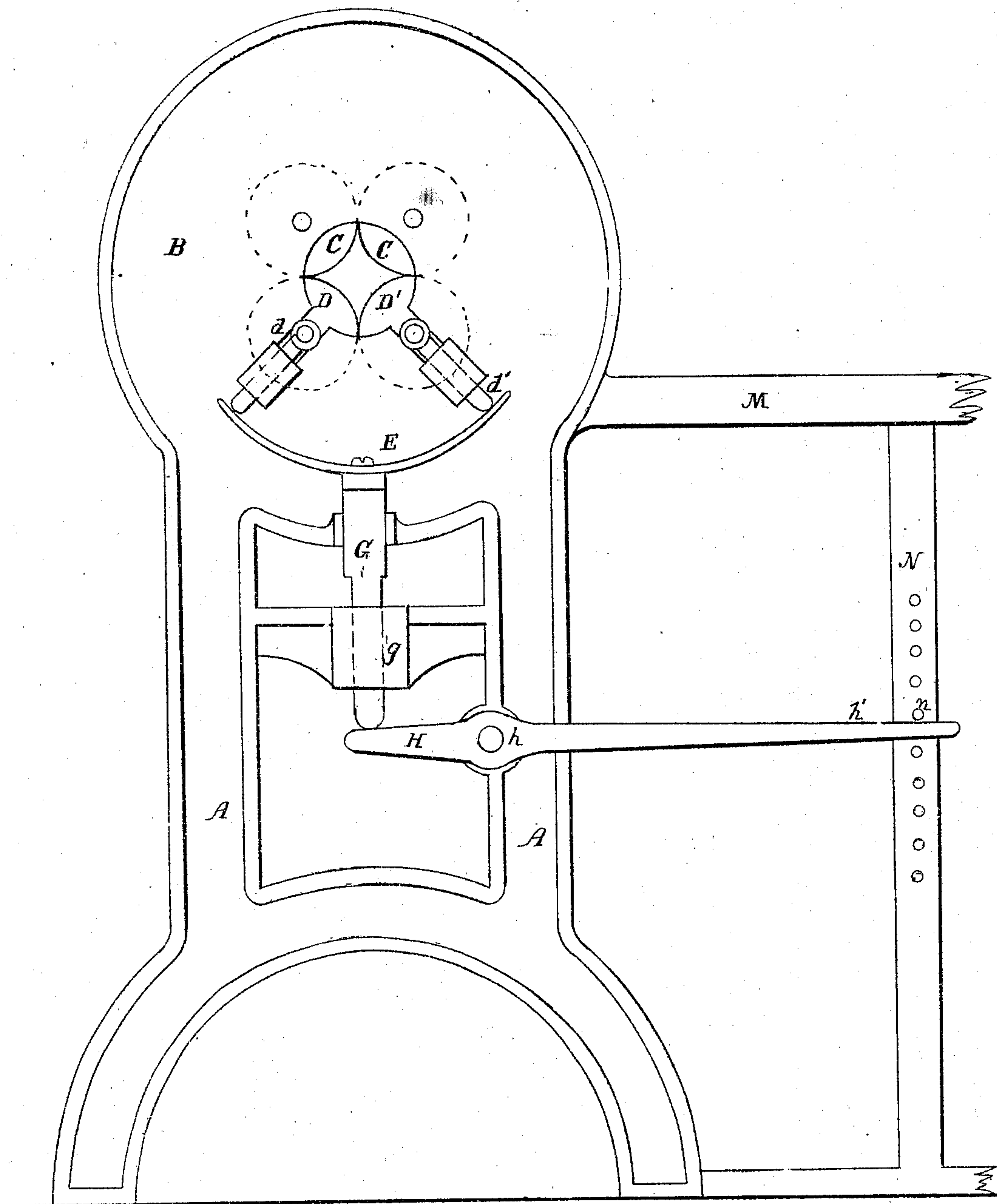


*R. Smith,
Felted Machine.*

No. 1496.

Patented June 4, 1861.

No. 32,500.



Charles B. Pickering

Oliver A. Todd

Witnesses.

Russell Smith Inventor.

UNITED STATES PATENT OFFICE.

RUSSELL SMITH, OF DANBURY, CONNECTICUT, ASSIGNOR TO SIDNEY S. WHEELER, OF
SAME PLACE.

MACHINE FOR FELTING HAT-BODIES.

Specification of Letters Patent No. 32,500, dated June 4, 1861.

To all whom it may concern:

Be it known that I, RUSSELL SMITH, of Danbury, in the county of Fairfield and State of Connecticut, have invented a certain
5 new and useful Improvement in Machines for Felting Hat-Bodies; and I do hereby declare that the following is a full and exact account thereof, reference being had to the accompanying drawing; which is an end
10 elevation of a felting-machine with my improvement attached.

My invention relates to that class of felting, or "sizing" machines, as they are sometimes called, in which four rollers are placed
15 within a barrel or cylinder the rollers being placed close together, but not parallel one to the other, the space between serving as a chamber through which the hats are passed, and the action of the rollers during the
20 passage serving to knit the fibers together. This style of machine is well known. Two of the rollers are hung upon springs so as to allow them to accommodate the size of the inclosed chamber to the hat which is
25 passing through it. These springs have usually been made of india rubber and each required adjusting separately if a greater or less tension was required. The rubber springs are quickly deteriorated by the oil
30 and other chemicals used in the process, and occasion much expense for their renewal. Several attempts have been made to use steel springs, but owing to the confined space, they have heretofore been unsuccessful.
35

My invention consists in certain means whereby the strain upon both rollers is readily and quickly adjusted to circumstances by a single movement of the attendant without leaving his position at the
40 bench.

To enable others skilled in the art to make and use my invention I will proceed to describe it by the aid of the drawing.

45 A is the frame, B the head of the barrel, and C C the stationary rollers of an ordinary felting machine.

D, D, are the two adjustable or spring rollers, which are mounted in slides d, d' fitted to work in radial grooves in the barrel
50 head.

E is a curved steel spring one end of which bears upon the end of d , and the other end upon d' , each end tending by reason of the curve given to the spring, to force the slides
55 d and d' toward the center of B without causing any side strain or binding in the bearings. The center of the spring E is attached to a slide G, which is adapted to
60 slide vertically in proper guides g attached to the frame A. A lever H is attached to the frame A at the point h , and bears upon the end of G as represented so that as the other
end h' , is raised or lowered the slide G is lowered or raised and the tension of the
65 spring E changed accordingly.

M is the bench at which the workman stands. In the standard N which supports M, pins n , or other suitable means are provided for adjusting the lever H without the
70 necessity of the workman shifting his position.

It will be seen that by simply moving the end of the lever H, the tension of the spring E is altered to any required extent, and that
75 the effect of such adjustment is always equally felt upon both the rollers D and D'.

Having now fully described my invention what I claim as new therein and desire to secure by Letters Patent is:
80

The spring E, having a curvature concentric or nearly so to the barrel B in combination with the slides d, d' and rollers D, D' and C, C, of a hat felting or sizing machine when operated by the slide G and lever H
85 or their equivalents, substantially as herein shown.

RUSSELL SMITH.

Witnesses:

CHARLES B. PICKERING,
OLIVER A. G. TODD.