

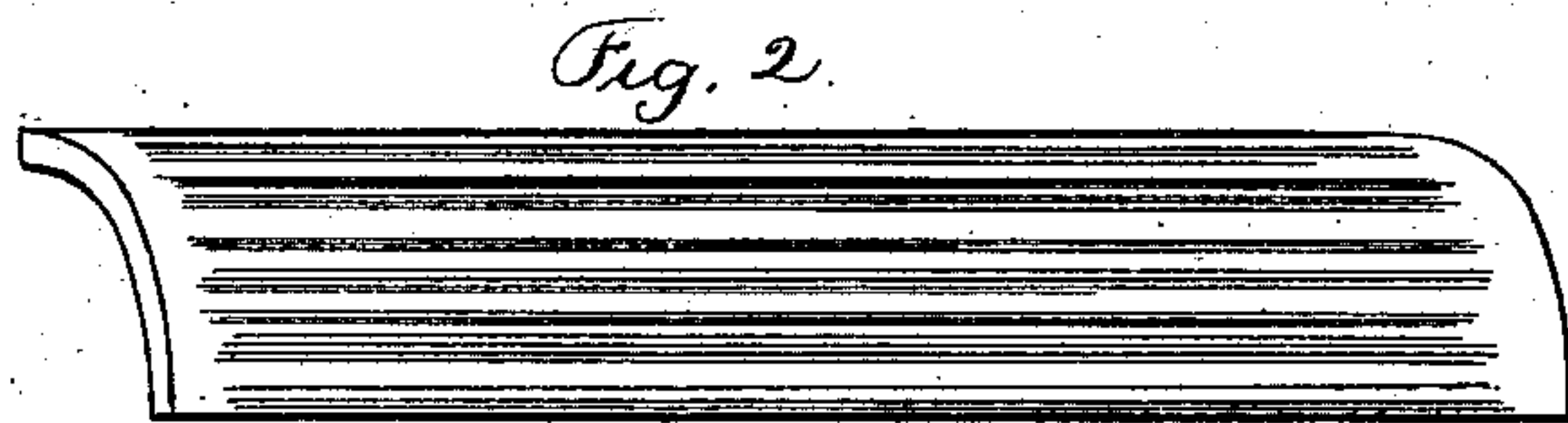
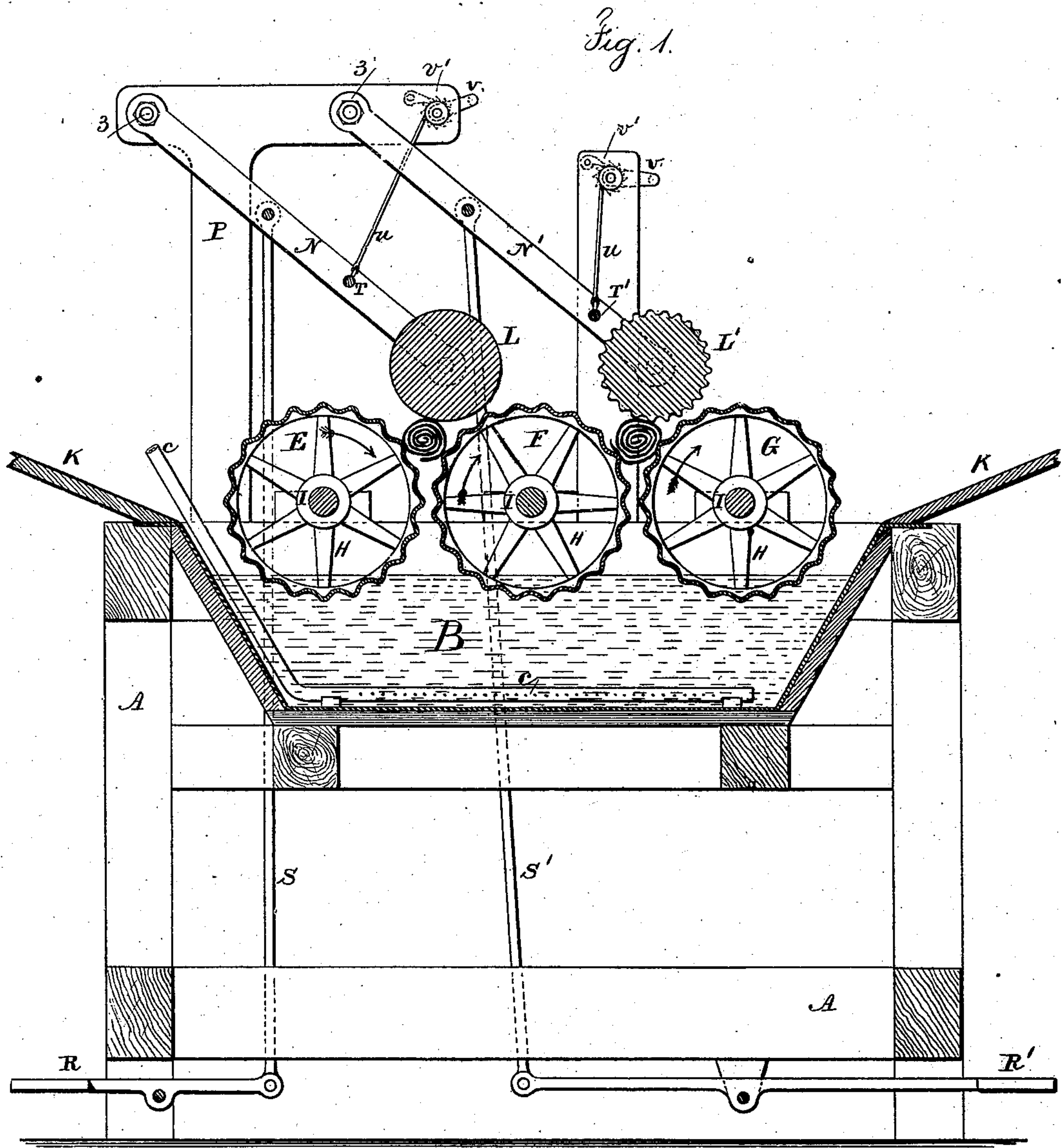
(No Model.)

