

(No Model.)

A. T. CLARK.

FELTING ROLL FOR HAT SIZING MACHINES.

No. 378,573.

Patented Feb. 28, 1888.

Fig. 1 x

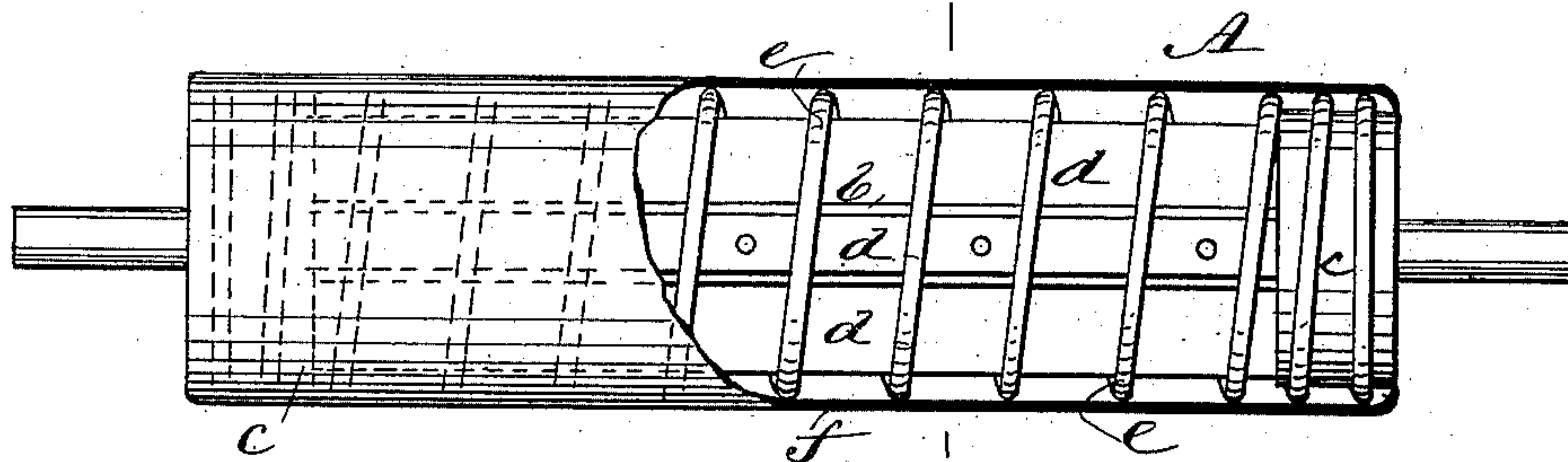


Fig. 2

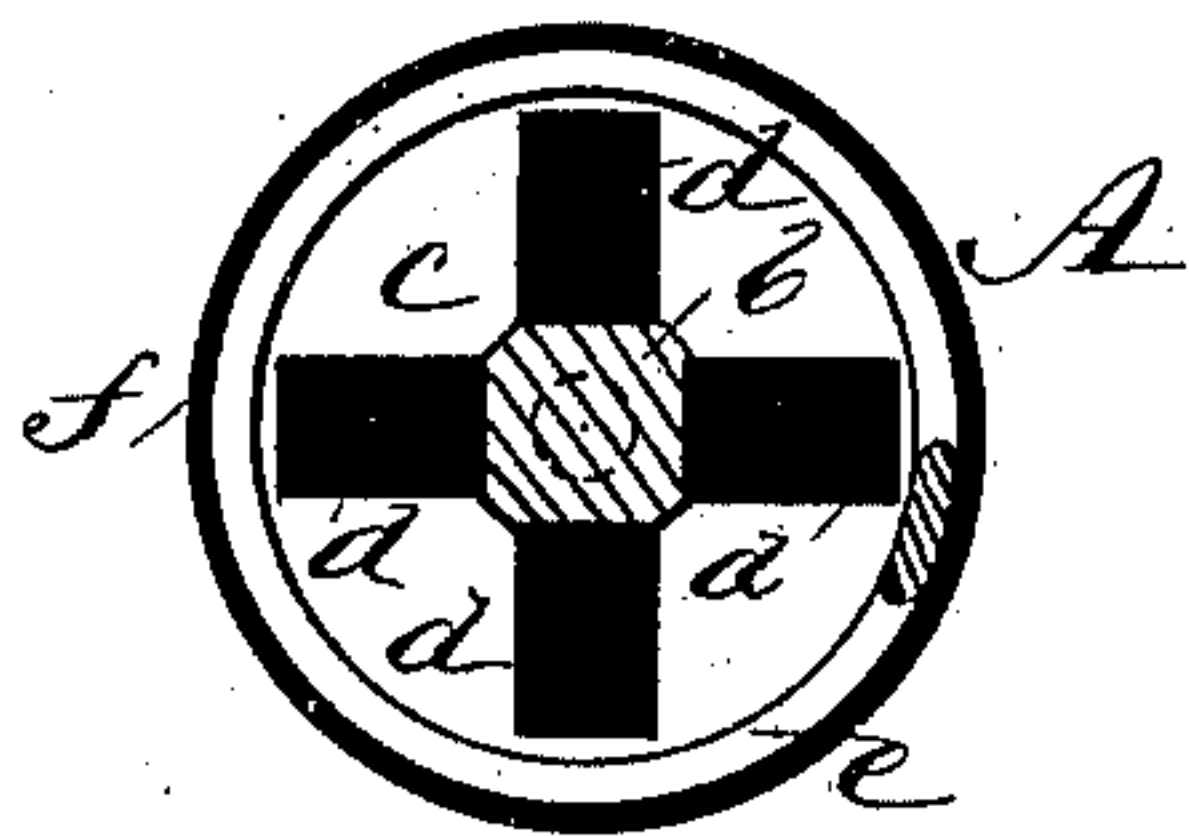


Fig. 3

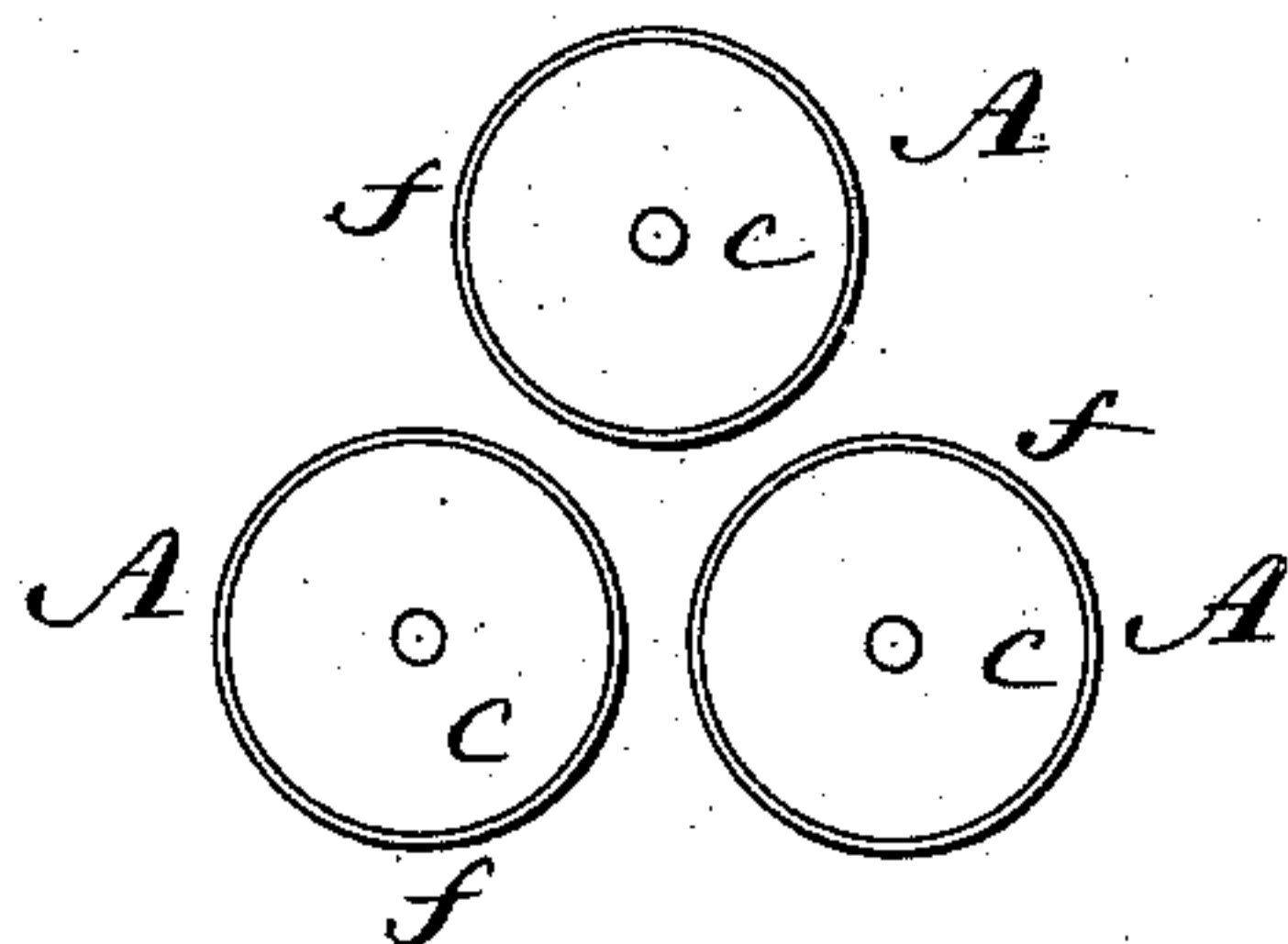
