(No Model.)

A. P. DICKINSON.

WARP SIZING MACHINE.

No. 320,466. Patented June 23, 1885.

FIG. 1.

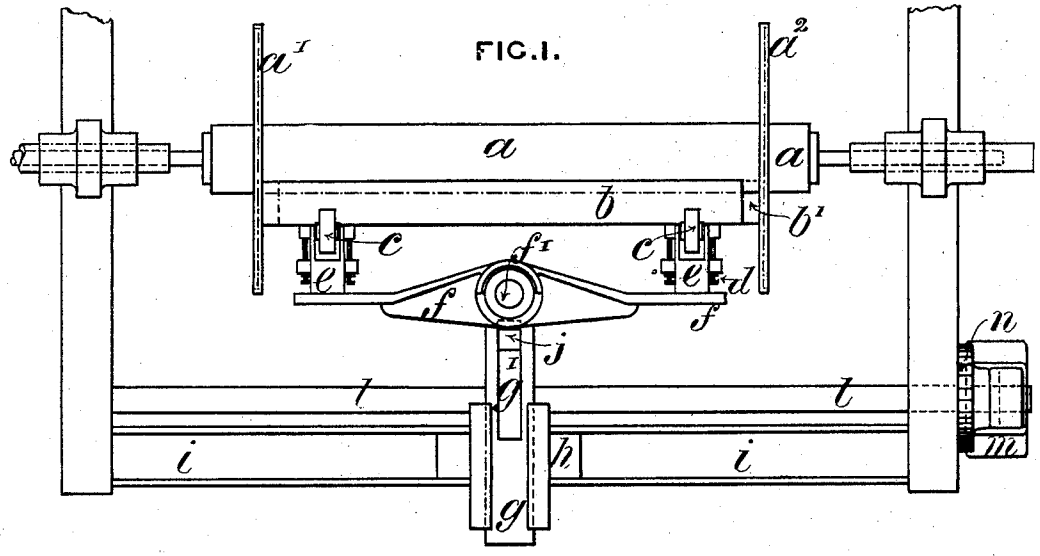


FIG. 2.

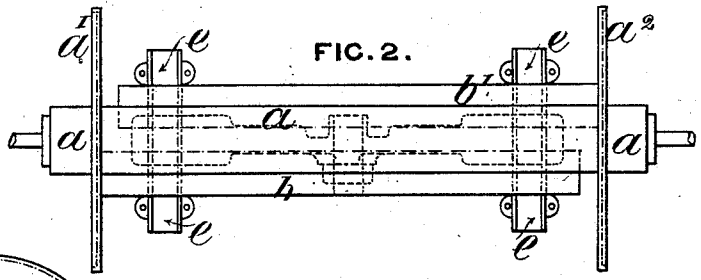


FIG. 4.

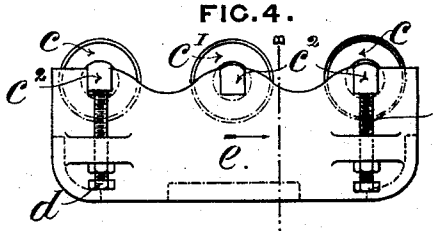
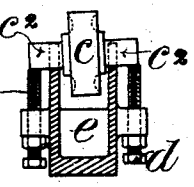


FIG. 5.



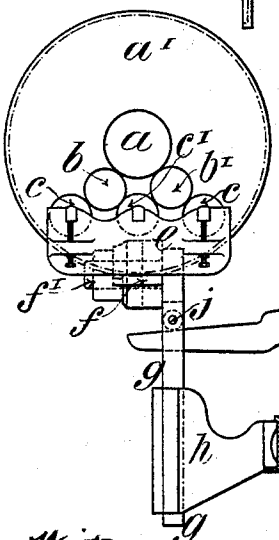
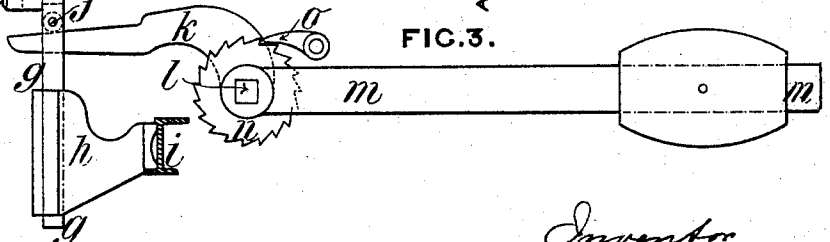


FIG. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

ASPDEN P. DICKINSON, OF BLACKBURN, COUNTY OF LANCASTER, ENGLAND.

WARP-SIZING MACHINE.

SPECIFICATION forming part of Letters Patent No. 320,466, dated June 23, 1885.

Application filed November 23, 1883. (No model.) Patented in England November 19, 1881, No. 5,075.

To all whom it may concern:

Be it known that I, ASPDEN PICKUP DICKINSON, machine-maker, residing at Blackburn, in the county of Lancaster, England, have invented a certain new and useful Improvement in Warp-Sizing Machines, of which the following is a specification.

