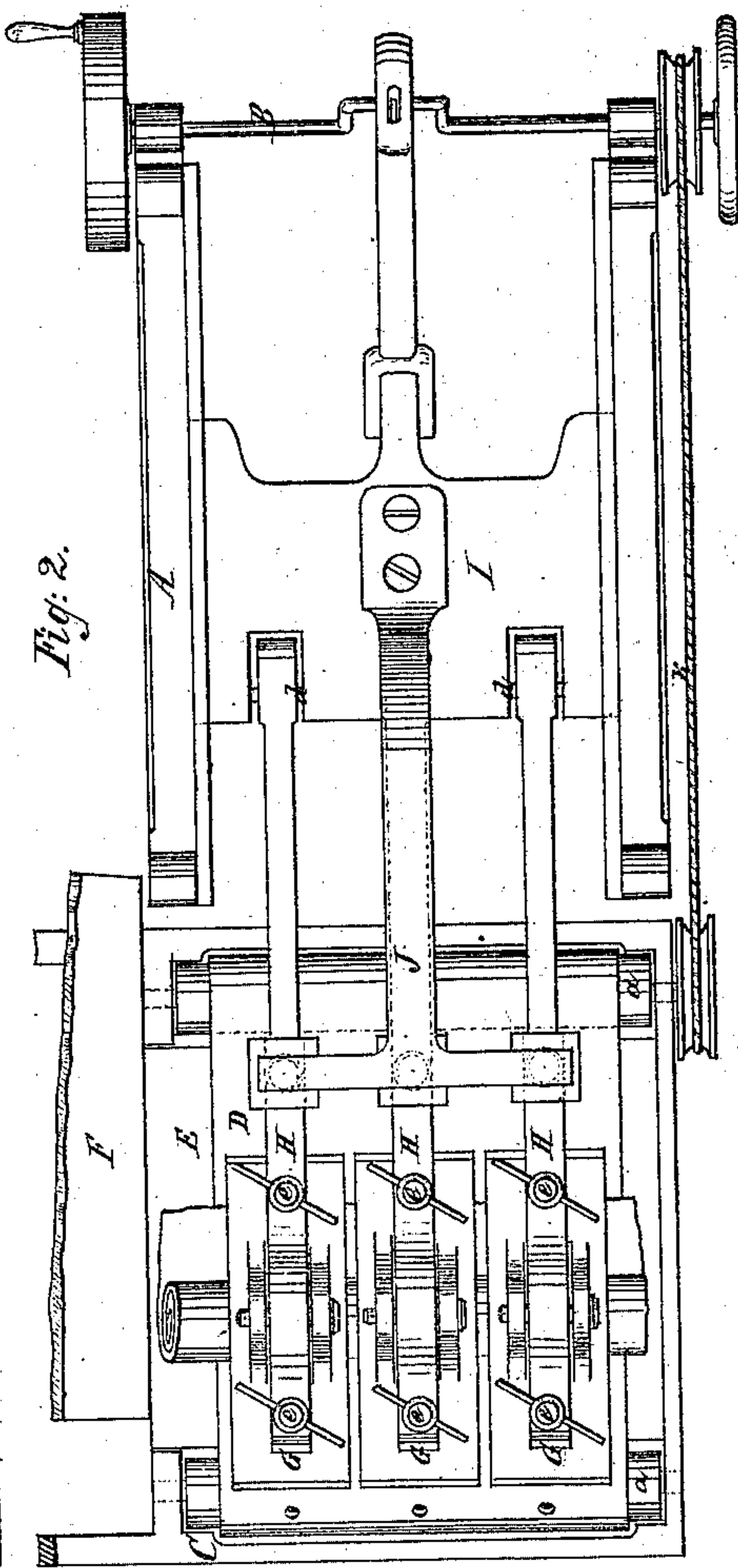
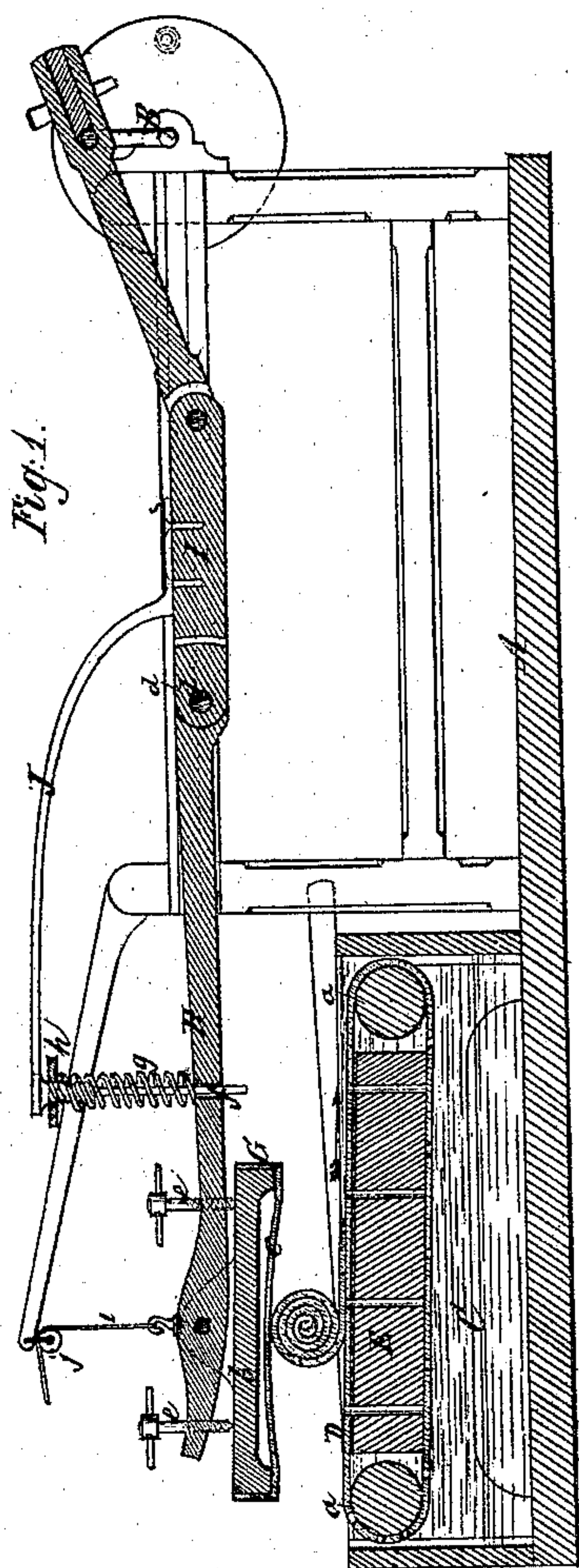


