

J. G. MEEKER.
Machines for Hardening and Felting Hat-Bodies and
other Fabrics.

No. 226,336.

Patented April 6, 1880.

Fig. 1.

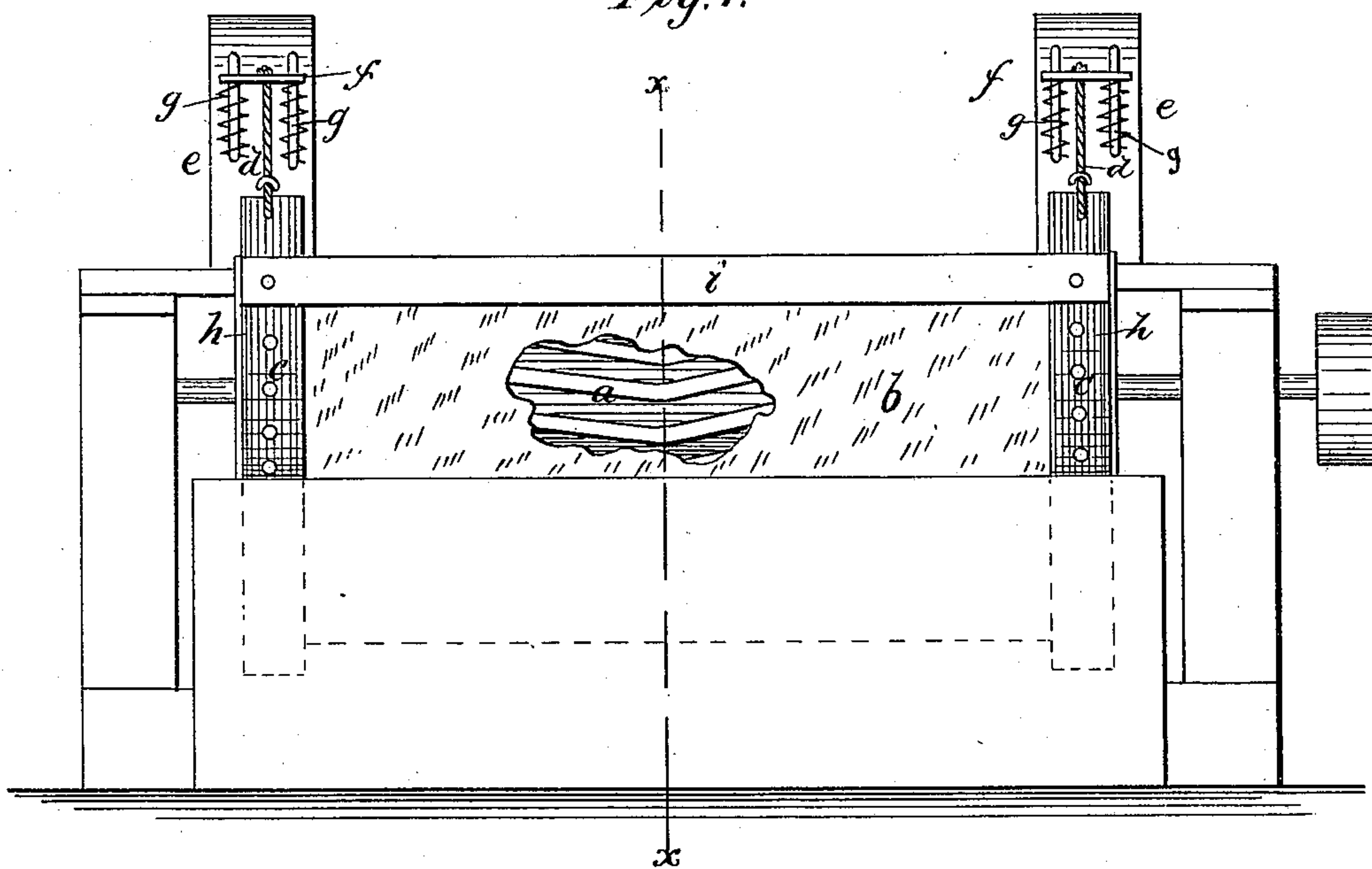
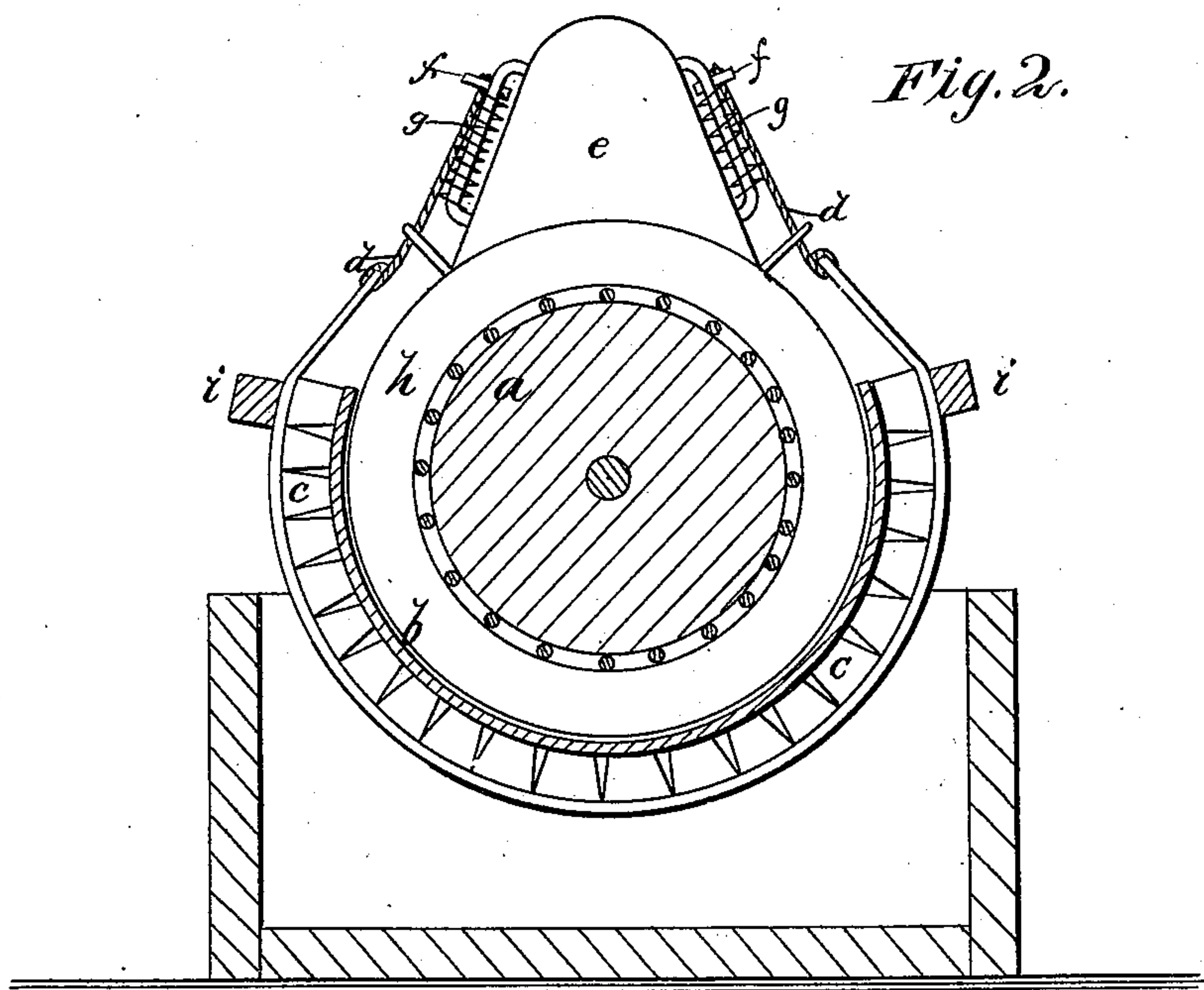


Fig. 2.



