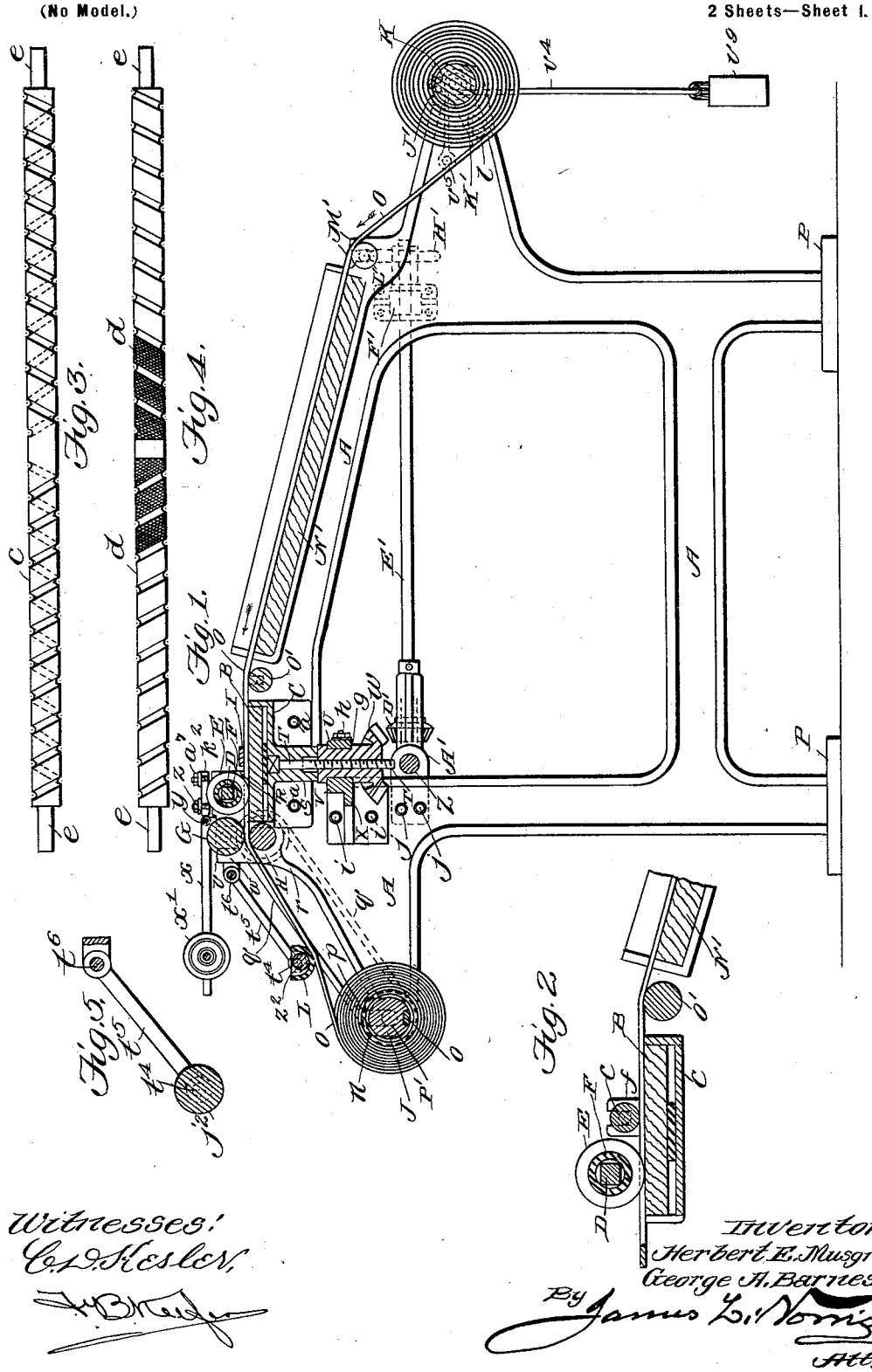
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H. E. MUSGRAVE & G. A. BARNES.

MEANS FOR CUTTING CLOTH, LEATHER, &c.