Felisse & Degen,
Felting Machine.

No. 99,700.

Patented Feb. 8, 1870



Witnesses.
C. Wahlers
R. Langenwieser

Inventors.
Aug. Felisse
Francis Degen
Per Sanford & Hauff atts

United States Patent Office.

AUGUSTUS PELISSE AND FRANCIS DEGEN, OF NEWARK, NEW JERSEY.

Letters Patent No. 99,700, dated February 8, 1870.

IMPROVEMENT IN HAT-SIZING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, AUGUSTUS PELISSE and FRANCIS DEGEN, both of Newark, in the county of Essex, and State of New Jersey, have invented a new and improved Machine for Sizing Hat-Bodies; and we do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which drawing—

Figure 1 represents a longitudinal vertical section of this invention.

Figure 2 is a plan or top view of the same.

Similar letters indicate corresponding parts.

This invention consists in the arrangement of hands provided with an elastic working surface, and hinged to arms, which receive a reciprocating motion from a suitable driving-mechanism, and which are furnished with set-screws, acting on the opposite ends of the hinged hands in such a manner that by said elastic working-surface of the hands, an action is produced similar to that of the natural hand, and, furthermore, by means of the set-screws, the inclination of the hands toward the lap-side of the roll to be acted on can be regulated to suit the condition of the roll.