WITNESSES:

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JOHN G. MEEKER, OF DANBURY, CONNECTICUT.

MACHINE FOR HARDENING AND FELTING HAT-BODIES AND OTHER FABRICS.

SPECIFICATION forming part of Letters Patent No. 226,336, dated April 6, 1880.

Application filed November 3, 1879.

To all whom it may concern:

Be it known that I, JOHN G. MEEKER, of Danbury, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Machines for Hardening and Felting Hat-Bodies and other Fabrics; of which the following is a specification.

The object of this invention is to construct a felting-machine with an adjustable and self-adjusting apron surrounding the felting-roll, whereby the machine may readily adapt itself to the bat and the more delicate operations of felting may be performed.

The invention consists in an apron of flexible material, such as canvas, rope matting, elastic fabric, &c., attached around the felting-roller by adjustable and elastic connections to the frame of the machine, so that while the flexible apron is held at a definite distance from the roll it may adjust itself to the bat and hug the same closely with a delicate pressure.

The construction and operation will be more particularly explained with reference to the accompanying drawings, wherein—

Figure 1 is a front elevation of the machine with the apron partially broken open. Fig. 2 is a vertical transverse section on the line *x x* of Fig. 1.

Similar letters of reference indicate corresponding parts.

The felting-roll *a* is journaled in the frame of the machine so as to revolve in a suitable box for containing hot water, and has its surface formed or fitted with ribs of rope or other elastic material, or of wood, arranged in any desired manner, the material and arrangement of the ribs depending on the character of work that is to be performed.

The flexible apron *b* is attached to blocks *c* at each end, and is held around the roll *a* by cords or straps *d*, that pass from the blocks *c* at each side of the roll *a* and at both ends of the apron to the side frames, *e*, of the machine.

The cords *d* are connected to plates or followers *f*, which are fitted to move on the fixed rods *g*, around which are spiral springs that tend to raise the followers *f* and draw the blocks *c* upon the fixed circular heads *h*, whereby the apron is held in place at a definite distance from the roll.

Any suitable arrangement of spring-holders may be used to retain the apron by spring-

tension, and such tension may be made adjustable in any desired manner.

The apron *b* will be made of material such as canvas, rope matting, sheet-rubber, or elastic fabric, or other suitable material of a flexible character, whereby the apron has a flexibility in every direction.

In operation, as the bat is entered between the roll and apron the spring-connections will allow the apron to give outward to accommodate the size of bat, and the bat will be held with elastic pressure during the felting or hardening operation. The apron will give readily as the bat shifts its position, and the pressure will not be as harsh as when a slatted apron is used. At the upper edges of the apron there are rigid cross-bars *i*, attached to the blocks *c*, which prevent the ends of the apron from drawing together.

The apron may have a certain amount of looseness lengthwise of the roll *a*, and the bars *i* will serve to preserve the looseness.

The machine fitted with the flexible and self-adjusting apron, as described, is adapted for hardening felted fabrics and the more delicate operations of felting. It is specially intended for taking the hat-bodies directly from the cones for hardening previous to use of machines that complete the felting.

I am aware that slatted aprons have been fitted around felting-rolls adjustably; but such machines are for work in the later stages, besides which the main object of such slats is to permit fitting of the apron in circular form. They have but little flexibility when fitted, and that in one direction only.

I am aware that a slatted apron has been used and will do the work; but it lacks the desired flexibility, is too harsh for the first hardening process, and results in a loss of material; but

What I claim as new is—

1. In machines for hardening and felting fabrics, the apron that surrounds the felting-roll, made of the flexible and flexibly-hung canvas *b*, as shown and described.

2. The combination of the apron *b*, the end blocks, *c*, the cords *d*, the frames *e*, the spring-followers *f*, and the circular heads *h*, as and for the purpose specified.

JOHN G. MEEKER.

Witnesses:

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