

E. R. Barnes & J. B. Blakslee.
Felting Mach.

N^o 15508

Patented Aug. 12. 1856

Fig. 1.

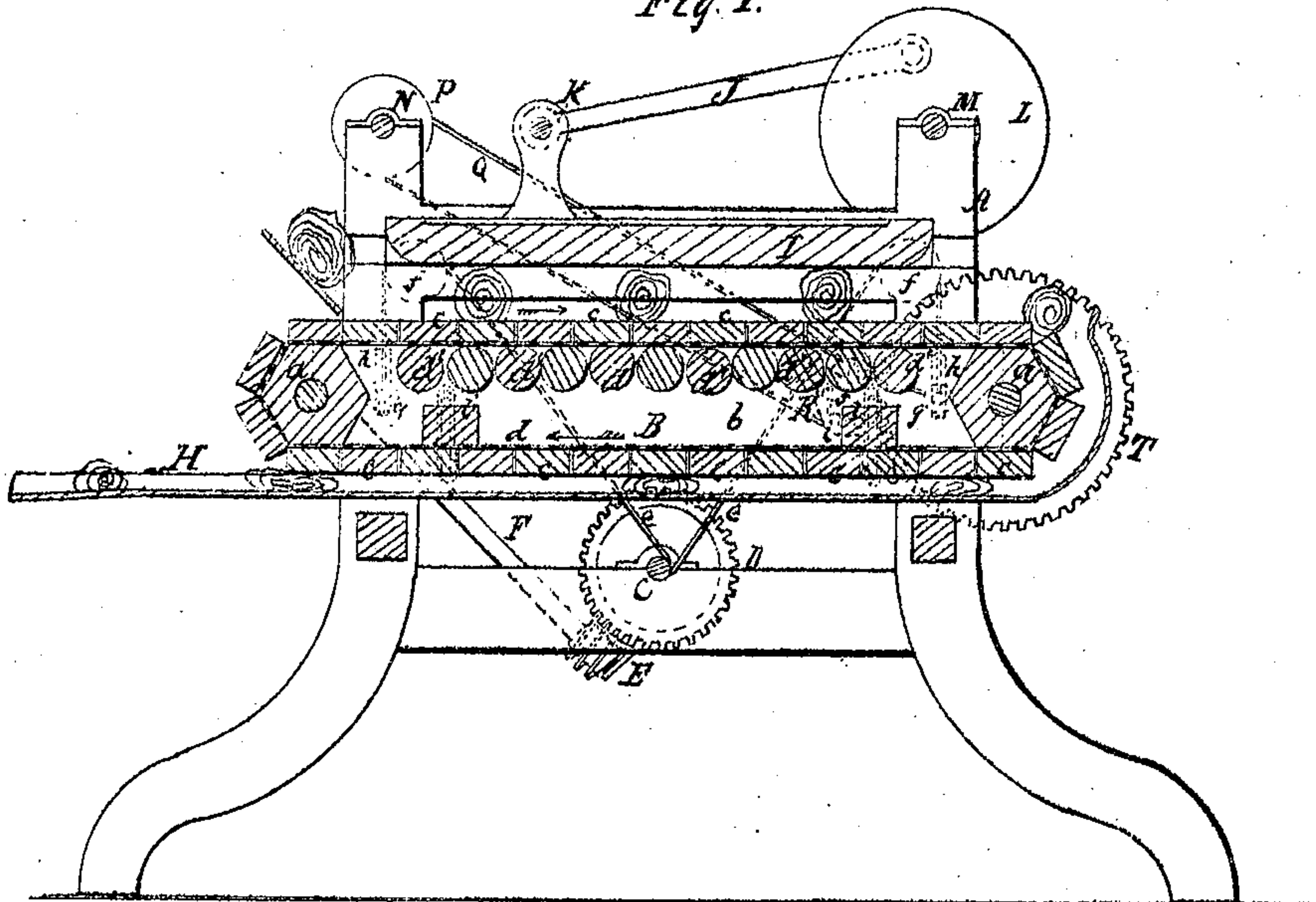
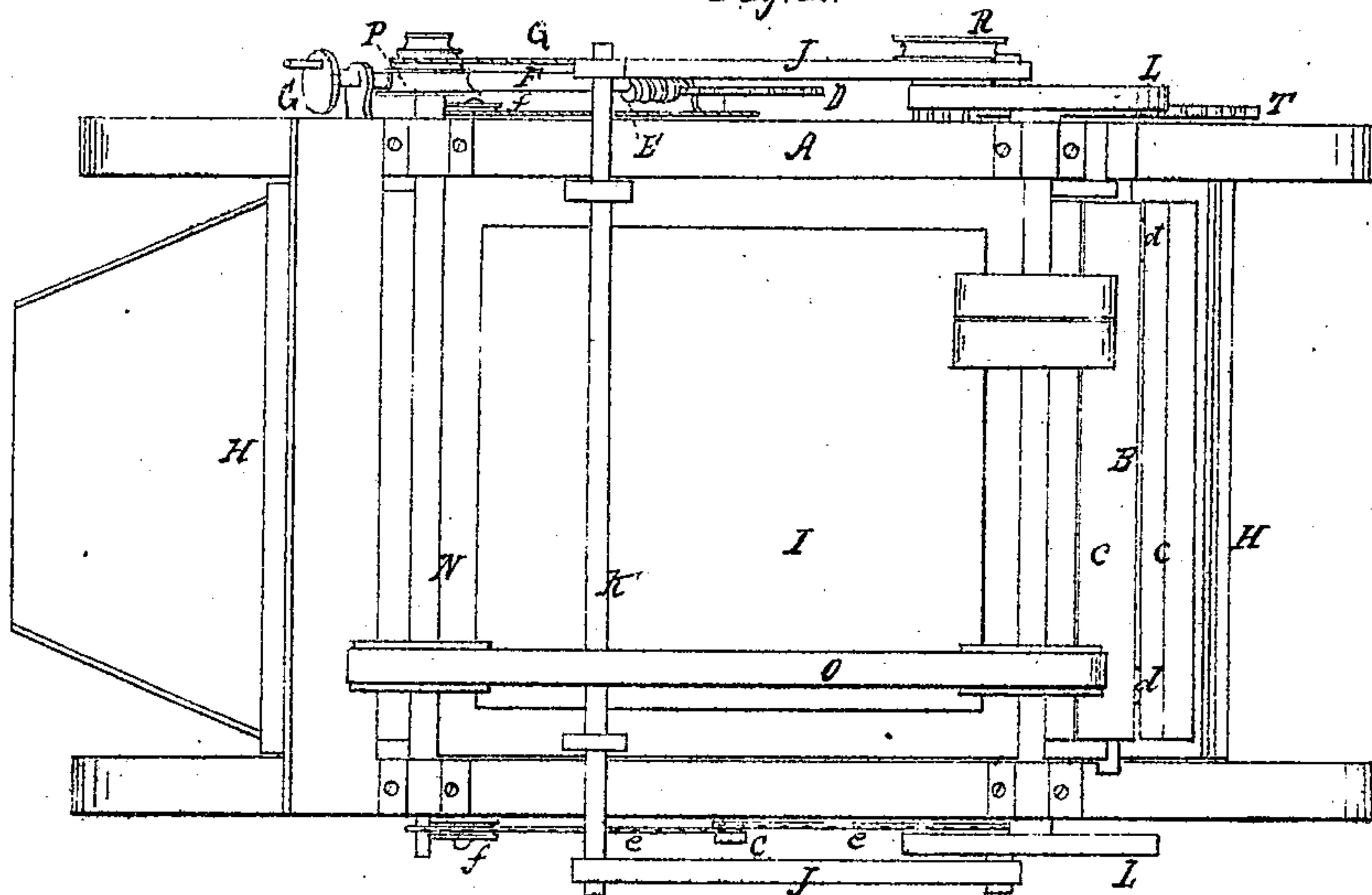


