

JAMES CRISP & VINER V. DODD.

Mach.^{ne} for Rolling and Felting

Hat Bodies. Patented Oct. 17, 1871.

No. 119,970.

Fig 1

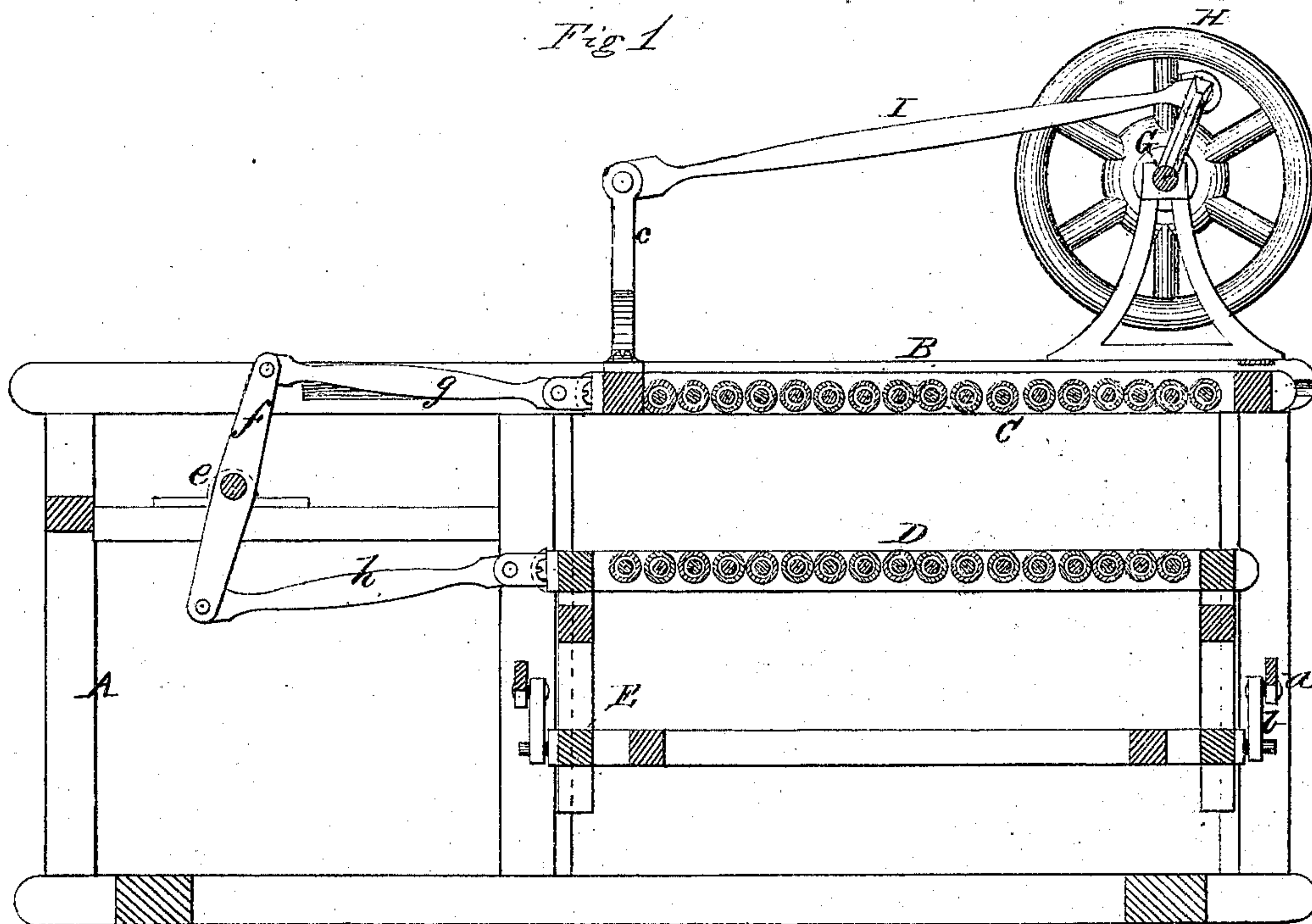


Fig 2

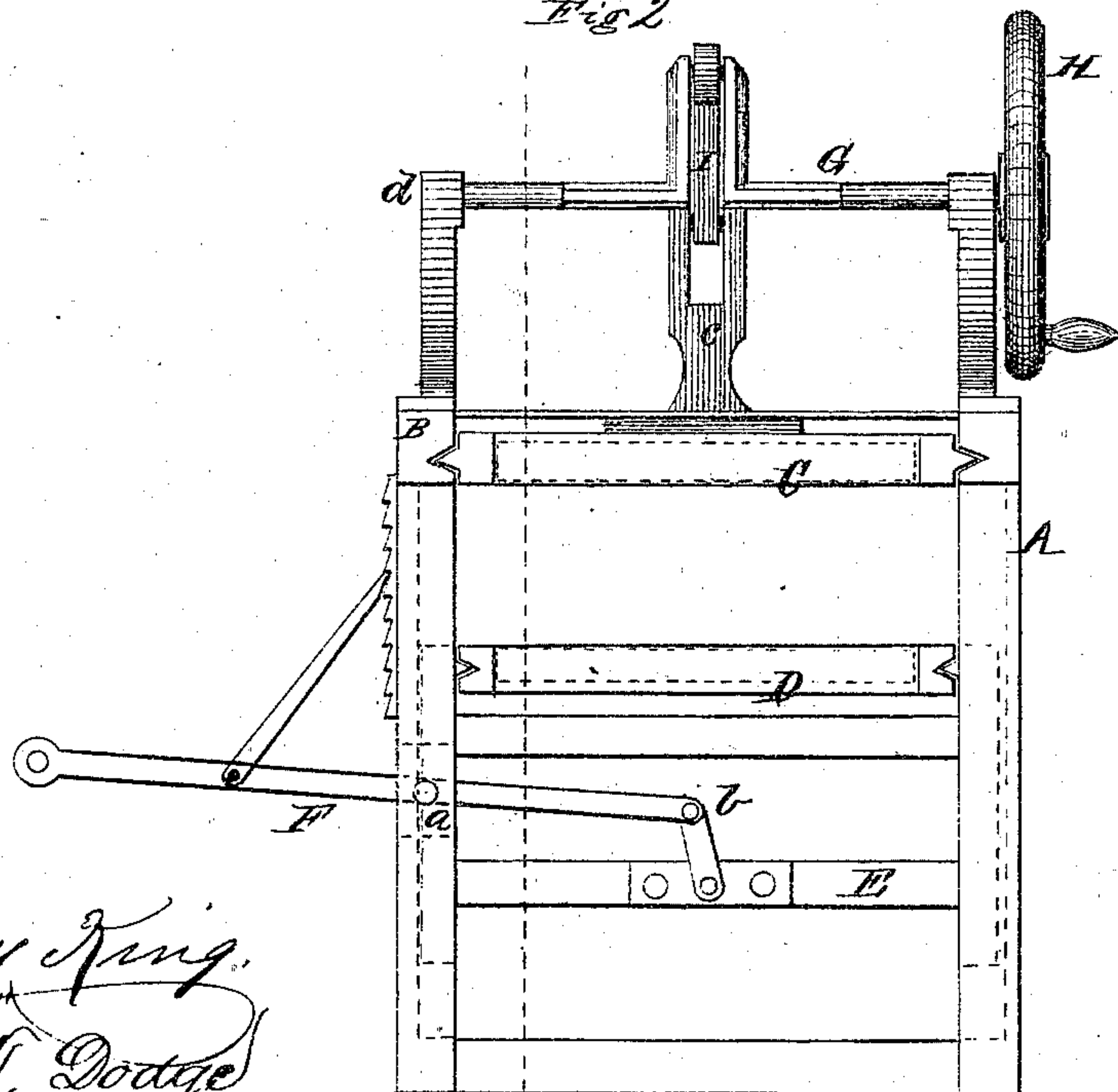


Fig 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES CRISP, OF BLOOMFIELD, AND VINER V. DODD, OF ORANGE, ASSIGNORS
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IMPROVEMENT IN ROLLING AND FELTING HAT-BODIES.

Specification forming part of Letters Patent No. 119,970, dated October 17, 1871; antedated September 30, 1871.

To all whom it may concern:

Be it known that we, JAMES CRISP, of Bloomfield, and VINER V. DODD, of Orange, both in the county of Essex, and State of New Jersey, have invented certain Improvements in Machines for Rolling and Felting Hat-Bodies, of which the following is a specification, reference being had to the accompanying drawing.