J. J. PERINE.

MACHINE FOR FELTING AND SIZING HAT BODIES.

No. 292,578.

Patented Jan. 29, 1884.



Witnesses

Chas. A. Smith
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Inventor

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UNITED STATES PATENT OFFICE.

JOHN J. PERINE, OF PLAINFIELD, NEW JERSEY.

MACHINE FOR FELTING AND SIZING HAT-BODIES.

SPECIFICATION forming part of Letters Patent No. 292,578, dated January 29, 1884.

Application filed April 25, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. PERINE, of Plainfield, in the county of Union and State of New Jersey, have invented an Improvement in Machines for Felting and Sizing Hat-Bodies, of which the following is a specification.

Machines for felting or sizing hat-bodies have been made in which the hat-bodies are rolled up and placed between rollers, to which motion is given, so that the hat-bodies are revolved by and between such rollers.

In machines of this class the rollers are usually of wood, and they are liable to injury, especially when acid is used in the water.

My invention is made for improving the rollers so that they will be more durable and will not be injured by contact with the acid and hot water, also for giving the hat-bodies the required amount of scalding water during any part of the shrinking or felting process. I also provide for applying and regulating the pressure upon the hat-bodies during the progress of the work. I also provide for two men working at one machine.

In the drawings, Figure 1 is a vertical section of the machine. Fig. 2 shows one of the roller-segments in larger size.

The frame-work A supports the vat B, in which the water made use of is contained. The water is frequently acidulated with sulphuric acid, to aid in the felting operation. It is also heated, usually by steam blown into the liquid, from a perforated pipe, c.

