J. KEATS.

FELTING-MACHINES.

No. 193,712. Patented July 31, 1877.

Fig. 2.

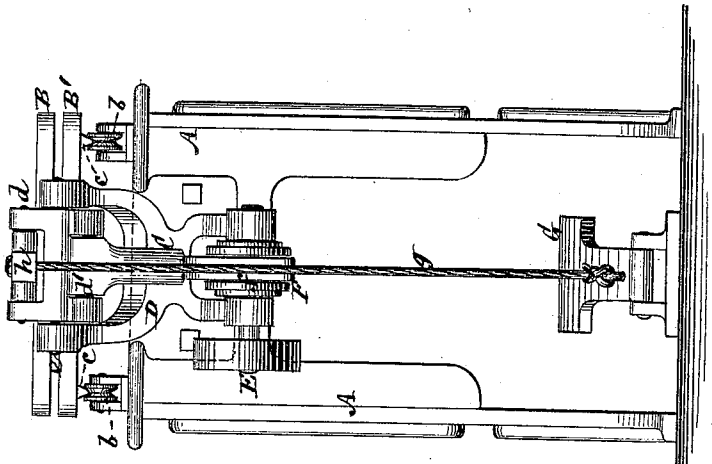
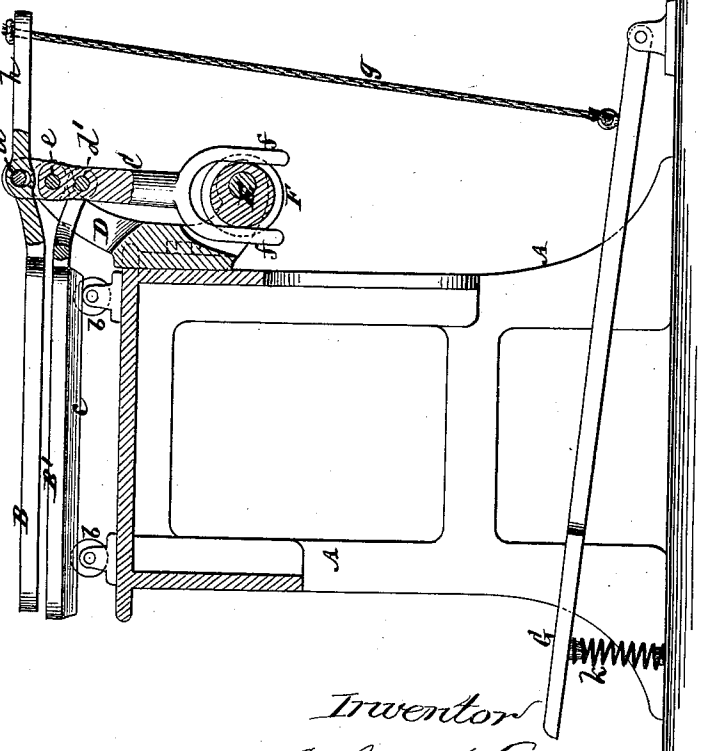


Fig. 1.



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UNITED STATES PATENT OFFICE.

JOHN KEATS, OF WOOD GREEN, ENGLAND.

IMPROVEMENT IN FELTING-MACHINES.

Specification forming part of Letters Patent No. 193,712, dated July 31, 1877; application filed June 18, 1877.

To all whom it may concern:

Be it known that I, JOHN KEATS, of Wood Green, in the county of Middlesex, England, have invented certain new and useful Improvements in Hardening-Machines for Felting Purposes, of which the following is a description, reference being had to the accompanying drawing, forming part of this specification.

This invention relates to that class of machines known as "jiggers," in which the felted fabric is hardened by the rapid vibratory or reciprocating motion of platens or rubbing devices having the fabric to be hardened placed between them.

The invention consists in certain novel combinations of such platens and the mechanism for operating them, whereby I am enabled to produce an extremely simple, convenient, and efficient hardening-machine for felting various bodies or articles.

Figure 1 represents a mainly sectional side view of a hardening-machine constructed in accordance with my invention, and Fig. 2 a rear-end view of the same.

A is the main frame, which may be of any suitable construction to carry the working parts, but which generally forms a table or stand, above which the vibrating platens B B′ are arranged, and to the back of which the mechanism for vibrating said platens is attached. These platens may have their opposed operating-faces composed of plane surfaces or furnished with a system of rollers, such as are common in other hardening-machines. The lower one, B′, of said platens is represented as supported in a horizontal position, and guided in its reciprocating motion by grooved rollers *b* on the top of the main frame and ribs or rails *c* arranged on the under side of said platen, and constructed to fit the grooves in the rollers. The other or upper platen, B, is free to rise and fall, or to open and close at its front end with a jaw-like action in relation to the lower platen. Both of said platens are pivoted at their rear ends *d d′* to an upright lever, C, on reverse sides of the pivot or fulcrum *e* of said lever, so that as the latter is worked backward and forward the two platens B B′ have a reciprocating motion given to them simultaneously in reverse directions, for the purpose of rubbing and hardening the felted fabric lying in between said platens.

The pivot or fulcrum *e* of the lever C is carried by a bracket, D, which is secured to the back of the main frame. This bracket is also constructed to form bearings for a rotating driving-shaft, E, which has secured on it an eccentric, F, arranged to rotate within a forked or yoke-framed lower extremity, *f*, of the lever C, whereby the requisite rocking motion is communicated to said lever.

G is a treadle, pivoted to a suitable support in rear of the main frame A, and extending in front of the latter, so as to be readily accessible to the operator, who stands in front of the machine. This treadle is connected by a rod, cord, or wire, *g*, with a tail-piece, *h*, which is formed on or attached to the upper platen B, and which extends back beyond the pivot *d* of the said platen, and the said treadle may be kept raised by a spring, *k*, in front, when not depressed by the foot of the operator. By means of this treadle the operator is enabled to lift or open the upper platen with a movement on the pivot *d*, which connects it with the lever C, so that it has a jaw-like action relatively to the lower one, for the purpose of introducing and removing the goods.

The hole provided in the upper platen B for its pivot *d* is represented as elongated vertically, to permit the said platen to rise and fall on the said pivot in such manner as to enable the said platen to adjust itself vertically to keep itself as nearly as desirable parallel with the lower platen, with different thicknesses of the goods being hardened between the two platens; but instead of the hole in the platen B being thus elongated, the hole provided in the lever C for said pivot *d* may be similarly elongated to provide for the vertical self-adjustment of said platen.

The platens or rubbing devices, having relatively to each other a jaw-like arrangement and action, opening in front of the machine, where the operator stands with his foot on the treadle, and where there is nothing in the way of the operator, allow of the ready insertion or removal and management of the goods without interference by the driving mechan-

ism, which is in rear of the machine and out of the way of the operator.

I claim—

1. The combination of the lower platen B′ and lever C with the upper platen B, connected to said lever by a pivot, *d*, which provides for the rise and fall of the said platen B with a jaw-like action, and also provides for the vertical self-adjustment of the said platen to keep itself parallel with the lower platen B′, substantially as herein described.

2. The combination of the two platens B B′, the lever C, with which the said platens are respectively connected, as herein described, and the eccentric F, operating within the yoke or fork of said lever, all substantially as herein set forth.

3. The combination of the platens B B′, the lever C, the eccentric F, the shaft E, and the treadle G, connected with the upper platen in rear of the lever C, the whole arranged substantially as described.

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Witnesses:

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