(Application filed Oct. 15, 1901.)

(No Model.) 2 Sheets—Sheet 1.



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Fig. 6.

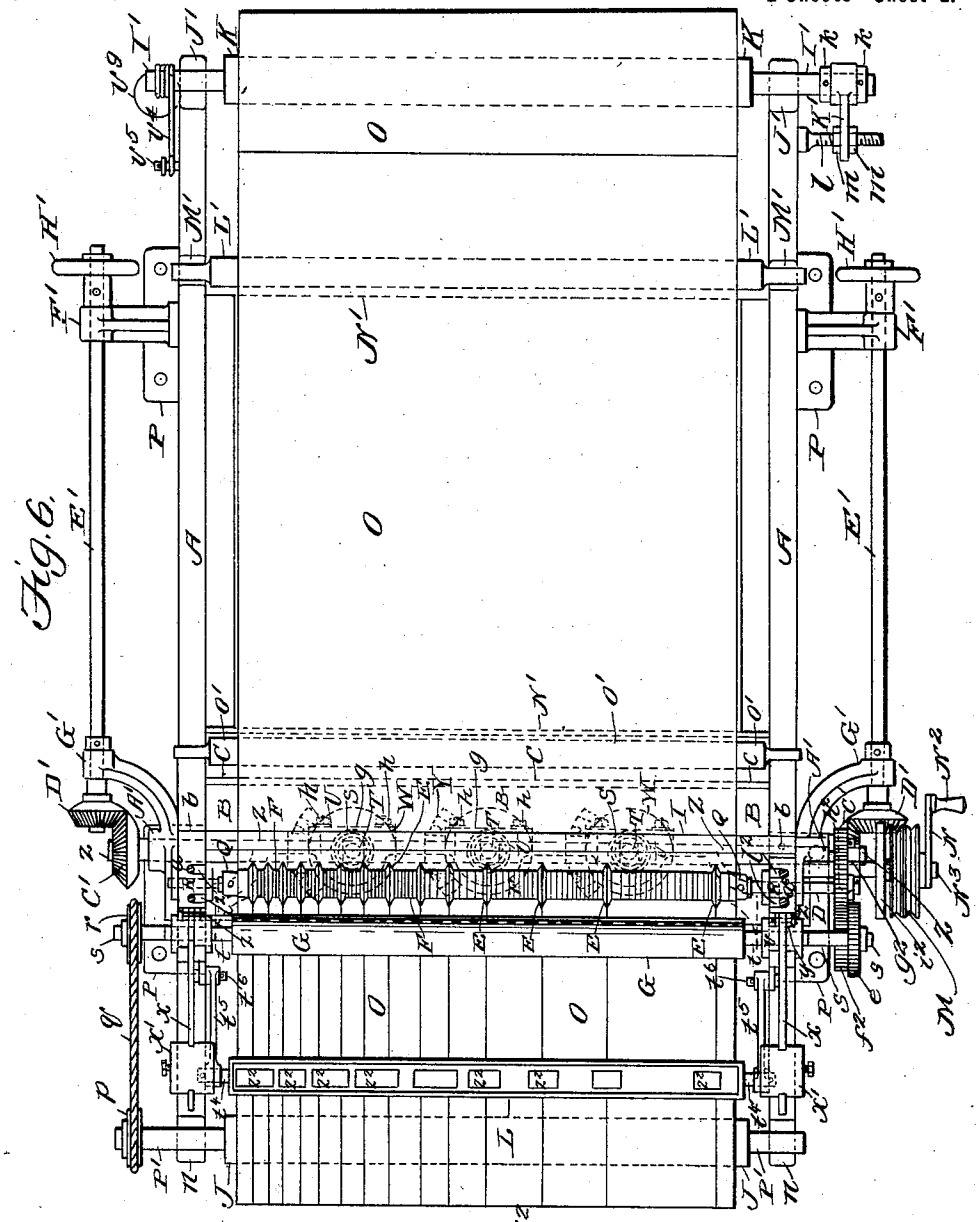
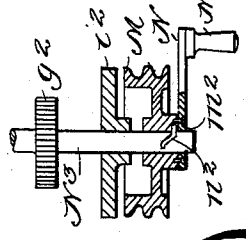


Fig. 7.



