

P. Emmons.
Felting Machine.

No. 9672.

Patented April 19 1853.

Fig. 3.

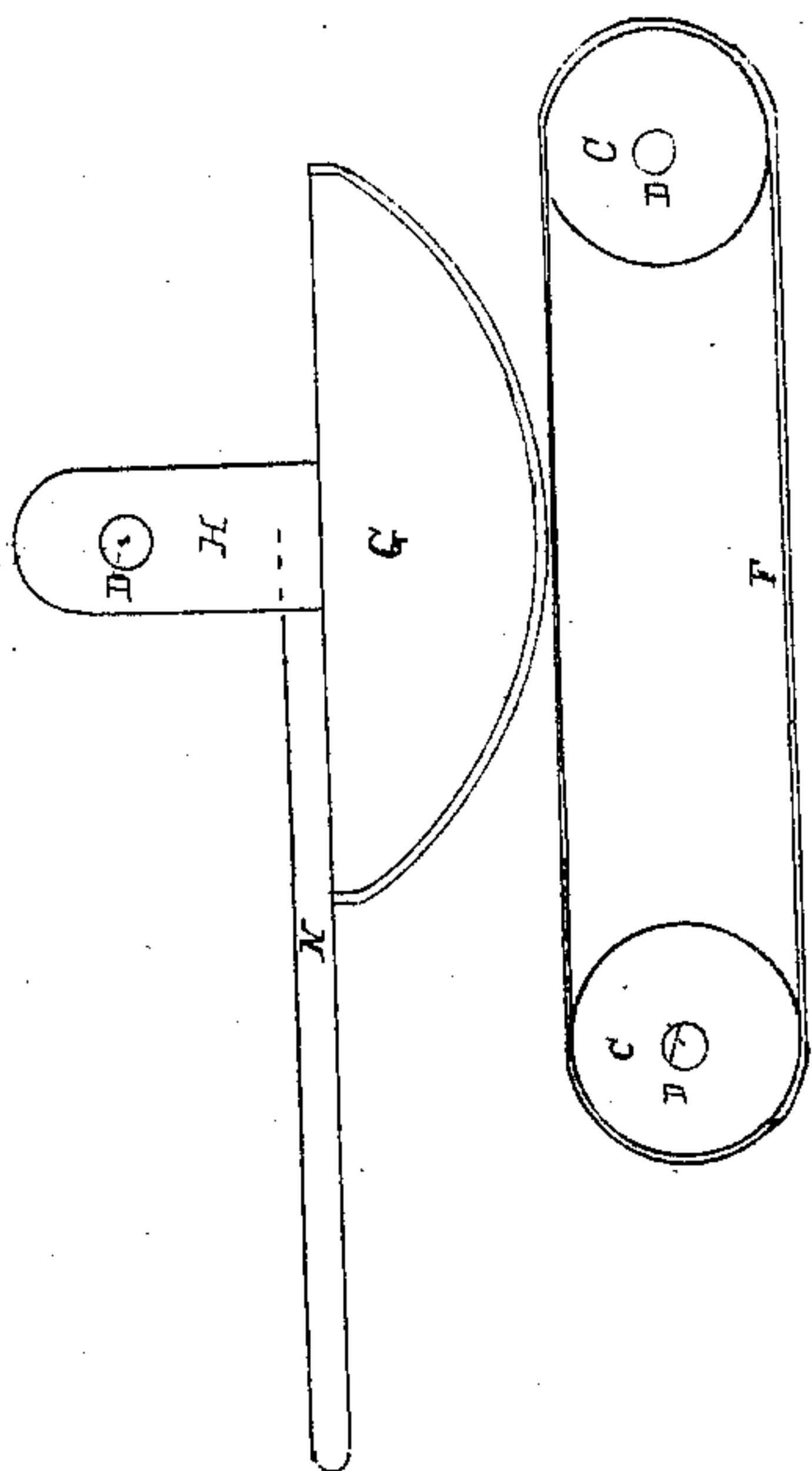


Fig. 1.

