

(No Model.)

S. SHOEFELT & J. MAYOR.
SCREEN FOR CARDING MACHINES.

No. 461,595.

Patented Oct. 20, 1891.

Fig. 1.

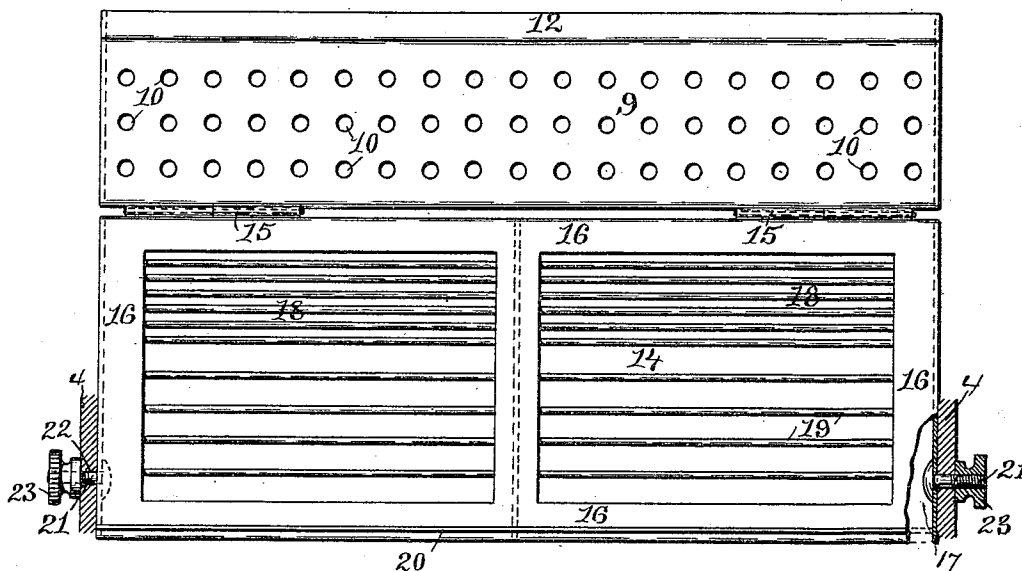


Fig. 2.

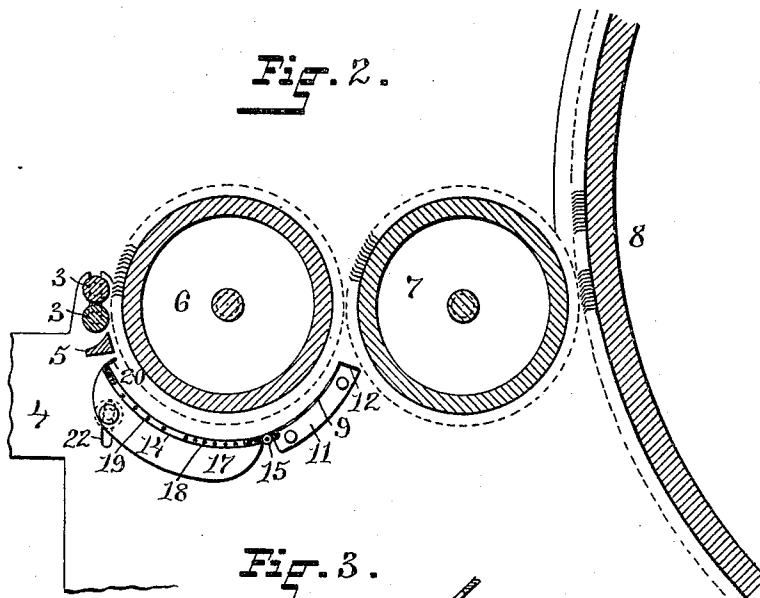
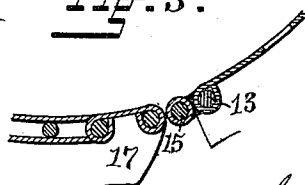


Fig. 3.



WITNESSES:

Chas. H. Luther Jr.
W. F. Bligh.

INVENTORS.

Samuel Shoefelt and
Joseph Mayor
By Joseph B. Miller & Co.
Attys

UNITED STATES PATENT OFFICE.

SAMUEL SHOE FELT AND JOSEPH MAYOR, OF CORNWALL, ONTARIO, CANADA.

SCREEN FOR CARDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 461,595, dated October 20, 1891.

Application filed March 10, 1891. Serial No. 384,426. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL SHOE FELT and JOSEPH MAYOR, both of Cornwall, in the county of Stormont, Province of Ontario, Canada, have invented a new and useful Improvement in Screens for Carding-Machines; and we hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to an improvement in carding-machines, and has particular reference to an attachment applied to the lick er-in, by which the dirt and leaves are more effectually removed from the cotton before the same passes to the main carding-engine.

