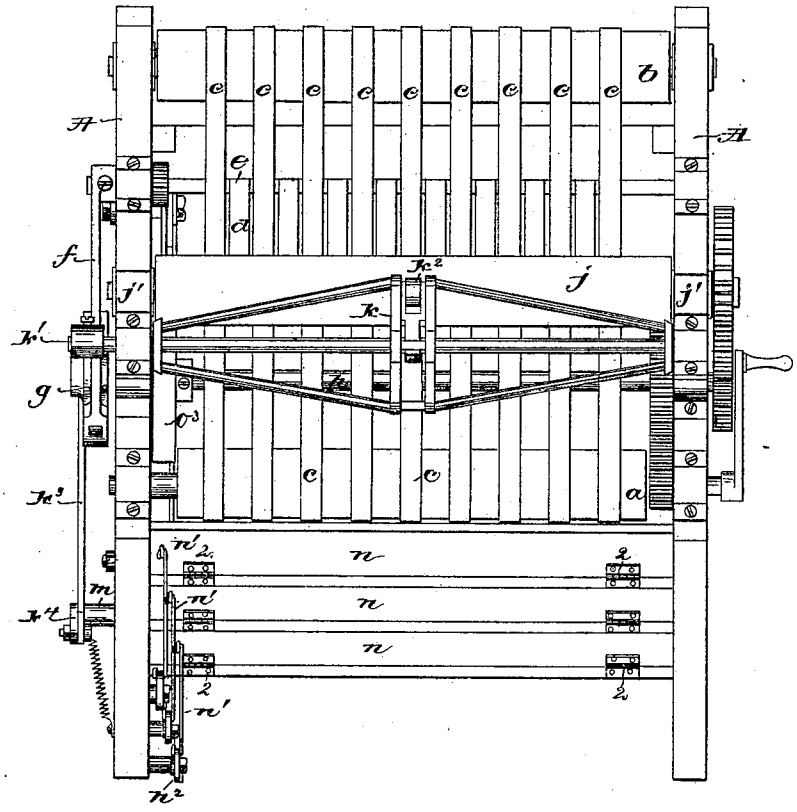
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M. H. MERRIAM.

LEATHER ASSORTING MACHINE.

No. 270,968. Patented Jan. 23, 1883.

Fig. 1.



Witnesses.
Fred A. Powell
George Stoechel

Inventor:
Matthew H. Merriam
by Crosby & Gregory attys.

N. PETERS. Photo-Lithographer. Washington, D. C.

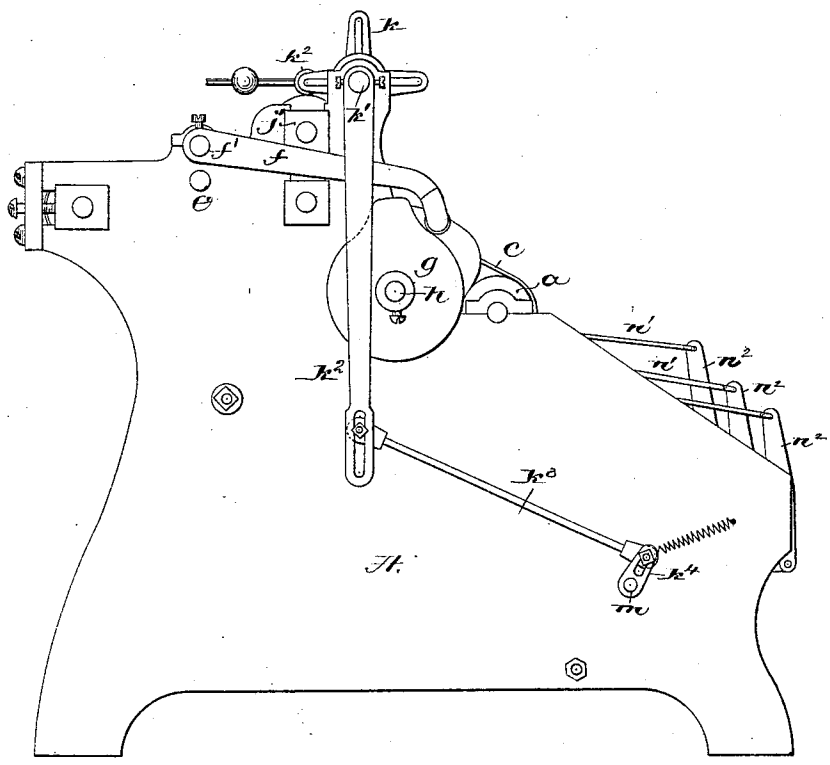
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Fig. 2.