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UNITED STATES PATENT OFFICE.

HERBERT EDGAR MUSGRAVE AND GEORGE ALFRED BARNES, OF BOLTON, ENGLAND.

MEANS FOR CUTTING CLOTH, LEATHER, &c.

SPECIFICATION forming part of Letters Patent No. 698,994, dated April 29, 1902.

Application filed October 15, 1901. Serial No. 78,744. (No model.)

To all whom it may concern:

Be it known that we, HERBERT EDGAR MUSGRAVE, cotton-spinner, of The Grove, Chorley new road, and GEORGE ALFRED BARNES, manager, of High View, Chorley old road, Bolton, in the county of Lancaster, England, subjects of the King of Great Britain, have invented certain new and useful Improvements in or Relating to Means for Cutting Cloth, Leather, and other Analogous Materials or Substances, of which the following is a specification.

This invention refers to improvements in or relating to the means for cutting cloth and leather employed for covering rollers employed in machinery—such as slubbing, intermediate, jacks, and roving-frames, spinning-mules and twiners, employed in the preparation, spinning, and doubling of cotton, silk, worsted, woolen, jute, flax, and other analogous materials or substances, such as linoleum, oil-cloth, cotton, and other cloth, felting, and the like—to any desired width or in two or more widths at one operation.

Figure 1, Sheet 1, is a longitudinal sectional elevation of a sheet-cutting machine including our improvements; Fig. 2, a part-sectional elevation of tapered cutters and "temple-roller;" Fig. 3, a longitudinal elevation of temple-roller; Fig. 4, a longitudinal elevation of filleted roller; Fig. 5, a side elevation of pivoted levers carrying roller for weighting purposes on the delivery end of the machine. Fig. 6, Sheet 2, is a plan of Fig. 1 on Sheet 1; and Fig. 7, a sectional plan of friction and driving pulleys.

A represents the framework on each side of the machine; B, adjustable table; C, dished plate; D, "cutter-spindle;" E, circular tapered cutters; F, distance or adjusting ferrules or washers; G, top weighted roller; H, bottom roller; I, metallic or other guide; J, roller for receiving cut cloth, leather, and other analogous materials or substances; K, "batch-roller," carrying cloth, leather, and other analogous materials or substances to be operated upon; L, trough or vessel carrying adjustable weights; M, rope or band driving pulleys; N, stopping and starting handle or lever, and O represents the cloth, leather, and other analogous materials or substances—such as linoleum, oil-cloth, cotton, and other cloth, felting, and the like—under treatment.

In all the figures the same letters are employed to indicate corresponding parts.

The framework A on each side of the machine is provided with the feet P for securing the same on a table, stand, or floor. The framework A on each side of the machine is provided with the bearings R, in which is mounted the cutter-spindle D, carrying the circular tapered cutters E and so disposed and arranged thereon according to the equal or unequal widths into which it is intended to cut the cloth, leather, and other analogous materials or substances—such as linoleum, oil-cloth, cotton, calico, and other cloth, felting, and the like—as represented by the lines O, in its passage through the machine from the batch-roller K to the receiving-roller J. The position of each circular tapered cutter E, disposed on the cutter-spindle D, is determined by means of the distance or adjusting ferrules or washers F and secured by the nuts Q, mounted on the screwed ends of the said spindle.