The cylinders E F G are preferably of the same size. They may be of any suitable material; but I prefer and make each cylinder of a shell of corrugated metal, thickened and strengthened at the ends. If these cylinders are made of wood, they are liable to split and crack, and become rough by the action of the hot water and acid. If they are made of some kinds of metal—such as iron—they are injured by the action of the acid. I make use of a metal that will not be injured with sulphuric acid—such as an alloy of copper, brass, and lead. The shell is made in two or more sections, so as to be easily cast, and these sections are fastened upon the heads H, that are preferably made with arms, so as to be open. The shafts I are in journal-boxes upon the frame A, and

the vat B extends up to the top of the frame A, so that the cylinders may be partially immersed in the hot water. The water, however, may not be sufficiently deep to reach the cylinders. These cylinders E F G are geared together and all revolve in the same direction, as indicated by arrows. The power is to be applied in any desired manner. Usually it is by a chain-wheel and endless chain-belt.

The inclined tables K are provided, as usual, for the hat-bodies to be laid upon in handling the hats.

The rollers L L' are between the ends of the frames N N', and at the other ends said frames are pivoted to the standards P. These rollers L L' may be plain or corrugated. There are treadles R R' and links S S', by means of which the operators can raise the respective rollers L L'. These frames are weighted, when necessary, so that any desired pressure may be given by each roller as it rests upon the hat-bodies.

The cross-shafts T T' are provided with crank-handles V on the ends, and with cords or straps u to the respective frames, so that the operator may raise or lower the respective frames and rollers by turning such shafts, and held at any desired distance from the cylinders beneath by the ratchet-wheels and pawls v'.

The parts are constructed so that the roller L moves near to the cylinder F and the roller L' moves near to the cylinder G, the object being to prevent the ascending portions of the rollers F or G carrying the roll of hat-bodies out from between the respective cylinders. The cylinder F revolves in the direction shown; and hence, if the roller L tended to press the roll of hat-bodies against the side that has an upward movement, the roll of hat-bodies would be carried out from beneath the roller L. By pivoting the frame N at 3, the roller L moves near to the cylinder F, and the hat-bodies cannot be carried out from beneath the roller L, and said hat-bodies are pressed by the roller L mostly against the cylinder E. The roller L' acts the same way in reference to the cylinders G and F. The same effect will be produced if the journals of the rollers L L' are guided in inclined standards, so as to move in nearly the same direction as the arc described

by the frames N N' as they swing upon the pivots.

5 A single machine for one operator can be made by dispensing with the cylinder G, the roller L', and the parts carrying the latter; but by making the machine in the manner shown two operators are able to work at the same, and there is a saving effected, because less power and steam are required for
10 this double machine than would be consumed by two separate machines, and the machine costs less.

The rollers L L' are revolved by the contact of the roll of hats, and they do not require any
15 gearing to drive them. I however do not limit myself in this particular.

When in use, this improved machine is very effective, because the rollers, revolving in contact with the hot water, become heated and
20 convey up to the roll of hat-bodies the hot water, which greatly assists in giving the hats the required amount of scalding, as the water

is kept near the boiling-point during the felting, sizing, or second sizing operations.

I claim as my invention—

1. The cylinders, in a hat-felting machine, made with cast metal shells with corrugations in their surfaces parallel to their axes, said shells being attached to heads upon shafts, so as to revolve in and be heated by the water and
30 not be injured by the acid, substantially as set forth.

2. In a hat-body-felting machine, the combination, with two cylinders revolving in hot water, of a roller arranged to move sufficiently
35 close to the cylinder that tends to raise the roll of hat-bodies to prevent such hat-bodies escaping from beneath such roller, substantially as set forth.

Signed by me this 20th day of April, A. D. 1883.

Witnesses:

JOHN J. PERINE.

GEO. T. PINCKNEY,

CHAS. H. SMITH.