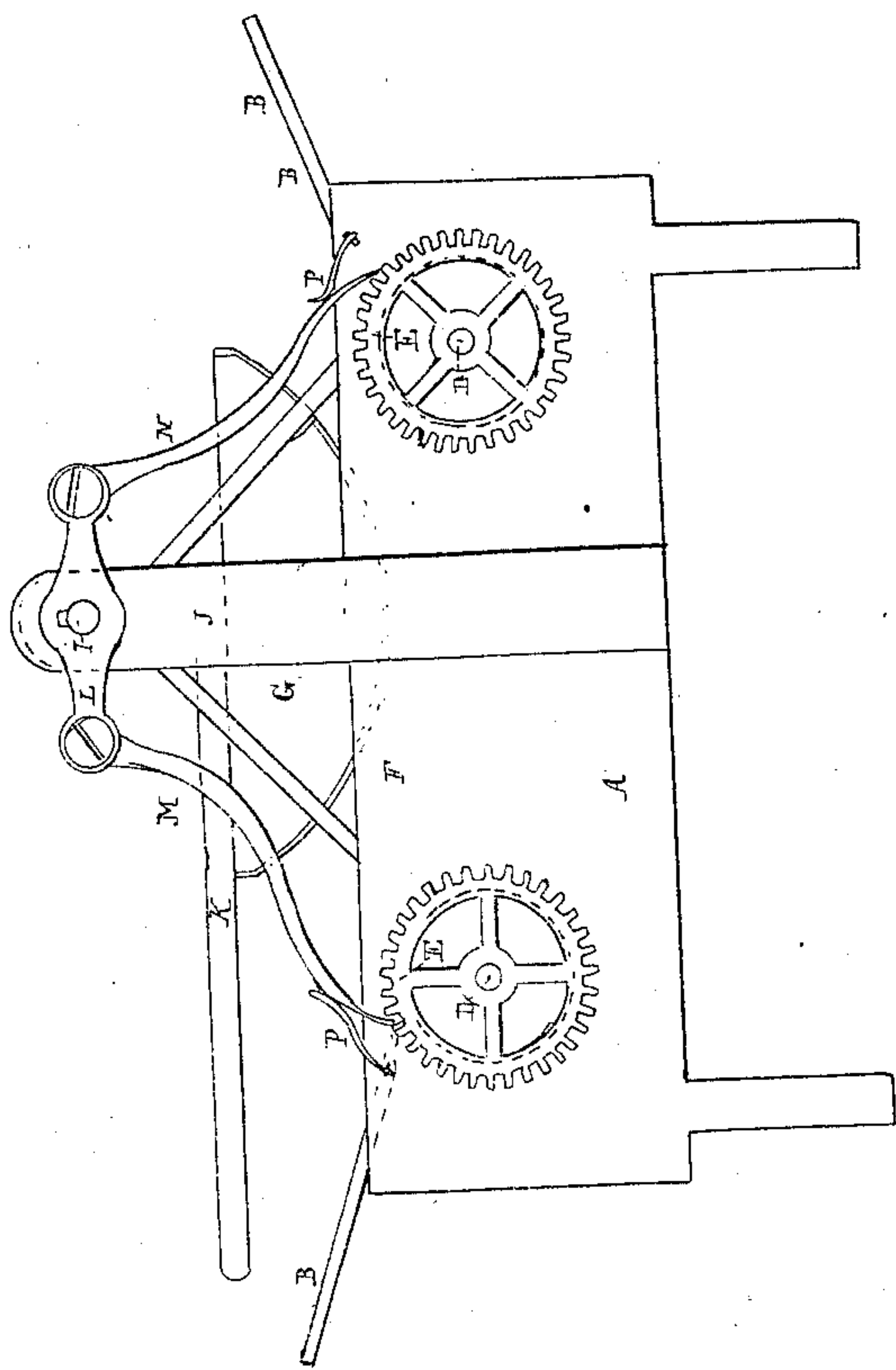