Under the circular tapered cutters E is located the adjustable table B, composed of wood, metal, or other suitable material or substance mounted in the dished plate C, secured to both side frames A of the machine by the bolts or set-screws *a*, as shown in Fig. 1 of the drawings. The adjustable table B is provided with the guide-bar I, held in position by the pins *b*, fitting into holes of corresponding diameter or size located on the upper side of the framework A on each side of the machine. The guide-bar I may be perfectly plain or provided with serrations on its under side or substituted by the temple-roller *c* (shown in Fig. 3) or by the filleted roller *d*, (shown in Fig. 4 on Sheet 1 of the drawings,) the said temple-roller *c* or the filleted roller *d* being provided with the centers *e* to allow of the same being mounted loosely in the bearings or "horns" *f*, located on the framework A on each side of the machine, as shown in Fig. 2 on Sheet 1 of the drawings. The temple-roller *c* is grooved spirally from the center in opposite directions, and the filleted roller *d* is covered or spiked in a spiral form,

as shown in Figs. 3 and 4, respectively. The object of grooving the temple-roller *c* and covering the filleted or spiked roller *d* in the manner described and shown is to insure of the cloth, leather, and other analogous materials or substances—such as linoleum, oil-cloth, cotton, calico, and other cloth, felting, and the like—being directed or conveyed in a perfectly straight, level, or correct manner to the circular tapered cutters E.

The under side of the dished plate C is provided with the bosses S, in which are disposed the threaded or screwed spindles T, the lower ends of the latter extending and passing through the internally-threaded bosses U of the bevel-wheels W. The upper ends of the threaded or screwed spindles T are provided with a square "head" fitting into a corresponding square hole in the boss S to prevent the same turning or revolving when actuated by the bevel-wheels W and Y in the operation of raising or lowering the adjustable table B. The bevel-wheels W are held vertically in position in the bearings V, being secured in position by the caps *g* and the set-screws *h*. The bearings V are supported by the cross-stay X, secured to the framework A on each side of the machine by the bolts *i*. With the bevel-wheels W gear the bevel-wheels Y, mounted on the cross-shaft Z. The cross-shaft Z is mounted in the bearings A′, secured to the framework A by the bolts *j*. Each end of the cross-shaft Z is fitted with the bevel-wheel C′, with which gear the bevel-wheels D′. The bevel-wheels D′ are mounted on the side shafts E′, located in the bearings F′ and G′, the latter being carried from the bearings A′, as shown in Fig. 6 on Sheet 2 of the drawings. The side shafts E′ are fitted with the hand-wheels H′, thus allowing of uniform adjustment of the table B to its true working position from either side of the machine.

The cloth, leather, and other analogous materials and substances O to be operated upon are mounted on the batch-roller K, provided with the center I′, carried or supported in the bearings J′ on the framework A. On one side of the center I′ of the batch-roller K is loosely mounted the bifurcated lever K′, held in position by means of the "pinned" washers *k*, the bifurcated end extending to and over the screwed pin or center *l*, secured to the framework A. On the pin or center *l* are mounted the nuts *m* to allow of the bifurcated lever K′ being readily altered to produce a side adjustment of the batch-roller K and its contents in conformity with the circular tapered cutters E. From the batch-roller K the cloth, leather, and other analogous materials or substances pass over the pivoted roller L′, mounted in the bearings M′ on the frame sides A, and along the upper surface of the inclined table N′ and over the pivoted roller O′, the latter guiding the said cloth, leather, and other analogous materials or substances onto the adjustable table B, over which they pass, and under the metallic or other guide I or its equivalent, the temple-roller *c* or the filleted roller *d*, on and to the circular tapered cutters E, from whence the sheet material O is passed on or drawn between the bottom fluted roller H and the top fluted weighted roller G, from whence it is delivered on the receiving-rolling J, located on the center P′, held and supported loosely in the bearings *n* in the framework A on each side of the machine. The receiving-roller J is provided with the longitudinal bar or slide *o*, by which the end of the cloth, leather, and other analogous materials or substances—such as linoleum, oil-cloth, cotton, calico, and other cloth, felting, and the like—is secured to the said roller by means of set-screws, bolts, and the like or in any other convenient manner at each end to allow of the same being removed by sliding lengthwise, after which the batch-roller J may be readily and easily removed out of the batch or rolls of sheet material that have been wound thereon. The longitudinal bar or slide *o* may be located in a slot or recess in the batch-roller J or may be mounted on a flat surface in lieu thereof. One of the ends of the center P′ is provided with the band-pulley *p*, driven by the band or rope *q* from the band-pulley *r*, mounted on the center *s* of the bottom roller H. The band or rope *q* is mounted on the pulleys *p* and *r* in such a manner as to allow of the same "slipping" to allow for the variations in the speed demanded by the increasing or varying diameter of the roll of material being wound on the receiving batch-roller J. The rollers G and H are provided with the centers *t* and *s*, respectively, mounted loosely in the steps or blocks *v*, located in the jaws *w* on the framework of the machine. The pressure of the roller G on the material O in its passage through the machine is produced by the levers *x* and their weights *x′*, pivoted to the arm or projection *y* on the framework A by the pins or centers *z*, the weights *x′* being adjustable to give any desired or required pressure on the material O in its passage through the machine from the batch-roller K to the batch-roller J, receiving the material above mentioned. The center spindle D and the rollers G and H, receiving the cut material O from the circular tapered cutters E, are rotated by the spur-wheels e^2, f^2, g^2, and h^2. (Shown in Fig. 6 on Sheet 2 of the drawings.)

