

G. S. HARWOOD.

Feeding Mechanism for Carding-Machines.

No. 159,923.

Patented Feb. 16, 1875.

Fig. 1.

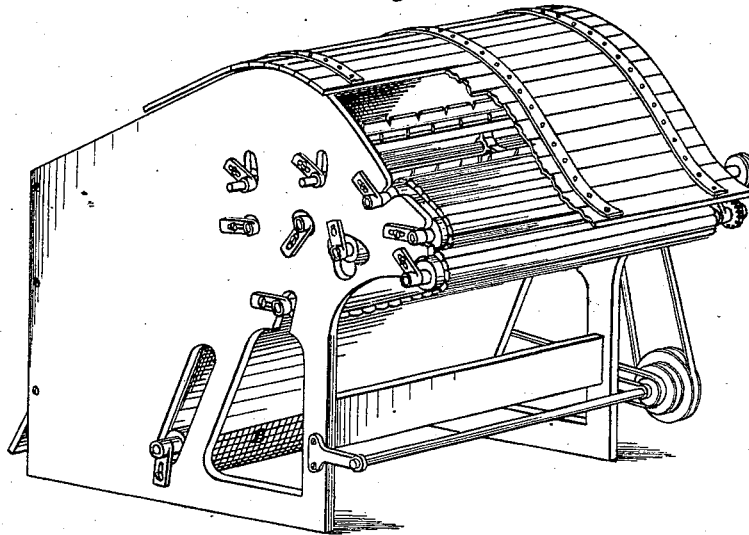


Fig. 2.

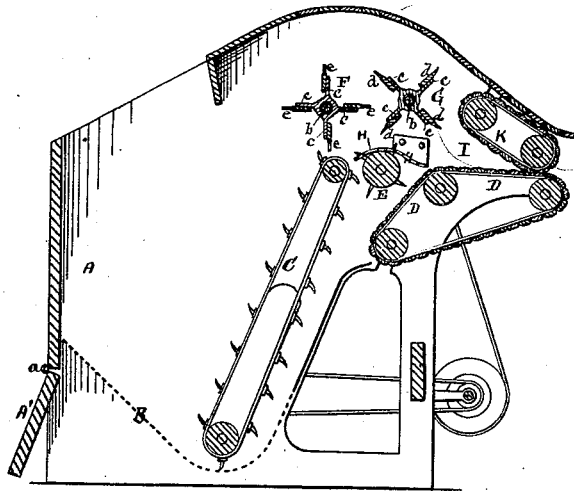
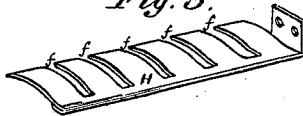


Fig. 3.



Witnesses.

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GEORGE S. HARWOOD, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN FEEDING MECHANISMS FOR CARDING-MACHINES.

Specification forming part of Letters Patent No. 159,923, dated February 16, 1875; application filed December 28, 1874.

To all whom it may concern:

Be it known that I, GEORGE S. HARWOOD, of Boston, Massachusetts, have invented certain new and useful Improvements in Feeding-Machines for Carding or other Preparing Machinery, of which the following is a specification:

My invention relates to the method of, and apparatus for, feeding wool or other fibrous substances to carding or other preparing machinery for which Letters Patent were issued to Jean Sebastien Bolette, August 23, 1864, numbered 43,959. The main object I have in view is to secure a more even feed than is possible by the Bolette machine as formerly made.

The nature of my improvements, and the manner in which the same are or may be carried into effect, will be understood by reference to the accompanying drawing, in which—

Figure 1 is a perspective view of machinery embodying my improvements. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 will be hereinafter referred to.

To those skilled in the art to which my invention pertains the structure and operation of the Bolette machine are well known. I shall therefore confine my specification to a description of the improvements made by me.

