

*Hadley & Johnson,
Cotton Combing Machine.*

No 91,229.

Patented June 15, 1869.

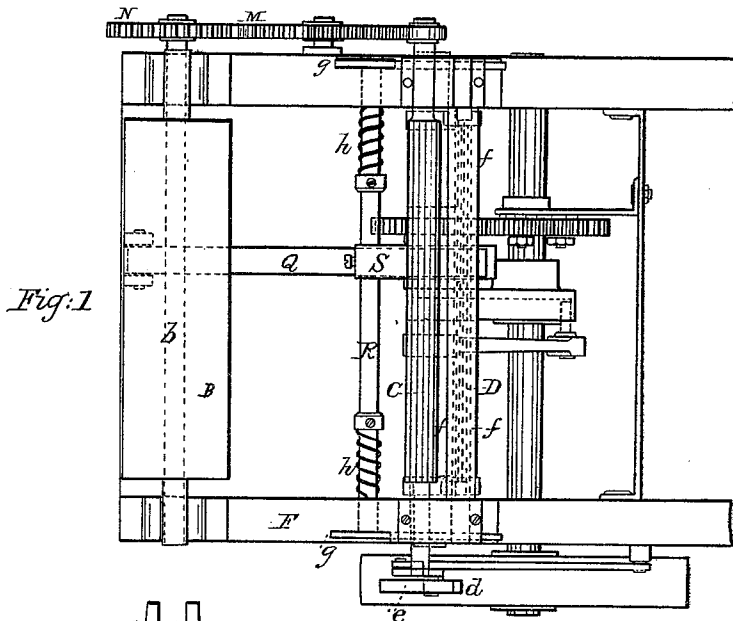


Fig: 1

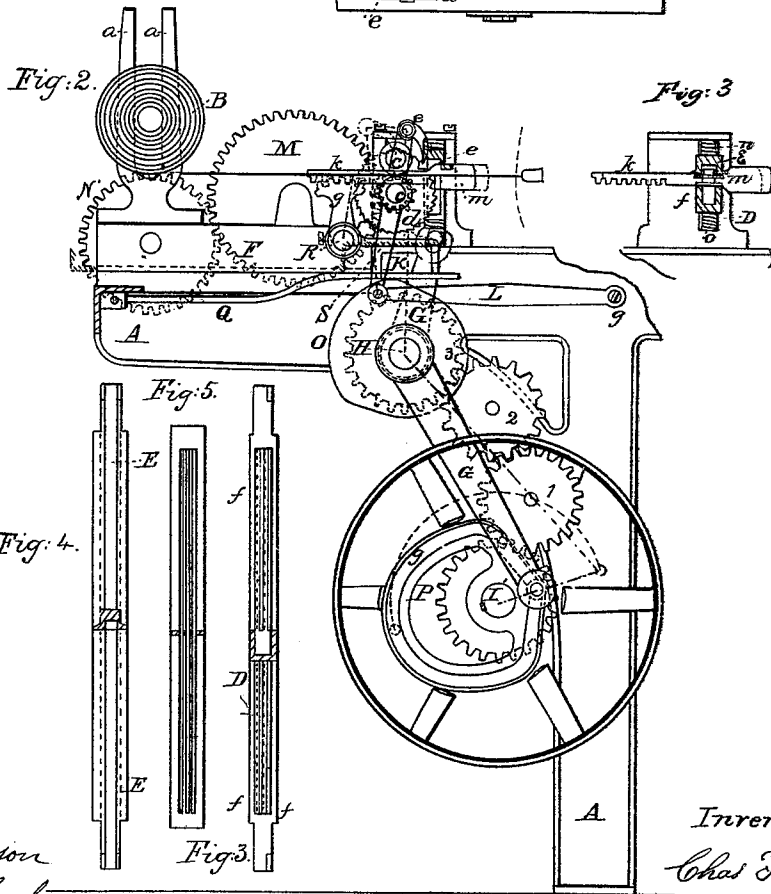


Fig: 2.

Fig: 3

Fig: 4.

Fig: 5.

*Witnesses.
Geo. D. Robinson
W. L. Blackmer.*

*Inventor.
Chas. F. Hadley
Elisha Johnson.*

United States Patent Office.

CHARLES F. HADLEY, OF CHICOPEE, MASSACHUSETTS, AND ELISHA JOHNSON, OF WETHERSFIELD, CONNECTICUT.

Letters Patent No. 91,229, dated June 15, 1869.

IMPROVEMENT IN FEEDING-DEVICE FOR MACHINES FOR COMBING COTTON, &c.²

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, CHARLES F. HADLEY, of Chicopee, in the county of Hampden, and State of Massachusetts, and ELISHA JOHNSON, of Wethersfield, in the county of Hartford, and State of Connecticut, have invented a new and useful Improvement in Machines for Combing Cotton, and other fibrous material; and we do hereby declare that the following specification, taken in connection with the drawings, making a part of the same, is a full, clear, and exact description thereof.

Figure 1 is a top view.

Figure 2 is a side elevation.

Figures 3, 4, 5, and 6, are detailed parts, to be referred to.

The drawings do not profess to show a complete machine for combing cotton, but only the particular part in which the improvement is embodied.