On the shaft or center N^3 is mounted the friction-pulley i^2, secured thereon in any convenient manner and is rotated by means of contact with the face of the driving band-pulley M by means of the cam arrangement, consisting of the lever N and handle N^2, carrying the pin or center m^2, operating in the inclined slot n^2 in the shaft or center N^3. (Shown in Fig. 7 on Sheet 2 of the drawings.)

Between the weighted rollers G and H and the receiving batch-roller J is disposed the

trough or vessel L, provided with the centers l^4, carried by the pivoted levers l^5, flexible or otherwise, from the jaws w on the framework A of the machine by the centers l^6, the said trough or vessel L being constructed and arranged to receive the adjustable weights Z^2, which may be of any convenient diameter and weight for the purpose of keeping the material in a "taut" condition to insure of the same being delivered in its cut state in a perfect uniform manner on the receiving batch-roller J, thereby preventing the same buckling or creasing. In lieu of the said trough or vessel L the pivoted roller j^2 may be employed for weighting purposes, as shown in Fig. 5 on Sheet 1 of the drawings.

The bearings or pedestals R may be provided with ordinary caps secured in the usual manner or with the covers k^2, provided with the slots l^2 to allow of their removal by sliding sidewise when released from the pressure of the nuts a^7 on the holding screws or bolts a^6 and without removing the latter.

The batch-roller K on the leading end of the machine is provided with a brake at one or both ends of its carrying-centers I', consisting of the band or rope v^4, which may be wound around the said center or centers as often as required to produce the necessary or desired tension to insure of the material being delivered in a perfect even manner to the circular tapered cutters E. The band or rope v^4 is attached to the pin or center v^5, secured to the side of the framework A, as shown in Figs. 1 and 2. To the lower end of the band or rope v^4 is attached the weight v^5 to produce a tension on the band or rope v^4, wound around the center I'. The material passes through the machine in the direction indicated by the arrows.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is—

1. In a machine of the class described, a spindle having cutting means, a table over which the material travels, a dished plate for receiving said table, threaded spindles depending from said table, internally-threaded gears for receiving said spindles, means for holding the gears against motion in the direction of the lengths of said spindles, a second series of gears meshing with the other gears, and means for operating said second series of gears in unison.

2. In a machine of the class described, a spindle having adjustable cutters, a table having depending threaded spindles, internally-threaded, bevel-gears for receiving said spindles, a second set of bevel-gears meshing with the first-mentioned bevel-gears, a shaft carrying said second series of bevel-gears, said shaft having a gear, a second shaft having a gear meshing with said last-mentioned gear, a manually-operable device on said second shaft, and means for holding the first-mentioned bevel-gears against movement in the direction of the lengths of said threaded spindles.

3. In a machine of the class described, a batch-roller, a receiving-roller, a spindle between said rollers, having cutting means, and a lever carrying a weight-receiving trough arranged to bear against the material as it passes from one roller onto the other.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

HERBERT EDGAR MUSGRAVE.
GEORGE ALFRED BARNES.

Witnesses:
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J. C. BOUTFLOWER.