

(No Model.)

2 Sheets—Sheet 1.

F. OCHS.

MACHINE FOR INTERLACING CURLED HORSE HAIR, &c.

No. 476,405.

Patented June 7, 1892.

Fig. 1.

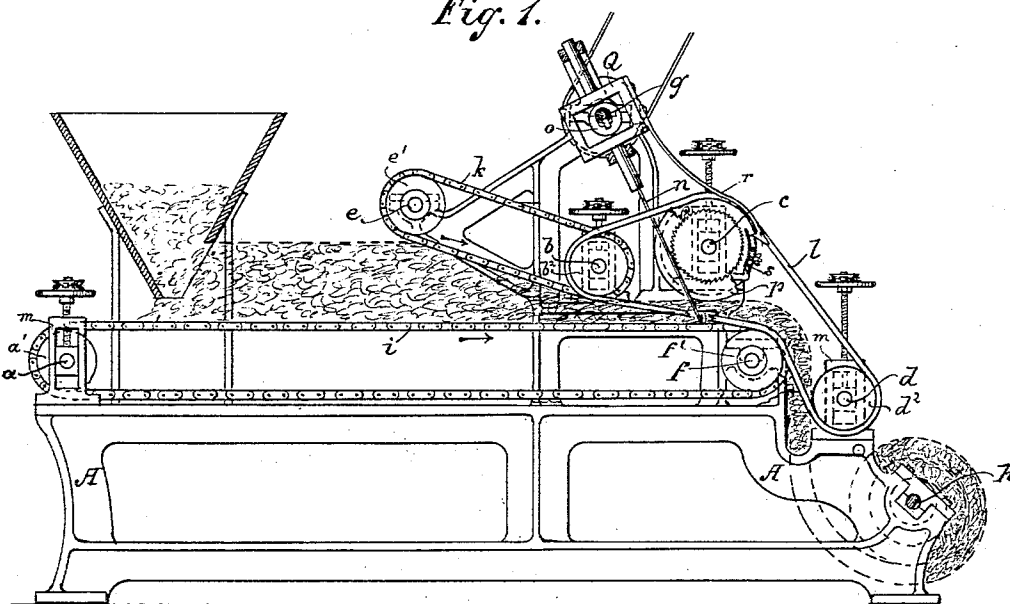


Fig. 2.

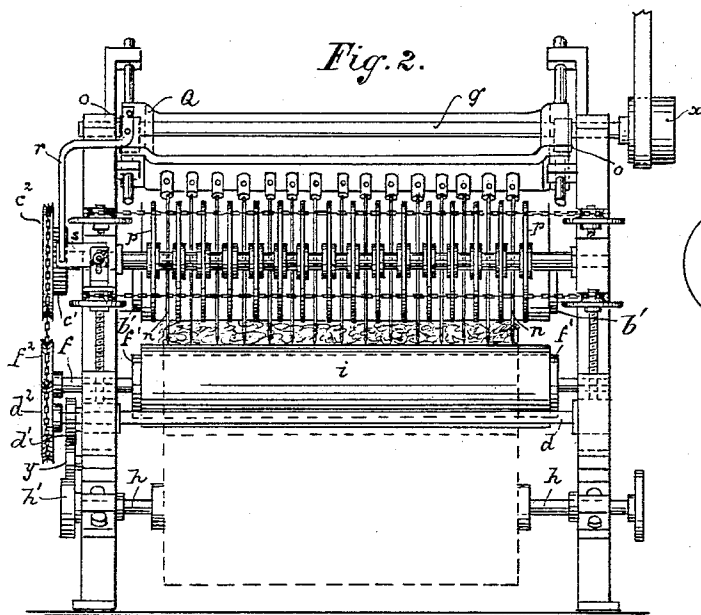
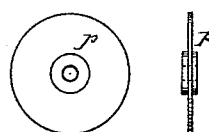


Fig. 3.



Witnesses:

Philip J. Ryan.
S. Perin.

Inventor:

Fritz Ochs
per Charles Raettig
his Atty.

(No Model.)