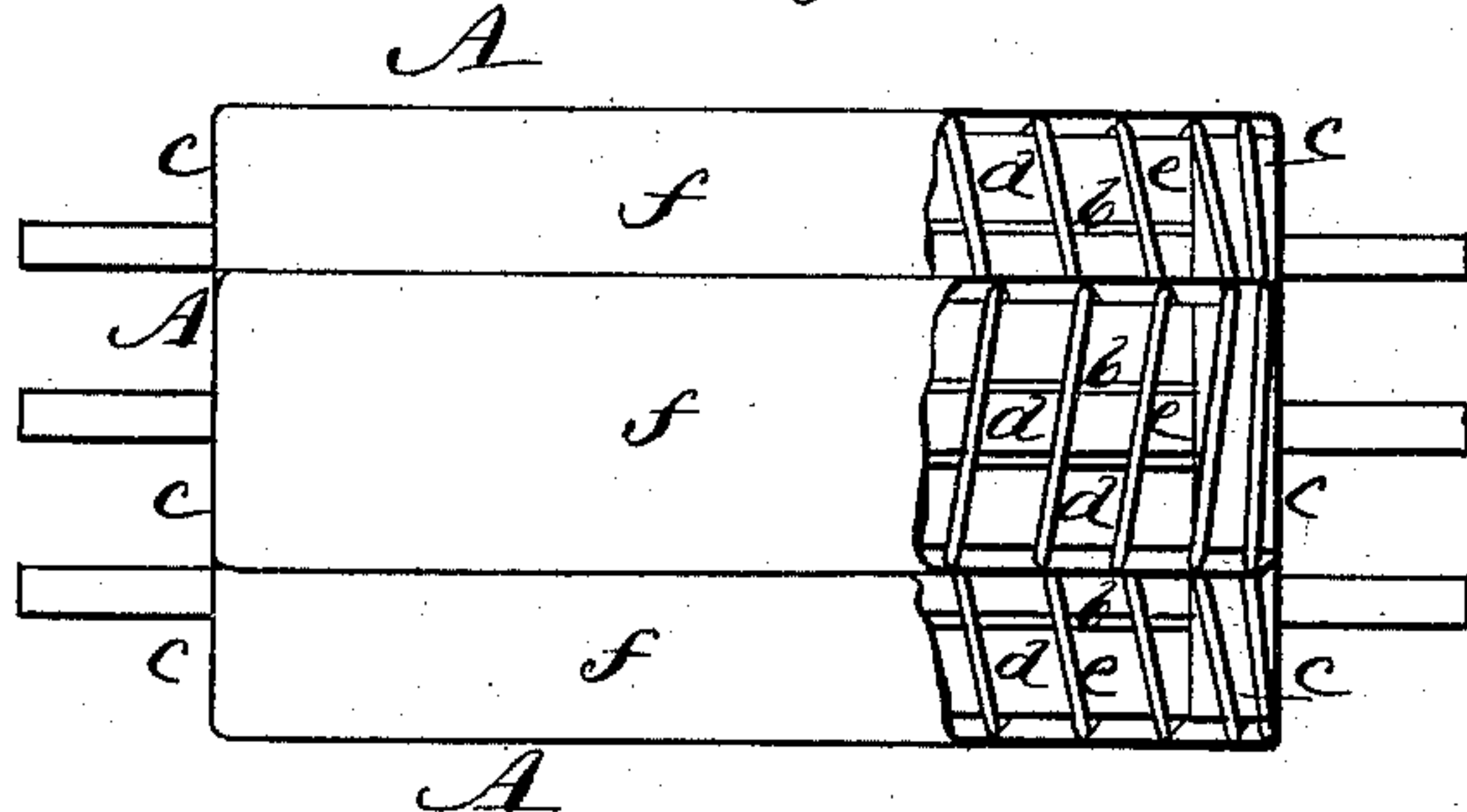


Fig. 4



WITNESSES:

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UNITED STATES PATENT OFFICE.

