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J. F. AMES.

MACHINE FOR SPLITTING CLOTH.

APPLICATION FILED FEB. 17, 1905.

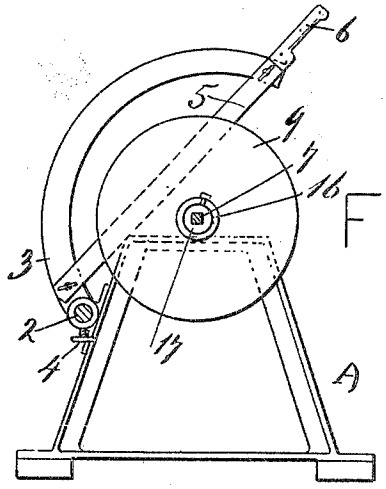


FIG. 1

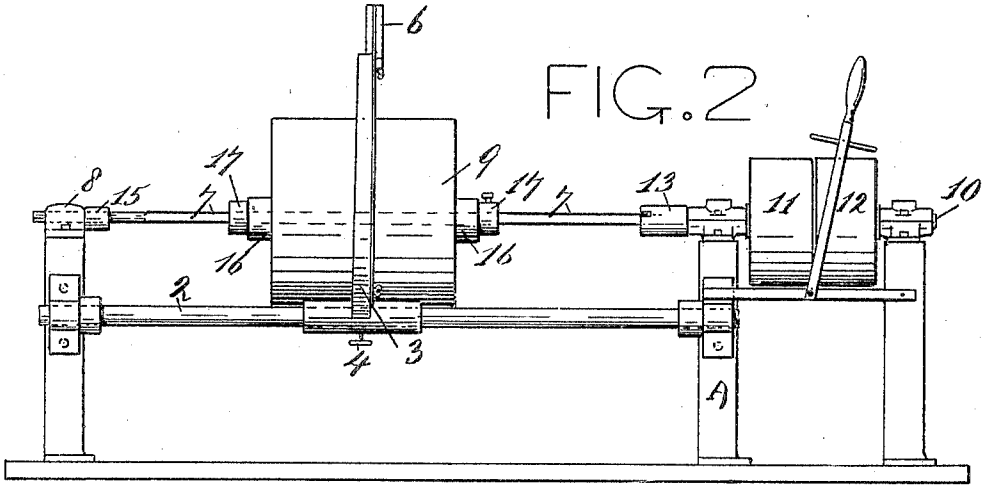


FIG. 2

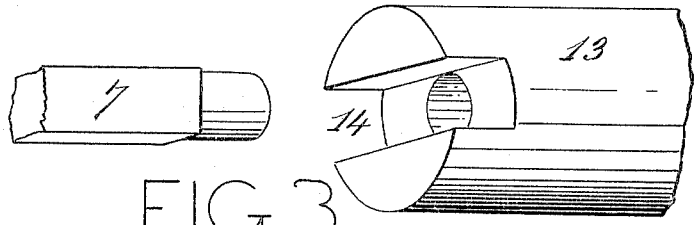


FIG. 3

Witnesses

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MACHINE FOR SPLITTING CLOTH.

No. 802,545. Specification of Letters Patent. Patented Oct. 24, 1905.

Application filed February 17, 1905. Serial No. 246,083.

To all whom it may concern:

Be it known that I, JOHN F. AMES, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented new and useful Improvements in Machines for Splitting Cloth, of which the following is a specification.

My invention relates to means for splitting cloth of standard width into strips of any desired width, and pertains especially to the splitting of the cloth while rolled in contradistinction to splitting lengths of cloths and then rolling or reeling the severed strips.

The main object is to save time, labor, and expense and to provide a simply constructed and operated machine which will handle rolls of cloth or other fabric, paper, or the like of any texture or size and which is capable of adjustment to adapt it to cut a roll into any desired number of narrower rolls.

The invention consists of the parts and the construction and combination of parts, as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is an end view of the machine omitting the journal-supports for the shafts which carry the knife and the roll to be split. Fig. 2 is a front elevation of the machine. Fig. 3 is a detail showing end of roll-supporting shaft and its socket.

A represents a suitable frame or base for the various parts of my apparatus, and 2 is a rock-shaft of suitable length journaled in the frame and carrying the knife-holder 3, which is adapted to be moved lengthwise of and clamped by suitable means, as the set-screw 4, at any desired point on the shaft. This knife-holder is preferably in the form of an arc of greater radius than that of the largest roll to be cut. Removably secured by appropriate means to this holder is a knife 5, which occupies the position of a chord or diameter of the arc. A handle, as 6, may be provided to permit of the oscillation of the knife and rock-shaft by the operator. Suitably positioned relative to the knife is a removable support for the roll to be split, which support is here shown as a shaft 7 of polygonal cross-section except at the ends and having one end journaled, as at 8, and the other furnished with means for giving it and the roll 9 a rotary motion.