2 Sheets—Sheet 2.

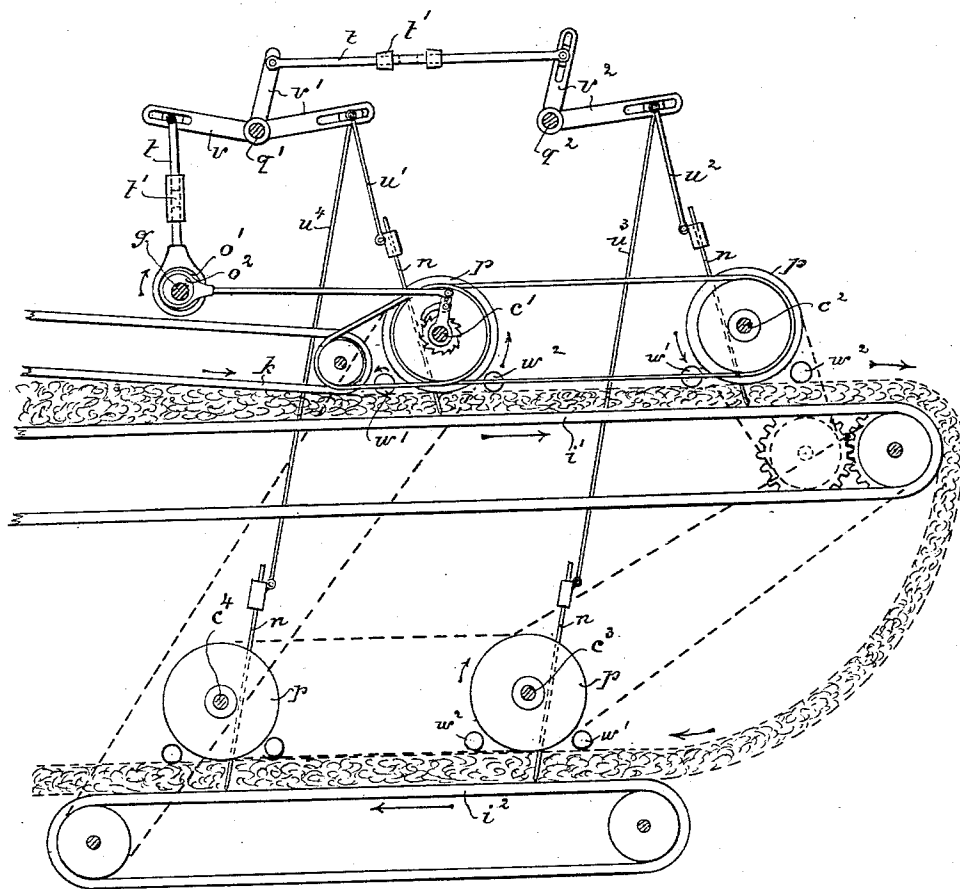
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Fig. 4.



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UNITED STATES PATENT OFFICE.

FRITZ OCHS, OF FÜRTH, GERMANY.

MACHINE FOR INTERLACING CURLED HORSE-HAIR, &c.

where it is interwoven by the action of the needle-hooks n , and, dropping behind the drum f , is wound upon a core mounted upon the shaft h . When a perfect fabric is to be produced, this product is passed again through the machine, with its lower face turned up, whereby both sides of the matting will be treated exactly alike, assume the same appearance, and will form a strong and durable fabric. In the case shown on the drawings the ratchet-wheel c' is actuated directly by a pawl attached to the sliding frame A . I do not confine myself to this especial mode of feeding, but may employ levers and pawls in place of the shield s described, and actuate the same from the rotating-shaft g by means of a separate eccentric, as shown in Fig. 4.

Instead of passing the fabric twice through the machine, the parts of the latter can be arranged in a manner shown in Fig. 4, where four rows of needles are employed to insure perfect interlacing of the horse-hair. The driving-shaft g will in this case be placed, preferably, in front of the pressure-disk shafts c' c^2 c^3 c^4 , as shown in Fig. 4, and needle-hook-frames will be actuated from an eccentric o' , secured on shaft g by means of the shafts q' q^2 , slotted levers v v' v^2 , and connecting-rods t , provided with turnbuckles t' , which allow the adjustment of the position and the track of the needle-hooks and pitmen u' u^2 u^3 u^4 , while the eccentric o^2 actuates the feeding mechanism. These disk-shafts c' , c^2 , c^3 , and c^4 are preferably arranged in pairs over endless aprons i' and i^2 , running parallel to each other in opposite directions, and the fabric produced under the two upper rows of needles upon the upper apron i' is guided to the lower apron i^2 in such a manner that the lower side is turned upward while the fabric is passing under the two last rows of needles and pressure-disks in the direction indicated by arrows.

All the needle-hooks are preferably slightly inclined against a vertical to the direction of travel, the inclination in the two upper rows being the reverse from that of the two lower rows. Thus the hairs pulled up will cross each other, causing a thorough interlocking of the material, and thereby a highly-finished and durable fabric.

To prevent the accumulation of material

in front of the pressure-disks and to support their action of retaining it during the needle action, I preferably employ two weighted rollers w' w^2 , turning in the direction of the travel of the feeding-belt and placed one in front and one behind a row of pressure-disks, as shown in Fig. 4.

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

1. In a machine for interlacing curled horse-hair, the combination of an endless apron for carrying the raw material and an endless apron arranged at an acute angle to the former apron, the adjacent surfaces of both aprons moving in the same direction, and means for adjusting one end of one of the aprons at the nearest approach of each other with the pressure-disks mounted on a shaft, chain-wheels, chains, and ratchet-wheel, an obliquely-up-and-down-moving needle-frame carrying the needle-hooks, a feeding-pawl, and a winding mechanism, as and for the purposes herein shown and set forth.

2. In a machine for interlacing curled horse-hair, the combination of a needle-frame carrying one or more rows of needle-hooks and a rotating shaft carrying adjustable eccentrics with two endless feeding and compressing aprons and an adjustable shaft carrying pressure-disks, as and for the purposes herein shown and described.

3. In a machine for interlacing curled horse-hair, the combination of two parallel endless carrying-aprons moving in opposite directions and an endless compression-apron arranged at an acute angle to one of the latter with needle-frames carrying needle-hooks, shafts carrying pressure-disks, pressure-rollers, and means for regulating the position and operating the needle-hooks and for propelling the aprons and the other feeding mechanism at a uniform speed, as and for the purposes herein shown and described.

Signed at Fürth, in the Kingdom of Bavaria, Empire of Germany, this 26th day of January, A. D. 1892.

FRITZ OCHS.

Witnesses:

H. J. DUNLAP,
LULA D. HAY.