AARON T. CLARK, OF NEWBURG, NEW YORK, ASSIGNOR TO HIMSELF AND
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FELTING-ROLL FOR HAT-SIZING MACHINES.

SPECIFICATION forming part of Letters Patent No. 378,573, dated February 28, 1888.

Application filed May 19, 1887. Serial No. 238,776. (No model.)

To all whom it may concern:

Be it known that I, AARON T. CLARK, of Newburg, in the county of Orange and State of New York, have invented a new and useful
5 Improvement in Felting-Rolls for Hat-Sizing Machines, of which the following is a full, clear, and exact description.

This invention relates to felting or sizing rolls of machines for sizing fur or wool hats,
10 which are of a yielding construction on their acting surfaces, for the purpose of doing away with that hard or abrading action on the hat-bodies placed between the felting rolls or rollers, which takes place when rigid rolls having
15 rigid longitudinal strips on their exterior are used.

The invention consists in a felting or sizing roll of a novel yielding construction on its acting surface and throughout the main portion
20 of its body, and which, unlike longitudinal ribs or yielding rods on its acting surface, has a continuous yielding spiral pressure-like action upon the hat-bodies, thereby making the quality of work done by it more even and
25 more closely resembling the same work as done by hand, substantially as hereinafter described.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate
30 corresponding parts in all the figures.

Figure 1 represents a longitudinal view of a felting roll or roller embodying my invention, a portion of the cover or clothing of the roller being removed. Fig. 2 is a transverse section
35 upon the line *xx* in Fig. 1; and Figs. 3 and 4 are diagrams showing, respectively, an end view and partly-broken top view of three of the rollers as arranged for action.

The invention is not restricted to any particular build of hat-sizing machine or the number of felting-rollers used in it; but for the convenience of explaining the construction and action of the roller, which is the subject of the invention, three felting-rollers are shown in
40 diagrams Figs. 3 and 4, the upper one of which may, as usual, be carried by a hinged or swinging frame adapted to move said roller to or from the lower ones, and all the rollers be suitably driven to act upon the hat-bodies confined between them, as well understood by those
50 familiar with hat-sizing machines.

Each roller A—that is, any or all of them—is constructed of a rigid longitudinal center body piece or core, *b*, extending from one circular head *c* of the roller to the other circular
55 head *c* thereof. Secured—as by pins or otherwise—upon this rigid core *b* are a series, comprising any number, of longitudinal strips or blocks *d*, of india-rubber or other suitable elastic material, arranged to extend between the
60 circular heads *c c* radially around the core *b*. Outside again of these elastic longitudinal strips and upon or around them is a spiral spring, *e*, extending throughout the length of
65 the roller and secured at its ends in any suitable manner upon the circular heads *c c* of the roller. A covering or clothing, *f*, in the form of a hose, and which may be of leather or any
70 suitable flexible fabric or material, is then slipped and secured to its place over the spiral spring *e*. This completes the roller or acting portion or body thereof.

Said roller, when in action upon the hat-bodies, operates in a soft and yielding manner upon said bodies, with all the necessary firm-
75 ness, however, to produce the desired effect, the metallic spring *e* giving a certain stiff but yielding support to the covering *f*, and the elastic strips or blocks *d* supporting in an easy
80 yielding manner the spring *e* throughout its length. The spiral spring *e*, too, unlike mere longitudinal strips or rods, does not act at intervals upon the roll of hat-bodies in planes which are longitudinal with said roll, but operates in a continuous manner transversely to
85 the roll through the flexible covering *f* upon said roll, after the fashion of hand-felting, which produces a more even and better quality of work.

In grouping a series of these rollers A together, as necessary to perform the work, one or more of them should have its spiral-spring support *e* arranged to run in a reverse direction to the springs of the other rollers, so as to avoid the working of the hat-bodies more to
90 one end than to the other end of the rollers. Thus in machines using three felting-rollers, which is a very common construction, the upper roller should have its spring *e* arranged to run in a reverse direction to the springs *e e* of
100 the two lower rollers, as shown in Fig. 4.

Having thus fully described my invention, I

claim as new and desire to secure by Letters Patent—

1. The within-described felting roll or roller for hat-sizing machines, consisting of a central
5 rigid body-core, yielding supports outside of said core, a spiral spring encircling said yielding supports, and a flexible covering or clothing inclosing said spring, substantially as specified.
- 10 2. In a felting roll or roller, the combina-

tion of the central longitudinal body-core, *b*, the longitudinal elastic strips or blocks *d*, the spiral spring *e*, secured at its ends upon the heads of the roller, and the outer flexible covering or clothing, *f*, essentially as shown and 15 described.

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Witnesses:

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