It is to be understood, that there are required to be added suitable cylinders, furnished with nipping-jaws, which shall have the capacity, as they revolve with an intermittent motion, to transfer the tuft of cotton from the jaws of one cylinder, to the jaws of the next cylinder in the series, so that it will first be held by one end in the jaws of one, and then by the other end in the jaws of the next cylinder, suitable revolving combing-cylinders being brought to act upon the tuft, while held by each of the cylinders, substantially as described in the Letters Patent granted to Cullen Whipple and Rufus T. Stafford, dated March 4, 1862, to which, for a minute description of the manner in which such cylinders act, to transfer the material from one to the other throughout the series, and the action of the combing-cylinders combined therewith, reference is to be had.

Instead of the said machine of Whipple and Stafford, any other preferred combing-machine may be employed.

The present improvement relates to the apparatus, and its combinations with the combing-instrumentalities, by which the lap of cotton, or other material to be acted upon, is presented to the machinery, which is to take a tuft therefrom for combing.

In the drawings—

A represents the end of the frame of the machine at which the material is introduced.

B is a roll of lapping to be combed, secured upon a beam, which is supported laterally by the usual standards *a a*.

The surface of the roll should rest upon a roller, *b*, fig. 1, to which, at proper times, a rotary movement is given, to assist in unrolling the lap, as hereafter explained.

O C are two fluted feeding-rollers, of ordinary construction, to the lower one of which an intermittent movement is given, by means of a ratchet, *d*, and pawl E, fig. 2.

In front of such feeding-rollers, and parallel with them, is arranged a number of gill-combs, D, figs. 1 and 6, in combination with which are compressor-bars, formed by the edges *f* of the case in which such gill-combs are placed, and the edge of a channelled bar, E, located above the same. (See also fig. 4.)

The roll of lapping, supported as above described, and also the feeding-rollers O C, gill-combs, and compressor-bars, last mentioned, are mounted upon a carriage-frame, F, which is fitted to slide back and forth upon the top of the frame A of the machine, whereby such roll of lapping, and the sheet of the same given off by the feeding-rollers, is moved alternately toward and away from the machinery, which is to take a tuft from such sheet, for the purpose of combing the same.

The backward and forward movement of the carriage F, is produced by means of the long arm G, operated by the grooved cam J, on the main shaft I'.

The backward movement of the carriage causes the lever K, pivoted to the link L, hinged to the stud-pin *g*, to vibrate, its fulcrum being the axle of the ratchet-plate *d*; and, consequently, the pawl E, pivoted to the top of the lever K, will ride over the teeth of the ratchet.

The forward movement of the carriage will, of necessity, cause the pawl to work the ratchet-plate, and thereby set the feeding-rollers O C in motion.

The shaft of the lower feeding-roller is furnished with a toothed wheel, which, through the intermediate gear-wheel M, gives movement to the toothed wheel N, keyed to the shaft of the roller *b*, fig. 1, upon which the roll of lapping rests, and thus, contemporaneously with the rotation of the feeding-rollers O C, the roll of lapping is unwound.

The purpose of the cam O, is to operate the compressor-bars E E, which have been mentioned.

This cam is fitted to revolve upon the shaft H, and motion is communicated to it from a driving-gear, P, on the main shaft, by means of the train of gear-wheels 1, 2, 3.

Upon the face of the cam O, a bar, Q, hinged, at its rear end, to the frame, rides. Its forward end rises and falls under the control of the cam O.

Two toothed sections, *g*, one upon each side of the machine, also obtain a vibratory movement from the cam O, such sections being keyed upon the rocker-shaft R, figs. 1 and 2, which shaft is rocked by the cam O, in one direction, through the lever S, whose bent end rides upon the bar Q, and in the other direction by the reactionary force of springs *h*.

The toothed sections *g* engage with racks *k*, shown in detail at fig. 3.

These racks work wedges *m*, arranged to force apart, when introduced between them, the case containing the gill-comb D, and the bar E above the same.

Springs *n o* cause the compressor-bars, formed by the edges of the comb-case D, and the edges of the bar

E E, to approach each other, without, however, closing tightly upon the material, when the wedges are withdrawn.

In order to understand the operation of the whole apparatus, let it be supposed that the carriage F is moving forward.

The cam O is so arranged, that the compressor-bars will be wide open, so that the rollers C C can feed the material.

A gridiron-plate, fig. 5, is located above the gill-combs, upon which plate the material is supported as it is fed along.

When the carriage has reached the end of its forward movement, the cam O being properly timed for that purpose, the compressor-bars approach each other, and the gill-teeth are thrust through the material.

The projecting tuft of the material is now caught by the nipping-jaws of the revolving cylinders, which form part of the combing-machinery before referred to, and at the same instant the carriage F, the lap being somewhat compressed, commences to move backward, and, of necessity, a tuft is drawn out from the lap, straightened by the combs, and retained by the nipping-jaws.

The great advantage which the above-described improvement seeks to embody, is that of drawing out the several tufts to be combed, successively, from a lap, in a line coincident with the line in which the fibres lie, in order that the full length of the staple may be preserved unbroken.

Without limiting ourselves to the special form and arrangement of the several parts of the machinery, as described,

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

1. The independent lap-carrying sliding table F, operated substantially as described, and carrying the roll of lapping to be fed to the jaws of a jaw combing-machine, in the manner and for the purposes set forth.

2. In combination with the lap-carrying sliding table F, the feeding-rollers C C, the gill-comb D, and compressor-bars E, substantially as before set forth.

OHAS F. HADLEY.
ELISHA JOHNSON.

Witnesses:

GEO. D. ROBINSON,
W. L. BLACKMER.