An arbor-shaft 10, carrying the respective fast and loose pulleys 11 12 and receiving power from any convenient source, is journaled in frame A. The arbor carries a chuck, in which an end of the shaft 7 is engaged to rotate the same. This chuck is here shown as a fixed sleeve 13, having a radial slot, as 14, to admit the end of shaft 7 and being centrally cored to allow the shaft to be pushed in slightly and insure the axial alinement of the shaft and arbor. The polygonal sides of the shaft engage the walls of the slot 14 to cause the parts to turn in unison. The bearing 8 simply consists of a U-shaped block, into which the opposite turned-down end of the shaft is dropped and rests therein by gravity. A collar 15 on the shaft abuts against the block 8 and prevents any longitudinal movement of the shaft.

The roll 9, which has first been carefully and tightly wound on a wooden spool or sleeve 16, with one end of the roll having all the edges of the layers of cloth lying in the same vertical plane, is slipped onto the shaft 7 and the latter inserted into the machine with one end in the block 8 and the other in chuck 13, as described. The longitudinal movement of the roll is prevented by means of the collars 17, which are set snug and locked against the ends of the spool. The latter has a polygonal bore corresponding to the cross-section of the shaft, and the spool and shaft when the parts are assembled are essentially coaxial with the arbor-shaft 10, while the knife-carrying shaft 2 is parallel with shaft 7, and the distance between shafts 2 and 7 is approximately half the length of the knife. It is essential that the knife have an arc of movement in a plane precisely at right angles to the axis of the shaft 7. The longitudinal bearing of the knife-holder on the pivot-shaft insures the knife against any possible variation from a vertical plane.

In operation with the cloth properly wound on its spool and the spool locked on the supporting-shaft 7 the latter is placed in the machine and the knife set at such point on its pivot-shaft where it is desired to split the roll. The roll is then set in motion in the direction in which it is wound and by a simple oscillation of the knife toward the roll and the exertion of a sufficient pressure a neat clean cut is quickly made clear through the roll in the direction of the warp. By shifting the position of the knife the same roll may be cut into any desired number of narrower rolls, each of desired with.

A machine of this sort is very simple in construction and operation, is accurate, and

results in a great saving of time, labor, and expense over methods requiring the goods to be split lengthwise and then rolling the strips.

It is possible that various changes or modifications in my invention may be made without departing from the principle thereof, and I do not wish to be understood as limiting myself to the specific construction as herein shown and described.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A cloth-splitting machine having in combination a suitable frame, an arbor journaled at one end of the frame and provided with driving means, a bearing at the opposite end of the frame, said bearing and arbor capable of removably securing the ends of the shaft upon which the roll of cloth is wound, a non-rotatable splitting-knife journaled at one side of the machine and extending at right angles to the axis of the roll, an arc-shaped holder for the knife, and means whereby the knife may be adjustably held at different points relative to the roll, for splitting the cloth into various widths.

2. A cloth-splitting machine having in combination a suitable frame having a bearing at one end and an arbor at the opposite end said arbor provided with driving means and a chuck, a rotatable shaft upon which the roll of cloth is supported, said shaft having one end mounted in the bearing and the opposite end engaged by the chuck, means on said shaft at each end of the roll for preventing end movement of the latter, a second shaft journaled at one side of the first shaft, an arc-shaped knife-holder operatable in a vertical plane and having one end pivoted on the shaft and capable of a longitudinal movement thereon, means whereby the knife-holder may be fixed at different points on the second shaft, and a blade carried by the holder and adapted to slit the cloth.

3. A cloth-splitting machine having in combination a framework, a roll-supporting shaft journaled thereon and means comprising a power-driven chuck at one end of the frame and a bearing at the opposite end of said frame whereby the shaft is removably sustained at the ends, means on the shaft between opposite ends of the roll, for preventing endwise movement of the roll along the shaft, a second shaft parallel with and at one side of the first shaft, a splitting-blade and an arc-shaped holder therefor journaled on the second shaft, extending transversely therefrom and across the first shaft and its roll, and means whereby the blade may be adjustably held at different points on the second shaft, and relative to the fixed roll, whereby the roll may be split into various widths of cloth.

4. In a splitting-machine, the combination of two parallel shafts, one of which is adapted to support the roll, means for giving motion to said roll-supporting shaft, a segmental knife-holder fulcrumed on the other shaft and having a movement longitudinal thereof and operatable in a plane at right angles to the axis of the shaft, said knife-holder having long bearings to maintain its rigidity, and means for locking the knife-holder in position on its shaft and a removable knife-blade carried by said knife-holder.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN F. AMES.

Witnesses:
S. H. NOURSE,
JESSIE C. BRODIE.