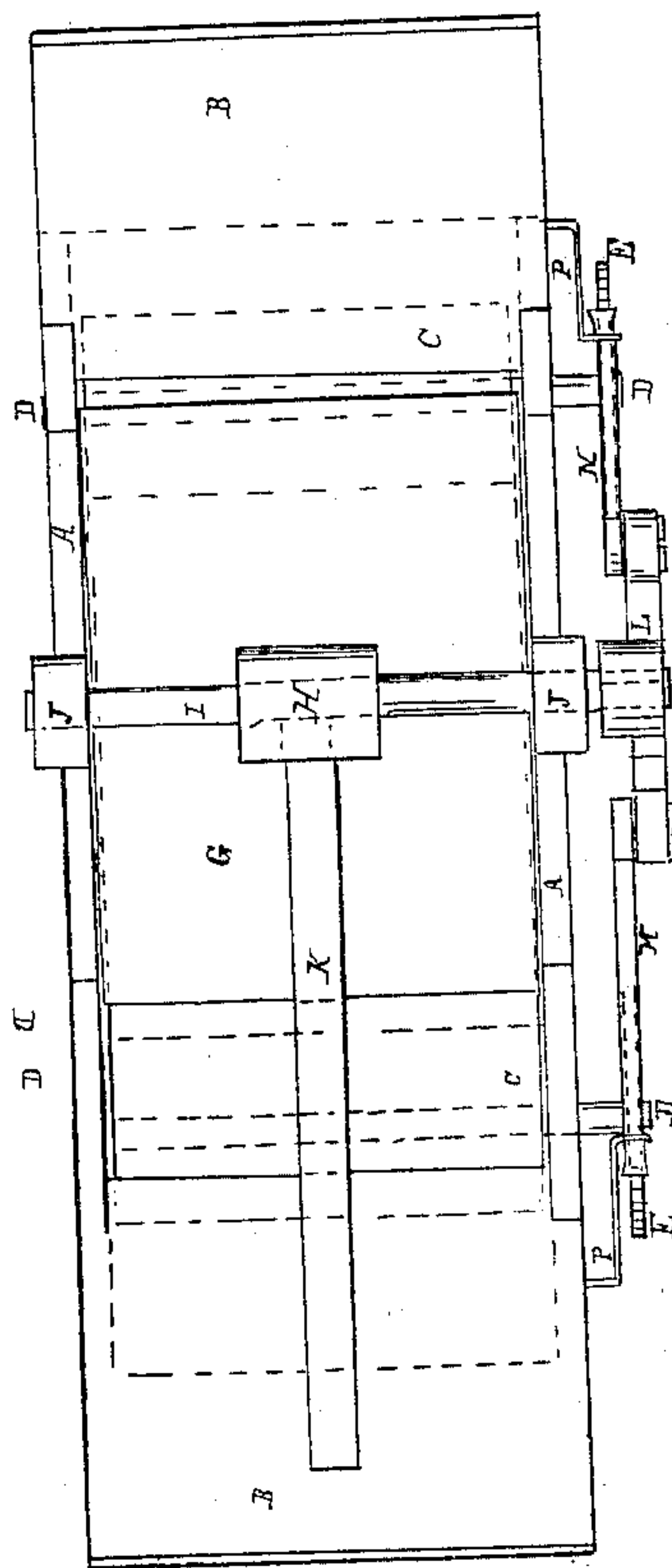