The invention consists in the peculiar and novel construction of a screen adjustably secured below the lick er-in, as will be more fully set forth hereinafter.

Figure 1 is a plan view of our improved screen. Fig. 2 is a vertical sectional view of part of a carding-machine, showing the relative positions of the feed-rolls, the lick er-in, the carrier-roll, part of the main cylinder, and the improved screen. Fig. 3 is an enlarged cross-section of the hinged connection.

Similar numbers of reference designate corresponding parts throughout.

In the drawings, the numbers 3 indicate the feed-rolls; 4, the frame of the carding-machine; 5, the leaf-plate; 6, the lick er-in; 7, the carrier, and 8 a portion of the main carding-cylinder.

The number 9 indicates the fixed portion of our improved card-screen consisting of a concaved plate, preferably of sheet metal, perforated with the holes 10, as shown in Fig. 1. This plate 9 is provided at each end with the segmental flanges 11, by which it is secured at each end to the two sides of the carding-machine under the lick er-in, as is shown in Fig. 2. The concaved perforated plate 9 is strengthened at one edge by the stiffening-flange 12, bent at, or nearly at, right angles to the plate 9, and at the other edge by the wire 13, around which the plate 9 is bent, as is shown in Fig. 3. The concaved screen 14 is secured to the concaved plate 9 by the hinges 15. This screen consists of the rectangular concaved frame 16, strengthened by three ribs

17, one secured to each of the end strips of the frame 16 and one to the central strip of the frame. In the frame 16 wires or bars 18 are secured so as to extend transversely under the lick er-in. These wires or bars are placed close together, and the wires or rods 19, also secured to the frame 16, parallel with the wires 18, are placed much farther apart, so that the openings between the wires or bars in the frame 16 are farther apart on the first or adjustable portion of the frame and much closer together on the part of the frame nearer the hinged edge of the frame 16. In practice we find that about two-thirds of the rectangular openings in the frame 16 may have the wires or bars farther each from the other than the other one-third of the frame. The concaved screen 14 is provided with the upwardly-projecting flange 20, extending along the front edge of the hinged screen. This forward end of the screen is adjusted by bringing the edge of the flange 20 closer to or farther from the lick er-in, and may be held in the desired adjusted position by any suitable practical clamping or holding device—one method being by securing the bolts 21 one to each of the two end ribs 17, so as to extend through the slots 22, one of which is made in each one of the two side frames 4 and clamping the ribs to the side frames, thus securely holding the concaved screen 14 in the adjusted position.

The operation of our improved card-screen is as follows: When the cotton delivered by the feed-rolls 3 is caught by the wires of the lick er-in, it first strikes the edge of the leaf-plate, which takes out the seed and loosens the leaves and dirt. The cotton now striking successively the edge of the flange 20 and the wires or bars 19, all loose dirt will fall down through the wide spaces between the wires or bars 19; but the loosened cotton fiber will not pass down between the wires or bars, owing to the strong indraft of air at this part of the screen. As the space between the lick er-in and the screen diminishes at the hinge, the indraft of air also diminishes, and as the cotton fiber could pass through the screen near the hinge the wires or bars 18 are placed much closer together, so as to allow the dirt to pass through between the bars or wires without the cotton fiber. The cotton now reaches the concave perforated plate 9, which

is so placed in connection with the licker-in that the space between them is gradually contracted, and the air, with the dust still remaining in the cotton, is forced through the holes in the plate 9. By adjusting the hinged portion 14 of the screen farther from or nearer to the licker-in the air-indraft can be regulated to a nicety. The force and action of the air on the cotton fiber in connection with the screen will separate a much larger proportion of the dirt from the cotton than was heretofore possible and prevent the fiber from passing through the screen, thus saving the fiber and preventing the grinding-wear on the wires of the main cylinder and the flats or workers.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

- 20 1. The combination, in a carding-engine with the licker-in and the feed-rolls, of a screen consisting of a concaved perforated plate secured under the licker-in and a frame hinged

at one edge to the concaved perforated plate provided with two sets of transverse wires or rods, the set of rods nearer the feed-rolls being placed farther apart than the set of rods near the hinged edge or farthest from the feed-rolls, and a device for adjustably securing the end of the hinged frame nearest the feed-rolls, as described.

2. The combination, with the licker-in and the feed-rolls of a carding-engine, of the concaved perforated plate 9, provided with the ribs 11 and the flange 12, the concaved screen 14, hinged to the plate 9, provided with the end and center ribs 17, and two sets of transverse bars, the set 18 near the hinged edge farthest from the feed-rolls set closer together than the set 19 nearer the feed-rolls, as described.

SAMUEL SHOEFELT.
JOSEPH MAYOR.

Witnesses:

J. BERGIN,
R. FLANAGAN.