With the hands is combined an endless apron, which is stretched over the table, supporting the rolls under operation, and which travels with a slow motion toward the lap-side of the roll in such a manner that said roll receives a slow motion in the direction of its lap-side, and is thereby prevented from being pushed out over the end of the supporting-table by the action of the hands.

Both the table and the endless apron supporting the roll to be acted on, are placed into a tank and perforated to allow the water contained in said tank to pass freely up to the roll under operation.

The pressure of the hands upon the rolls is regulated by springs, the tension of which can be increased or decreased at pleasure.

In the drawing—

The letter A designates a frame, made of wood or any other suitable material, and provided at one end with bearings for the driving-shaft B and at its opposite end, with a tank, C.

The sides of this tank form the bearings for two rollers, *a a*, over which is stretched an endless apron, D, by preference made of India rubber; and this apron straddles a platform or table, E, which is firmly mortised in the sides of the tank, and which forms the support for the rolls under operation.

This platform is slightly inclined, as shown in fig. 1, and both the platform and the apron are perforated

to allow a free passage for the water contained in the tank.

From one side of the tank C extends a table, F, on which the rolls are prepared, the hat-bodies to be sized being wrapped into a piece of woollen cloth or flannel in the usual manner.

One roll after the other is then placed upon the apron D, and exposed to the action of mechanical hands, G, the lap-side of each roll being turned towards the driving-shaft B, as shown in the drawing.

The mechanical hands G are constructed of frames *b*, of wood or any other suitable material, over which is stretched a strip, *c*, of India rubber or other elastic material, so as to produce an elastic working-surface, and each of the hands is pivoted to an arm, H, connected by a pivot, *d*, to a cross-head, I, that receives a reciprocating motion from the driving-shaft. Each of these arms is provided with two set-screws, *e*, which bear on the ends of the hands G, so that said hands can be set to any desired inclination, and from the cross-head I extends a bracket, J, which carries pins, *f*, one to each of the arms, said pins forming the guides for spiral springs, *g*, which bear upon the arms and depress the hands upon the roll to be acted on.

The tension of these springs can be regulated by means of nuts, *h*, so that the pressure of the hands upon the rolls can be increased or diminished, as may be required.

From each of the arms extends a rope, *i*, over a pulley, *j*, secured in the ceiling over-head, or in brackets extending from the main frame, so that by pulling said ropes the hands can be raised from the platform E, to facilitate the operation of introducing or removing the rolls.

One of the rollers *a*, which carry the apron D, receives a slow revolving motion by means of a belt, *k*, best seen in fig. 2.

At the beginning of the operation, the hands G are set parallel, or nearly so, toward the platform E, but, as the operation progresses, their inner ends are gradually depressed, so that said hands incline toward the lap-side of the rolls, it being well known that the roll acted on by the hands becomes tighter and tighter the greater the inclination of the hands toward the lap-side, while, if the hands are made to bear on the closed side of the roll, said roll becomes unrolled. But as the hands are inclined toward the lap-side of the roll, they assume a tendency to push said roll out over the end of the supporting platform, and this tendency is counteracted by the slow motion of the apron in a direction opposite to that in which the hands tend, to push the roll.

As the operation progresses, the roll becomes smaller

and smaller, and the tension of the springs *g* is gradually increased until the operation is finished.

By the elastic working-surfaces of our mechanical hands their action becomes similar to that of the natural hands in sizing hat-bodies.

What we claim as new, and desire to secure by Letters Patent, is—

1. The arrangement of elastic working-surfaces on the hands *G*, substantially as shown and described.

2. The set-screws *e*, in the arms *H*, in combination with the hands *G*, pivoted to said arms, substantially as set forth.

3. The travelling apron *D*, in combination with the platform *E* and with the hands *G*, substantially as described.

4. The springs *g*, in combination with the arms *H*, hands *G*, and platform *E*, substantially as set forth.

Witness our hands this 30th day of December, 1869.

FRANCIS DEGEN.
A. PELISSE.

Witnesses:

HUBERT G. HULL,
E. F. KASTENHUBER.