Fig. 2.



UNITED STATES PATENT OFFICE.

PHINEAS EMMONS, OF NEW YORK, N. Y.

MACHINE FOR PLANKING HAT-BODIES.

Specification forming part of Letters Patent No. 9,672, dated April 19, 1853; Reissued May 27, 1856, No. 369.

To all whom it may concern.

Be it known that I, PHINEAS EMMONS, of the city, county, and State of New York, have invented a new and useful Machine
5 for Shrinking or Sizing Hat-Bodies; and I do hereby declare the following to be a full description of the same.

The nature of my invention consists in the use of a box or trough in which is arranged
10 two rollers, over which an elastic endless apron passes, and combining the same with a circular faced rubber arranged on a rock shaft, so as to produce a rolling and pressing of the hat body as it passes through the
15 machine, in consequence of a revolving and vibratory motion being given to the endless apron by pawls working from a cross head on the rock shaft and operating ratchet wheels on the carrying rollers of the endless apron,
20 thereby producing an effect analogous to that obtained by shrinking or sizing hat bodies by hand. But to describe my invention more particularly I will refer to the accompanying drawings, forming a part of
25 this schedule, the same letters of reference wherever they occur referring to the same parts.

Figure 1, is a side elevation of the machine, showing by the red dotted lines the
30 position of the elastic endless apron. Fig. 2, is a plan view of the machine. Fig. 3, is a detached sectional view of the elastic endless apron and rollers, and the circular faced presser.

35 Letter A is the box or trough intended to be made water tight, and by means of steam pipes or other suitable contrivance for heating water, to heat the water contained in the box, for shrinking purposes, at the ends
40 of the trough are placed two feed boards B, B, and in it, crosswise are placed two carrying rollers C, C, supported on gudgeons D, D and D, D, which project through the sides of the trough, and having at one
45 side on the ends of the gudgeons ratchet wheels E and E. Around these two carrying rollers is an elastic endless apron F, (represented by red dotted lines in Fig. 1). This apron may be made of any suitable
50 material for the purposes required, but is intended to be firm enough under the pressure of the curved face presser G, to

be in constant contact with it throughout the operation of rolling and pressing the hat body and working it through the ma- 55
chine. This curved presser is supported by an arm or post H, secured to the upper side of it, and attached to a rock shaft I, supported in two standards J, J, at opposite sides of the machine. Connected with the
60 upper side of the presser, is an arm or lever K, for the purpose of working the presser, and at the same time communicating motion to the rock shaft I, and through the double acting crosshead L, and pawls M and N, and
65 ratchet wheel, E, E on the ends of the carrying rollers C, C, a vibrating and forward rotatory motion to the elastic endless apron.

P, P, are springs for holding the pawls down upon the teeth of the ratchet wheels. 70

The operation of the pawls in giving the vibratory and forward rotatory motion to the endless apron is produced by making one of the pawls shorter than the other and one arm of the cross head longer, so that more
75 teeth are taken up in the forward motion than in the back motion, the effect of the operation being to produce precisely the same handling or working of the hat body in passing through the machine, as is pro- 80
duced by the hand operation of "planking" or "sizing," technically hat bodies, and at the same time by the elastic nature of the apron giving the requisite amount of pres- 85
sure, by the constant vibrating rubbing or rolling action of the presser in consequence of working the lever or arm K. This rocking motion may be given by hand, or when
90 a number of the machines are operated together in a worm by a crank motion from machinery driven by power of steam.

The precise form of the rubber or presser may be varied to produce the same effects, by an analogous motion working on an elastic endless apron, but as the variation in
95 form as well as of motion is obvious to any practical man I do not deem it material to mention them, though do not disclaim my right to any of the said variations so long as the operations are analogous and substan- 100
tially the same.

Having now described my invention I will proceed to state what I claim and desire to secure by Letters Patent.

What I claim is—

The combination of a reciprocating rotary rubber or presser with an endless elastic apron, so that by vibrating said rubber a
5 reciprocating, intermittent differential movement is given to the apron, thereby operating on both sides of the body, and working

it forward at the same time, substantially in mode of construction and manner of operation as hereinbefore set forth.

PHINEAS EMMONS.

Witnesses:

CHARLES L. BARRITT,

A. SPENCER.

[FIRST PRINTED 1913.]