Witnesses.
Fred A. Powell
George Stoechel

Inventor:
Matthew H. Merriam
by Crosby & Gregory attys.

N. PETERS, Photo-Lithographer, Washington, D. C.

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Fig. 3.

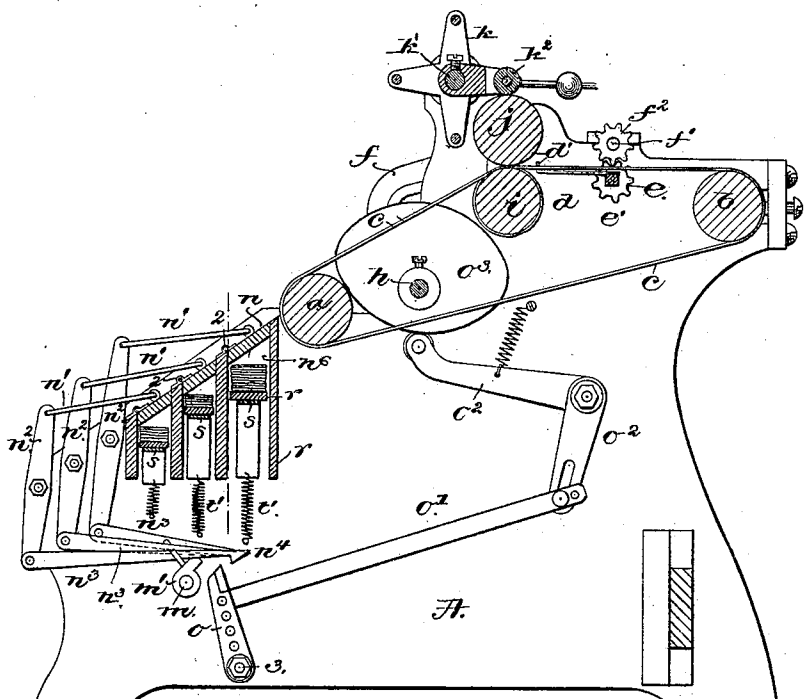
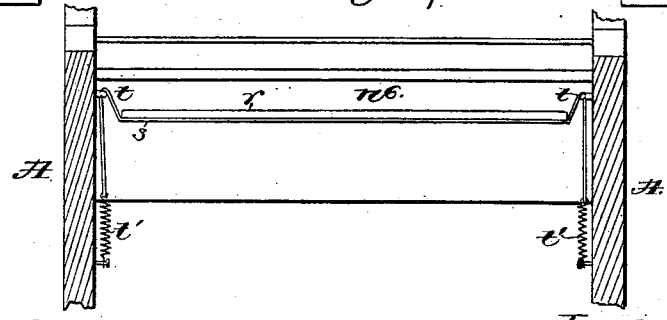


Fig. 4



Witnesses.
Fred A. Powell.
George Stoeckel.

Inventor:
Matthew H. Merriam,
by Crosby, Gregory & Abbys.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

MATTHEW H. MERRIAM, OF LEXINGTON, MASSACHUSETTS.

LEATHER-ASSORTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 270,968, dated January 23, 1883.

Application filed November 25, 1882. (No model.)

To all whom it may concern:

Be it known that I, MATTHEW H. MERRIAM, of Lexington, county of Middlesex, State of Massachusetts, have invented an Improvement in Assorting-Machines, of which the following description, in connection with the accompanying drawings, is a specification.