Fig. 2.



UNITED STATES PATENT OFFICE.

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FELTING HAT-BODIES.

Specification of Letters Patent No. 15,508, dated August 12, 1856.

To all whom it may concern:

Be it known that we, E. R. BARNES, of Brookfield, in the county of Fairfield and State of Connecticut, and JAMES B. BLAKSLEE, of Newtown, in the county of Fairfield and State of Connecticut, have invented a new and Improved Machine for Felting Hat-Bodies and other Articles; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a longitudinal vertical section of our improvement, the plan of section being through the center. Fig. 2, is a plan or top view of the same.

Similar letters indicate corresponding parts in the two figures.

The nature of our invention consists in constructing the endless belts of india rubber, or other elastic material, upon which are secured slats or cross bars forming the bed upon which hat bodies and other articles are felted. Also in the peculiar arrangement of suspending the bed of felting machines, and rendering the same yielding and adjustable substantially as herein described.

To enable others skilled in the art to fully understand, and construct our invention, we will proceed to describe its construction and operation.

A, represents a frame of rectangular form, in which an endless apron B, is placed. This apron works over rollers (a) (a) of polygonal form, one of which is placed at the front, and the other at the back end of the frame A. The rollers (a) are not attached to the frame A, but work between side pieces or strips (b) which are placed within the frame A.

The apron is formed by securing slats or strips (c) to belts (d) which pass over or around the rollers (a) said belts being formed of india rubber, cloth or other suitable elastic material. The slats or strips (c) may have their outer surfaces covered with cork or some yielding or soft material. The endless apron B, is placed in the frame A, slightly inclined, the lower or depressed end being at the front end of the frame A. Between the side pieces or strips (b) at their upper parts, there are placed friction rollers (d') upon which the upper part of the endless apron bears or rests. The side pieces or

strips (b) (b) are suspended in the frame A, by cords (e) which pass around a shaft (e) at the lower part of the frame A, and around pulleys (f) on the sides of the frame, the ends of the cords being attached to rods (g) which pass through slots in the uprights of the frame A, the rods (g) being attached to the side pieces or strips (b) (b). The ends of the cords (e) have india rubber strips (h) attached to them in which strips the rods (g) fit so as to give a certain degree of elasticity to the endless apron, see dotted lines Fig. 1. One end of the shaft (e) has a pinion (D) attached to it, in which pinion a screw (E) at the lower end of an inclined shaft (F,) gears. The shaft (F) works in proper bearings attached to the frame (A) and a crank wheel (G) is secured to its upper end, see Fig. 2.

H represents a bed placed underneath the endless apron B; this bed is suspended by india rubber loops (i) from the outer sides of the side pieces or strips (b) (b). The bed extends the whole length of the apron (B) and is curved upward partially around the apron where it passes over the roller (a) at the back end of the frame A, as clearly shown in Fig. 1. The upper edge of the bed H, is bent slightly outward; this bed may be formed of metal or wood. On the upper part of the frame A, there is placed a board I, the edges of which are fitted in grooves in the inner side pieces of the frame A; this board I, has a reciprocating motion given it by means of pitmen J, J, which are attached to the ends of a rod k, on the board, and to crank pulleys L, L, on the ends of a driving shaft M attached to the upper part of the frame A. N, is a shaft also on the upper part of the frame A, which shaft receives its motion from shaft M, by means of a belt (o). The shaft N, has a pulley P, at one end, around which a belt Q, passes, said belt also passing around a pulley R, at the side of the frame A. The pulley R, has a pinion S, attached to its axis, which pinion gears into a toothed wheel T, at the end of the axis of the back roller (a) of the endless apron.

Operation: Hat bodies, or other articles to be felted as shown in red Fig. 1, are moistened rolled up and placed on the front end of the endless apron B, motion being given the driving shaft M, in any proper manner, the apron B, is moved in the direction indicated by the arrow, see Fig. 1, and a reciprocating motion is given the board I. Mate-

rials being felted pass beneath the reciprocating board I, and are carried by the endless apron B, to the back end of the frame A where they are delivered and returned between the bed H, and endless apron B, to the front end of said frame A, where they are unrolled, examined, and again subjected to the action of the reciprocating board and endless apron, which process is repeated until sufficiently felted or sized. Materials passing between the reciprocating board I, and endless rotating belt B, receive automatically the same treatment as in the usual mode of felting and by the peculiar combination of the reciprocating board I, and yielding endless belt B, materials being felted continue to become rolled more tightly within their wrapper until delivered at the back end of the frame A, receiving throughout their passage by the oscillating motion of the belt B, the same amount of pressure. The apron B may be raised or lowered so

as to allow of requisite space between the board I, and apron B, by turning the shaft F, which gives motion to the shaft c, and consequently operates the cords e. 25

Having thus fully described our improved mechanism for felting hat bodies, and other materials, what we claim therein as new, and desire to secure by Letters Patent is— 30

The peculiar arrangement of suspending and rendering elastic and adjustable the endless rotating bed of felting machines substantially in the manner described, so that it may be elevated or depressed while in operation, and at the same time possess an oscillating motion in order to adapt itself to the varying stages of the process of felting. 35

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Witnesses:

S. B. PEEK,
S. S. MIDDLEBROOK.