arrangement described any number of threads C' may be wound on the beam D without danger of subjecting the yarn to a strain that may break it, and the beam can be driven to wind up the threads at any desired tension.

10 Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

15 1. In a warp-sizing machine, the combination with a frame, of a main beam, a shaft revolubly mounted in the frame, means for driving the shaft, a friction-disk loose on the shaft, a second disk movable longitudinally on the shaft to engage the loose disk, and an

auxiliary beam loosely mounted on the shaft 20 and provided with means for connecting it with the loose disk, substantially as described.

2. In a warp-sizing machine, the combination with a frame, of a main beam, a shaft 25 loosely mounted in the frame, means for driving the shaft from the main beam, an auxiliary beam loose on the shaft, a disk loose on the shaft and having a stud engaging the auxiliary beam, a spring carried by the shaft and pressing the disk away from the auxiliary 30 beam, and a second disk movable longitudinally on the shaft to engage and disengage the loose disk, substantially as described.

ALVIN WOODMAN.

Witnesses:

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