My receiving-box A is substantially the same as that of Bolette, except that at the point *a* in the case a door, A', is hinged, which opens from the floor, as shown in my drawings, for the purpose of more readily removing from under the machine any dirt or dust which may have fallen through the wire-gauze onto the floor. For the bottom of my receiving-box I use a sheet of wire-gauze or wire-netting, B, in order that, as the wool is turned over or shaken by the operation of the machine, any dust or foreign substance may fall through the netting to the floor, and thus be easily removed through the door A' in front of the machine.

In the Bolette machine the lifting-face of the spiked apron C is usually run vertically—that is, at right angles to the floor on which the machine rests. It has, however, occasionally been run at an acute angle to the floor, as shown in the patent of Bolette; but in either of these positions there is a tendency for this lifting spiked apron to carry forward to the card, in the first instance, too large a proportion of the

longer fibers from the stock in the receiving-box, because the shoddy or very short fiber is apt to fall from the hooks. To obviate this difficulty I run the lifting-face of the apron C at an obtuse angle to the receiving-box of the machine, which I find to be effective for the purpose. For the more perfect preparation of the stock, I place between the upper end of the lifting-apron C and the lower feed-apron D a spiked roll, E, so that as the wool passes between this spiked roll E and the spiked fan G it may be thoroughly opened and prepared for the carding-machine.

In operating the Bolette machine I have found the long fibers of wool are liable to wind round the spiked rolls and cylinders used in that machine, and also round the flat blades or paddles sometimes used; and I therefore, to prevent this winding, use beaters of a very different construction, as follows: To a central shaft, *b*, I attach branching arms or spikes *c*, as they are called; and to the end of these arms, in the spiked fan G, I fasten wings or strips of wood or metal armed with teeth, as at *d*, and those of the fan-beater F I arm with leather or other yielding substance, as at *e*. In the rapid revolution of "workers" thus constructed a current of air will continually enter at each end of each worker, and be thrown off from the circumference thereof, and thus prevent the accumulation of the fibers referred to.

To guard against any winding of the stock round the spiked roll E, as well as to prevent as far as possible any of the fibers falling down between the spiked apron C and the slat apron D, I provide a sheet of metal, H, (shown detached in Fig. 3,) which rests upon the roller E, and is provided with slots *f*, through which the spikes or teeth of the roller E protrude, so that in the revolution of the roll any fibers adhering to any of the spikes shall be cleared off by the shield H.

In the Bolette machine the throat or packing-chamber I is formed below by the feed-apron D, on which the wool is thrown, and above by a sheet of iron, which, being stationary, causes considerable friction. It thus retards the progress of the wool, holds back the feed, and makes it uneven. To obviate this difficulty I use an upper moving apron, K, which, with the lower apron D, forms the

packing-chamber I. The upper and lower surfaces of this packing-chamber being thus continually in motion, the stock is carried forward uniformly. These aprons are both adjustable, so that by lifting or depressing either of them I can regulate the size of my packing-chamber as I desire, and thus control the quantity of wool in said chamber.

The operation of my machine is as follows: The fibrous material to be fed to the carding or preparing machine is thrown into the box A, lifted therefrom by the spiked apron C, cleared from said apron by the fan-beater F, and carried forward between the spiked fan G and the spiked roll E, into the packing-chamber I.

By the rapid revolution of the fan-beater F, and of the spiked fan G, the packing-chamber is kept continually filled, and any surplus is blown over and returned to the receiving-box A, thus securing the ends desired.

The slotted shield H may be applied not only to the spiked roller E, but to any other spiked worker in the machinery.

Having described my invention, and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is as follows:

1. The receiving-box, having a wire-gauze or other perforate bottom, in combination with the case and door in the same, substantially as and for the purposes set forth.

2. In machinery of the kind herein referred to, the combination of a spiked worker and a slotted shield applied to said worker, in the position and to operate substantially as shown and described.

3. The packing-chamber, having its top and bottom formed of moving surfaces, which are adjustable to regulate the size of chamber, substantially as set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

GEO. S. HARWOOD.

Witnesses:

J. A. NOYES,
R. B. BROWN.