This invention relates to devices for pressing or leveling the yarn while it is winding on the yarn-beam of a sizing-machine, and the object of said invention is to level the yarn on the beam from one flange to the other.

In the accompanying drawings, Figure 1 represents a front elevation of part of a sizing-machine having my improvement applied thereto. Fig. 2 represents a plan view of a portion of the same. Fig. 3 represents an end view of the same; and Figs. 4 and 5 represent enlarged views, the latter partly a section through the line A B, Fig. 4.

Similar letters refer to similar parts throughout the several views.

a is the yarn-beam upon which the warp is wound after passing through the sizing trough or machine. *a' a²* are the flanges of the yarn-beam, and *b b'* are two presser-rollers for leveling the warp as it is wound on the beam, each made of one piece, shorter than the distance between the flanges of the yarn-beam. Each of these presser-rollers *b b'* is mounted on adjustable anti-friction rollers *c* and similar rollers, *c'*, which are not adjustable. The bearings of the anti-friction rollers *c* may be moved by set-screws *d* nearer to or farther from the axis of the yarn-beam. One end of the presser-roller *b* runs in contact with the flange *a'* of the yarn-beam, and the other end of the presser-roller *b'* runs in contact with the flange *a²*. The anti-friction rollers *c* run loosely upon studs *c²*, which are guided in slots in the brackets *e*, and have their ends square, by preference, where they rest or bear on the adjusting-screws *d*. The bearings of the outer anti-friction rollers *c*, which support the presser-rollers *b b'*, are adjustable vertically by means of the screws *d*. As there is a set of anti-friction rollers, *c*, and adjusting-screws *d* under each end of each presser-roll *b* and *b'*, either of these rolls may be tilted into an inclining position by screwing up one end and letting down the other. In this way the end of presser-roll *b* which is in proximity to the flange *a'* is lowered and tilted into contact with the said flange. In like manner the opposite end of presser-roll *b'* is brought into contact with flange *a²*. The friction of these presser-rolls against the yarn on the yarn-beam causes said presser-rolls *b* and *b'* to turn. As either one or both of these presser-rollers may be tilted, they have a considerable range of adjustability to the width of the beam.

The brackets *e* are secured to the ends of the frame or cross-rail *f* near the ends of the latter, which is pivoted by a stud, *f'*, to a vertical bar, *g*, sliding in the bracket *h*, secured to the frame *i* of the machine.

In a slot, *g'*, in the bar *g* is a die or bowl, *j*, which rests upon the lever *k*, secured to the shaft *l*, mounted in the frame of the machine. Also secured to the shaft *l* are a weighted lever, *m*, and a ratchet-wheel, *n*, the latter acted on by a pawl or catch, *o*, pivoted to any convenient part of the machine-frame. The weighted lever *m* tends to raise the frame *f*, which carries the presser-rollers *b b'*, and thus gives the desired pressure to the yarn on the beam *a*. As the beam fills with yarn, the presser-rollers *b b'* and the frame *f* recede from the beam, and when the latter is full the attendant raises the end of the lever *m* and moves the presser-rollers and frame *f* away from the beam, and the pawl or catch *o*, engaging with the teeth of the wheel *n*, supports the weighted lever *m* until an empty beam has been put into the machine, when the lever *m* may be slightly raised, the pawl *o* disengaged from the ratchet-wheel *n*, and the weighted lever *m* allowed to fall, thus raising the presser-rollers into contact with the yarn-beam.

The mode of operation is as follows: After tying the warp to the yarn-beam *a*, and releasing the pawl *o* from the ratchet-wheel *n*, the weighted lever *m* is allowed to fall and partly turn the shaft *l*, thereby raising the lever *k*, which raises the sliding bar *g*, brackets *e*, and anti-friction rollers *c* and *c'*, and thus brings the presser-rollers *b b'* into close contact with the yarn-beam *a*. The yarn is laid or leveled by these means as it is wound upon the beam *a* throughout the whole width between the

flanges a' and a^2, even if the widths of the different yarn-beams vary, as the rollers b and b', being tilted by the adjustable anti-friction rollers c, as previously described, always work against the flanges a' and a^2, respectively, and are effective in leveling the yarn, even if the beam-flanges do not run true. It is obvious that this presser motion may be applied to other machines.

Having stated the nature of my invention, and fully described the manner of performing the same, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The yarn-beam a, provided with flanges a' a^2 near its ends, in combination with the presser-roll b in contact with flange a', the presser-roll b' in contact with flange a^2, and devices for supporting said presser-rolls in contact with the yarn wound on said beam and tilting said presser-rolls, substantially as set forth.

2. The yarn-beam and the presser-rollers b b', in combination with the anti-friction rollers c c', which support said presser-rollers, the supports for said anti-friction rollers c', and the devices for supporting and adjusting said rollers c independently of one another, substantially as set forth.

The foregoing specification of my improvement in slashers or sizing-machines signed by me this 9th day of November, 1883.

ASPDEN P. DICKINSON.

Witnesses:
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