

No. 656,871.

Patented Aug. 28, 1900.

J. F. WHITE.

UNDER SCREEN FOR CARDING ENGINES.

(Application filed Mar. 11, 1898.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 5.

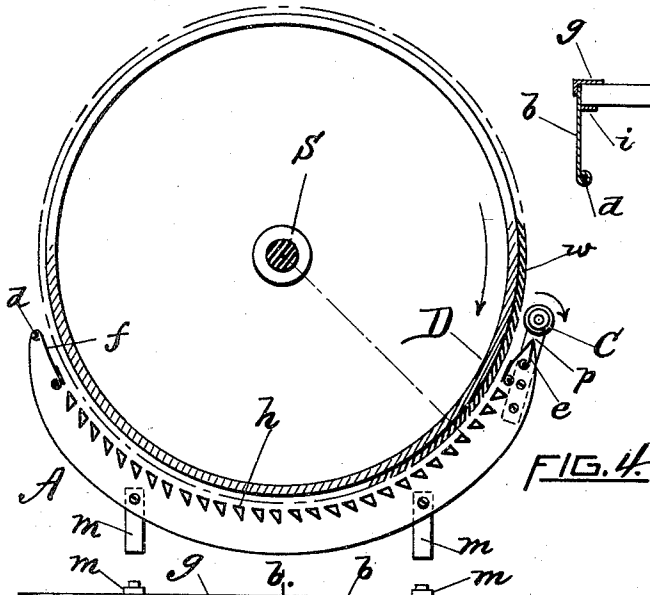


FIG. 4.

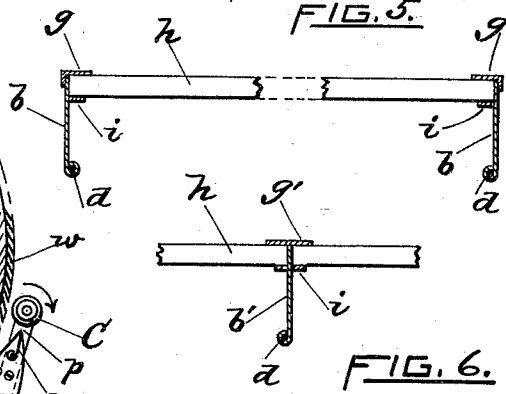


FIG. 6.

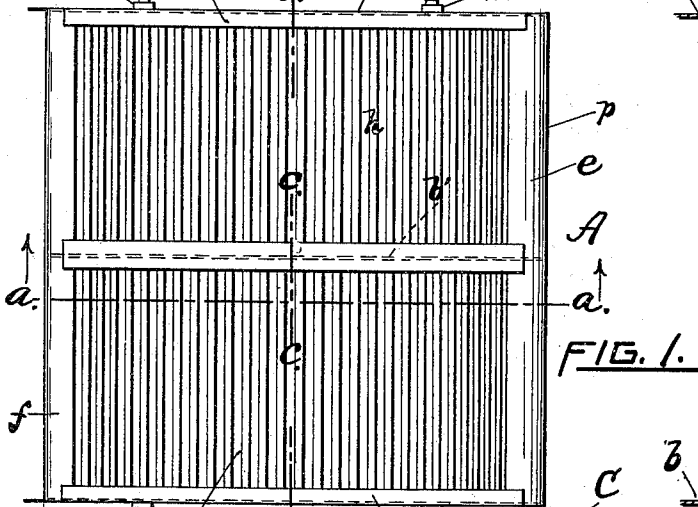


FIG. 1.

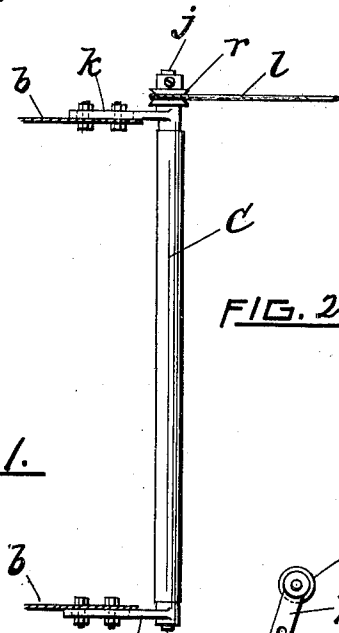


FIG. 2.