Our invention consists in an improvement in the process of felting hat-bodies and similar articles, by means of a pair of reciprocating beds provided with a series of loose parallel rollers, the beds being so constructed and arranged that any degree of pressure desired may be applied to the articles placed between them for the purpose of being felted.

In the drawing, Figure 1 is a longitudinal vertical section of the machine on the line *xx* of Fig. 2; Fig. 2 is an end view of the same; and Fig. 3 is a plan view of one of the rollers detached.

Heretofore, either one or both of the reciprocating beds of felting-machines have been made with corrugated faces, and have not been so constructed and arranged that they could be brought together so as to apply any desired variable pressure to the article interposed between them, and these machines have failed to produce perfect felting, mainly because of the action of the rigid corrugated faces of one or both of the beds, and the absence of suitable devices for the application of the pressure, as desired. My improvements for obviating the objections to the old machines consist in the employment of loose rollers in both of the reciprocating beds, and in so constructing and arranging these beds that any desirable pressure may be applied at the same time that the articles are sized or felted.

In constructing the machine, a strong rectangular frame, A, is made, of any size desired, and out of any suitable materials, and between its upper sides a bed, B, is so arranged as to slide or move freely longitudinally. The frame of this bed is provided with a series of rollers, C, placed transversely of the frame and parallel with each other, and so as to turn freely on their journals, as shown in both figures. Underneath the bed B another bed, D, similarly constructed and provided with rollers, is mounted between the upper sides of a frame, E, and so arranged as to slide or move longitudinally and parallel with said

bed B, as is shown in the figures. The frame E is arranged within the frame A, so that it can be moved vertically in the same by means of levers F, pivoted at *a* in the side posts of the same, which levers have their inner ends connected by links *b* to the ends of the frame E, as shown, and their outer ends connected by a cross-bar or handle, not shown. Upon the top of the frame A, and near its rear end, is mounted in suitable bearings, *d*, a double crank-shaft, G, provided at one end with a driving or crank-wheel, H, and connected by a pitman, I, to a short standard, *c*, securely attached to the front end of the upper bed B, as shown in Fig. 1. In the forward end of the frame A, and immediately in front of the reciprocating beds, a shaft, *e*, is mounted, with a rocking bar, *f*, placed thereon so as to turn loosely. The ends of this bar are connected by pitmen *g* and *h* to the reciprocating beds B and D, as shown in Fig. 1, so that as the driving or crank-wheel H is revolved, a reciprocating motion is given to the beds B and D.

In operating this machine, power is applied to the driving-wheel so as to give a rapid reciprocating motion to the beds. The operator then takes the cone or hat-body, after having suitably prepared it for the purpose, and places it on the lower bed D, at the same time pressing down upon the levers F, and forcing or moving the frame E with the bed D up toward the bed B until the hat-body comes in contact with its rollers, when it will be rapidly rolled between the rollers of the beds and thoroughly felted or sized, as the case may be. It will be seen that any desired pressure may be given to the article, or that by means of a ratchet, *i*, and pawl, *j*, a fixed, instead of the variable and yielding, pressure of the hand, may be given to it. As the article to be sized or felted is thus placed between loose parallel rollers, and in such a way that a uniform or variable pressure may be brought to bear while it is being rolled, it will be seen that the process is similar to the hand manipulations of a skilled operative, and must result in thorough felting; and, further, that it is entirely free from the objections to the reciprocating beds, having rigid corrugated surfaces. When desired, several hat-bodies or other articles may be rolled and felted at the same time.

Having thus described our invention, what we claim is—

1. The frame A having mounted therein a pair of reciprocating beds B and D provided with the loose rollers C, and arranged to be operated longitudinally by means of the rock-shaft *f* and pitmen *g* and *h*, in combination with the frame E, levers F and links *b* for operating one of the beds vertically, substantially as and for the purpose of felting hat-bodies, as set forth.

2. In combination with the beds B and D constructed and arranged to be operated recipro-

cally, the adjustable frame E, levers F, and links *b*, substantially as and for the purpose set forth.

3. The beds B and D provided with the closely-arranged loose rollers C, when constructed and arranged to operate as herein described, for the purpose of felting hat-bodies, as set forth.

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Witnesses:

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