My invention, relating to an assorting-machine for separating strips of leather or other similar material according to its thickness, is embodied in a machine having a series of endless tapes or equivalent traveling surfaces, upon which the strips are successively laid, and by which they are subsequently conveyed to the proper receptacle. A rake or series of fingers, co-operating with the traveling surface upon which the strips are laid and by which they are moved toward the machine, acts as a stop for the strip, aligns the same, and prevents it from entering the machine until at the proper moment, when the said rake is automatically removed from contact with the edge of the strip, and the latter is conveyed by the traveling surface between a pair of rollers, one of which is forced away from the other for a distance equal to the thickness of the strip passing between them, the said rollers, thus separated by the strip, acting upon a selecting device, the extent of movement of which controls the opening of the cover of one or more of a series of boxes or receptacles toward which the strip is conveyed from between the said rollers, the said strip passing freely over the covers of the closed boxes until it arrives at one having an open cover, or, if very thin, the strips pass over the entire series of covers. The covers of the said boxes or receptacles are provided with actuating devices controlled by the said selecting device, so that one or more of them is engaged by a common actuating device operated by the machine according to the thickness of the strip and consequent amount of movement of the roller beneath which it passes. A very thin strip fails to cause sufficient movement of the selecting device to enable any of the cover-actuating devices to be engaged; consequently the thinnest strips pass entirely over the series of boxes or receptacles into a pile by themselves. A slightly thicker strip will cause the lowermost box to be opened, still thicker ones will cause the two lowermost boxes to be opened, and so on, the number of boxes at the lower end that are opened increasing with the thickness of the strips, so that the thicker strips are placed in the higher receptacles and the various intermediate grades in corresponding intermediate receptacles. The receptacles are made of a width corresponding to or a little in excess of that of the strip, and, in order to insure the proper piling of the said strips one upon the other, the said receptacles are provided with movable bottoms, counterbalanced by springs in such a manner as to be held near the top of the receptacle when but small weight is placed upon them. As the strips are gradually piled upon one another their weight depresses the said movable bottoms in such a manner that the top of the pile of strips remains at substantially the same level, so that they have to drop but a slight distance upon entering the receptacle.

Figure 1 is a plan view of an assorting-machine embodying my invention; Fig. 2, an end elevation thereof illustrating the cover-selecting device; Fig. 3, a longitudinal section, showing the cover actuating mechanism; and Fig. 4, a transverse section showing one of the receptacles.

The frame-work A carries rollers *a b*, over which pass a series of endless tapes, *c*, forming a traveling supporting-surface, upon which the strips are laid transversely and are conveyed to the machine. A rake or stopping device, consisting of a series of arms, *d*, mounted on a shaft, *e*, and provided with fingers *d'*, projecting up between the tapes *c*, as shown in Fig. 3, temporarily arrests each strip, and brings it into position at right angles to the frame-work A and parallel with the axis of the roller *i*, at which time the said shaft *e* is rocked by means of the lever *f* and its cam *g*, mounted upon the main cam-shaft *h* of the machine. The lever *f* is mounted on a spindle, *f'*, having a pinion, f^2, meshing with the pinion *e'* on the shaft *e*, so that the raising of the said lever causes a corresponding depression of the rake *d*. The strip thus released by the fingers *d'* passes between a pair of rollers, *i j*, the former mounted in fixed bearings upon the frame-work and the latter mounted in bearings *j'*, free to slide in the frame-work toward

and from the bearings of the roller i, the said roller j normally being supported upon the surface of the roller i, except when a strip is passing under it, when the roller j is supported upon the said strip, and is raised from the roller i a distance equal to the thickness of the said strip.