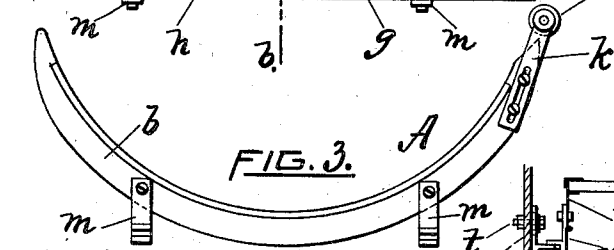


FIG. 3.

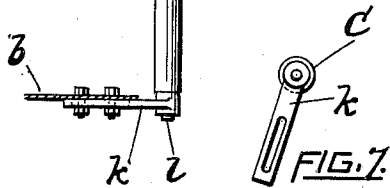


FIG. 7.

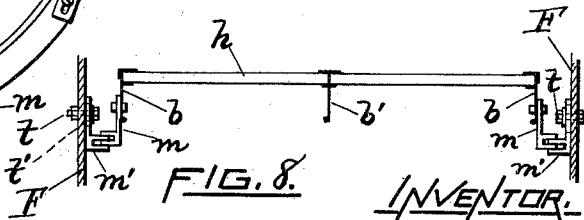


FIG. 8.

WITNESSES.

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2 Sheets—Sheet 2.

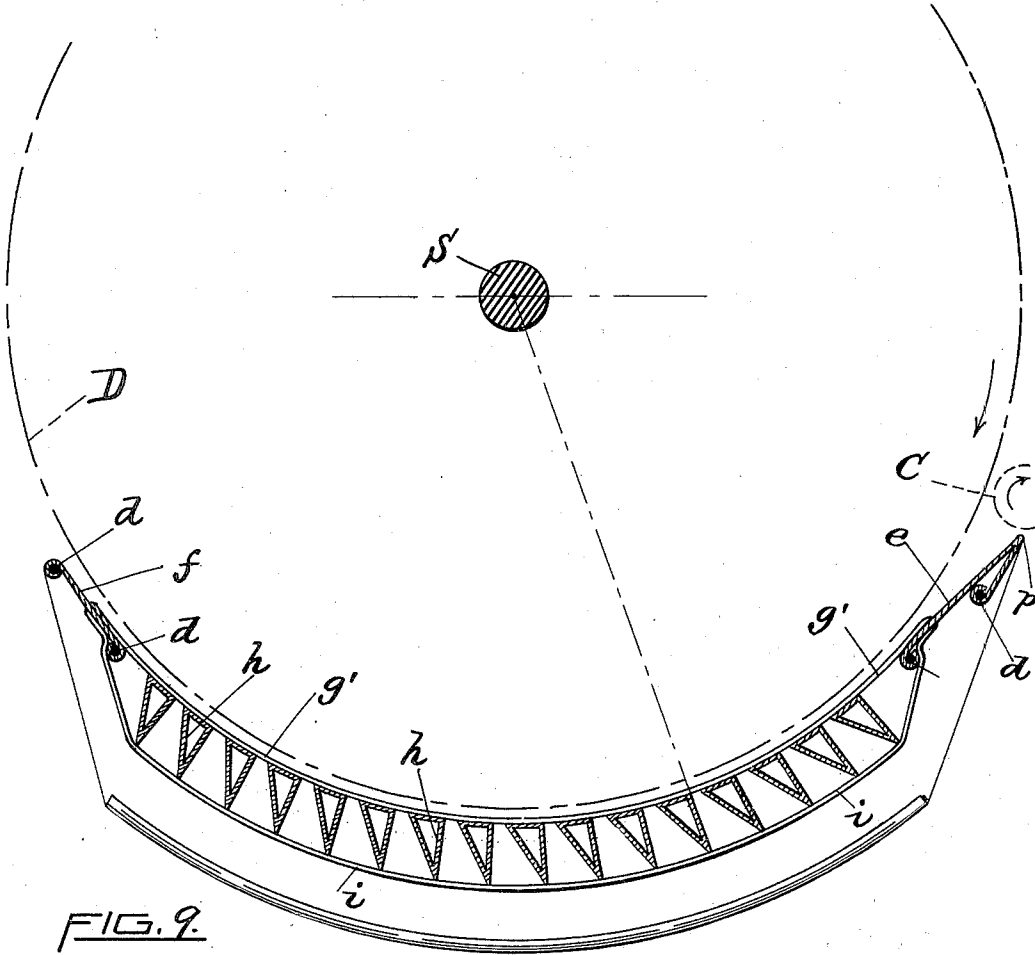


FIG. 9.

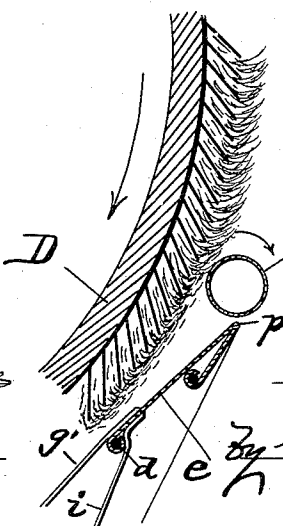


FIG. 10.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

JOHN F. WHITE, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO WALTER RUSHTON, OF SAME PLACE, AND ALBERT E. CARROLL, OF BOSTON, MASSACHUSETTS.

## UNDER SCREEN FOR CARDING-ENGINES.

SPECIFICATION forming part of Letters Patent No. 656,871, dated August 28, 1900.

Application filed March 11, 1898. Serial No. 673,529. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN F. WHITE, of the city and county of Providence, in the State of Rhode Island, have invented a certain new and useful Improvement in Under Screens for Card-Machines, of which the following is a description sufficient to enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an attachment for card-machines; and the object of my invention is to provide means for giving an escape for any impurities contained within the fiber as it passes under the card-cylinder.

It consists of a screen, preferably made of tinned sheet-iron, of a segmental form to fit beneath the card and provided with stationary transverse bars angular in cross-section, each having its front face in a radial plane centering in the axis of the card.

It further consists in providing a small cylinder adjustably secured to the side walls of the screen, adapted to rotate over the front edge thereof for the purpose of forcing the cotton, wool, or such material between the card-cylinder and the screen.

In the accompanying two sheets of drawings, Figure 1 represents a top plan view of the screen. Fig. 2 is a top plan view of the small rotating cylinder as attached to the side walls of the screen. Fig. 3 is a side elevation of the screen, showing the position of the small cylinder as adjustably secured to the screen. Fig. 4 is a longitudinal section of the screen, taken in line *aa* of Fig. 1, showing its relative position beneath the card-cylinder, as in use. Fig. 5 is an enlarged cross-sectional view of the screen, taken in line *bb* of Fig. 1, partly broken, showing the manner of constructing the side walls to receive the bars. Fig. 6 is a cross-sectional view of the central portion of the screen, taken in line *cc* of Fig. 1, showing the construction of the center wall to receive the bars. Fig. 7 is a side elevation of the adjustable bracket for the small cylinder. Fig. 8 is a cross-section of the screen, showing means for adjusting the same to the frame of the card-machine. Fig. 9 is an enlarged longitudinal sectional view of the screen, showing the angular bars

having their front faces in a radial plane centering in the axis of the card. Fig. 10 is an enlarged sectional view of a portion of the card-cylinder, showing the position the fiber takes in the wire clothing as it passes between the small rotating cylinder and the screen.

Like letters of reference indicate like parts in the drawings.