The selecting mechanism consists of a frame-work, k, mounted on a transverse shaft, k', and having a roller, k^2, bearing upon the roller j at its middle, so that the said frame k is rocked with the shaft k' for a distance corresponding to the movement of the middle of the roller j, or the average thickness of the strip passing between the rollers i and j. The shaft k' is provided with a lever, k^2, connected by a link, k^3, with an arm, k^4, placed on a stud, m, passing through the frame-work, the said stud being provided with a supporting-cam, m', for the series of actuating devices for the series of covers n of the boxes or receptacles n^6, into one or another of which the strip is to drop, according to its thickness. The said covers n are shown as hinged at 2, and are joined by links n' with levers n^2, pivoted on the frame-work, each lever carrying at one end an arm, n^3, which rests on the cam m' referred to. Each arm n^3 has a hook, n^4, at its end, and the surface of the said cam m' is such that the said hooks are held one somewhat above the other, that connected with the lever n^2, attached to the cover of the lowest box, being in the lowest position. The said links n', levers n^2, and hooked arm n^3 constitute the independent cover-actuating devices, and the said devices are operated at the proper times by the cover-actuating mechanism, consisting of an arm, o, pivoted at 3, and connected by a link, o', with a bell-crank lever, o^2, actuated by the cam o^3 upon the main cam-shaft h, the arm o being moved once at each revolution of the said cam-shaft, the cams g and o^3 being so arranged that the arm o will be moved just after the rake d is dropped and while the strip is passing between the rollers i and j. By this arrangement the strip, as it passes between the said rollers, acts on the selecting mechanism to rotate the cam m' a distance proportional to the thickness of the strip, thus dropping all the hooked arms n^3 a greater or less distance, according to the thickness of the band. A very thin strip will not cause a sufficient movement of the said arms n^3 to enable any of the hooks n^4 to be engaged by the arm o, and consequently none of the covers n will be opened, and the thin strip will pass over the covers n of the entire series of receptacles, n', and fall upon the floor in a pile by themselves. A somewhat thicker strip will cause a sufficient movement of the cam m' to enable the hook n^4 of the arm n^3 connected with the lowest box or receptacle to be engaged by the arm o, the other arms n^3 still being retained out of reach of the arm o, and consequently the lower box only will be opened, and the strip passing over the covers of the upper boxes will be stopped by the cover of the lower box and will drop into the said box. A greater movement of the cam m' caused by a thicker strip will cause the covers of the two lower boxes to be opened, and a still greater movement will cause the covers of all the boxes to be opened, they being shown in this instance as three in number; but the strip will be arrested by the first cover, and thus it will be seen that the strips will be separated in accordance with their thickness into the different receptacles.

The receptacles n' are provided with movable bottoms r, supported upon flexible bands or straps s, passing over rollers t at the ends of said receptacles, and connected with springs t', which thus counterbalance the said bottoms and the weight supported upon them, permitting the said bottoms to sink under the weight upon them. By this construction the said bottoms are retained near the upper end of the receptacles when empty, so that the strips, in dropping into the receptacles, have to fall but a short distance and are not likely to be turned over and be piled unevenly. In proportion as the receptacles fill up, the weight of the pile of strips will cause the bottom piece, r, to sink, stretching the springs t', thus retaining the top of the pile of strips at substantially the same level.

I claim—

1. In a machine for assorting leather, the rollers i j, endless traveling strip-feeding surface, combined with the rake governing the admission of the material to be acted upon, the series of receptacles, and selecting mechanism, whereby the proper one of the said receptacles is caused to receive the material according to the thickness thereof, substantially as described.

2. The endless traveling strip-feeding surface and movable roll operated by the material to be assorted, combined with the selecting mechanism operated by the said roll, and the series of receptacles and their cover-actuating mechanism, substantially as described.

3. The feeding-surface, roller j, and selecting mechanism, combined with a series of receptacles, independent cover-actuating devices therefor, controlled by the said selecting mechanism, and actuating mechanism for the said cover-actuating devices, substantially as described.

4. The series of receptacles and means to feed the material therein, combined with movable bottoms for the said receptacles and counterbalancing-springs therefor, substantially as and for the purpose set forth.

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

MATTHEW H. MERRIAM.

Witnesses:
JOS. P. LIVERMORE,
FRED A. POWELL.