A designates the screen, preferably made of tinned sheet-iron, provided with side walls *bb* and center wall *b'* of a segmental form, said walls having their bottom edges spun over stiffening-wire *d* to retain their normal shape. At the front end of the screen and extending transversely over the walls *bbb'* is provided a flat strip *e*, bent to the shape of an acute angle in cross-section, its two sides meeting upwardly to a sharp edge *p*. A flat strip *f* is provided at the rear end of the screen and extending transversely over the walls *bbb'*, and each of the aforesaid strips *e* and *f*, respectively, has its edges spun over stiffening-wires *ddd*. Over the top edge of each of the side walls *bb* are placed strips *gg* of the form of a right angle in cross-section, each strip having one of its sides overlapping the wall, as seen in detail in Fig. 5. A flat strip *g'* is placed over the middle wall *b'*, the three aforesaid strips *gg* and *g'* having their extreme ends overlapping the transverse strips *e* and *f*, respectively. Angular bars *h*, comprising two sets, extend transversely across from each side of the center wall *b'* to the side walls *bb* of the screen, the bars of each set placed in alinement with those of the other set and beneath the strips *gg* and *g'*. Narrow strips *i* extend laterally from each of the inner sides of the three walls for supporting the bars, said strips having their extreme ends secured to each of the strips *e* and *f*, respectively, as seen in Fig. 9, and all parts, as hereinbefore mentioned, being secured together by solder, thus forming the screen.

In referring to Fig. 2, C represents a small cylinder, made of tinned sheet-iron, having both ends closed and provided with centrally-projecting trunnions *jj*, integral therewith and supported in the hubs of adjustable brackets *kk*, one of the trunnions projecting out-

wardly from the face of the hub to receive a small score-pulley *r*, which is keyed to the shaft, said pulley being driven by a cord *l*, having power-transmitting connection from the rotating mechanism of the machine.

To adjust the screen to a card-machine, suitable brackets *m* (see Figs. 3 and 4) are bolted to each outer side of the walls of the screen, said brackets having a laterally-extended fork-shaped lower portion. Similar brackets *m'* are bolted to the inner side of the frame of the card-machine, each bracket being provided with a vertical slot *t'* for giving adjustment to the screen. The fork-brackets which support the screen are made free to slip into the interlocking brackets of the card, the latter being adjustably secured in position by the clamping-bolts *t*, which pass through said brackets and frame of the machine.

The small rotating cylinder *C* has two essential features in relation with the screen. In the first place it prevents the fibers from striking or accumulating in the form of a lump on the edge or apex *p* of the screen; secondly, by its revolving in the same direction to that of the card-cylinder a certain amount of drag is obtained, which helps to straighten the fiber projecting from the card-clothing. (See Fig. 10.) The cylinder *C* is made to revolve at much less speed than that of the card to give this amount of drag to the fiber. As it passes around the lower portion of the card a certain percentage of the fiber strikes against the front faces of the bars of the screen and falls to a receptacle placed on the floor to receive the same. This small cylinder is placed directly over and in alinement with the front edge *p* of the screen and is supported in position by the brackets *k k*, which are bolted to the outer side of the walls *b b* of the screen, as shown in top plan in Fig. 2, and each supporting-bracket is

provided with an elongated slot to give the required adjustment to the cylinder.

The motion of the carding-cylinder is in the direction of the arrow, as seen in Fig. 4. Said cylinder revolves at a high surface speed and creates a strong air-blast from its projecting wire clothing, and the front faces of the bars of the screen form abutments against which the burs or other foreign matter contained within the cotton strike and then separate from the cotton and fall through the spaces between the bars.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a card-engine, the screen *A* provided with a truss-bar *e* of an acute-angular form in cross-section, a rotatable cylinder *C* adjustably secured over the apex of the truss-bar, the brackets *k k* for supporting said cylinder in position, and the pulley *r* keyed to the cylinder-shaft and receiving transmitting motion from the machine, substantially as set forth.

2. A screen for carding-engines, comprising the supporting-walls curved concentrically with the card-cylinder of the engine, two series of hollow angular bars *h* permanently fixed and having their front faces in radial planes centering in the axis of the card-cylinder, the small cylinder *C* mounted over the front edge of the screen and provided with a keyed pulley having power-transmitting connection from the machine to rotate said cylinder, and the brackets *k k* bolted to the side wall of the screen and provided with slots for giving adjustment to the cylinder *C*, substantially as and for the purpose described.

JOHN F. WHITE.

Witnesses:

WALTER RUSHTON,  
JOHN J. COUNLY.