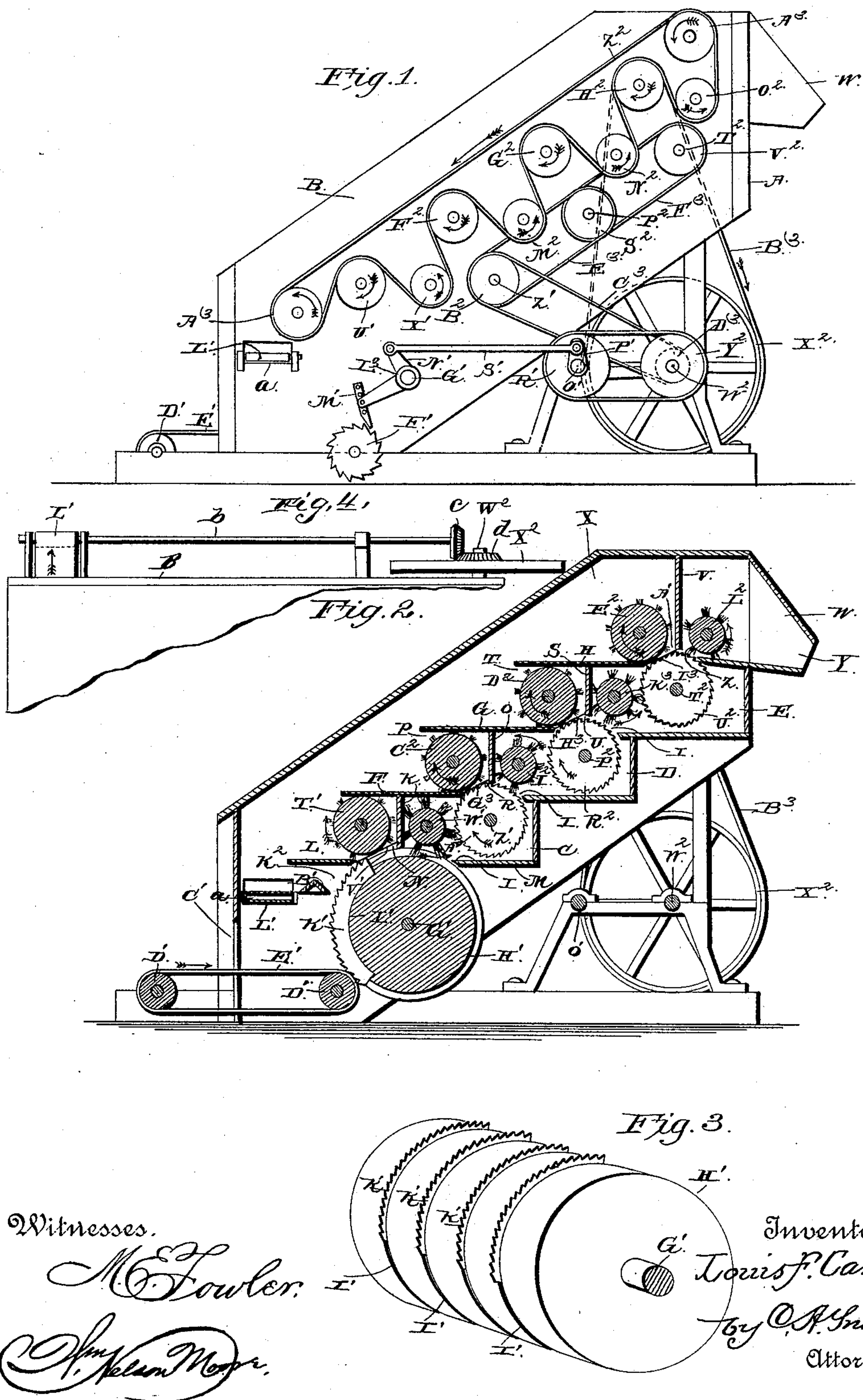


(No Model.)

L. F. CARR.
SEED COTTON CLEANER.

No. 387,674.

Patented Aug. 14, 1888.



UNITED STATES PATENT OFFICE.

LOUIS F. CARR, OF HELENA, ARKANSAS.

SEED-COTTON CLEANER.

SPECIFICATION forming part of Letters Patent No. 387,674, dated August 14, 1888.

Application filed August 20, 1887. Serial No. 247,959. (No model.)

To all whom it may concern:

Be it known that I, LOUIS F. CARR, a citizen of the United States, residing at Helena, in the county of Phillips and State of Arkansas, have invented a new and useful Improvement in Seed-Cotton Cleaners, of which the following is a specification.

My invention relates to an improvement in seed-cotton cleaners; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is an elevation of a seed-cotton cleaner embodying my improvements. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a detached perspective view, partly in section, of the oscillating drum having the toothed segments. Fig. 4 is a detail top plan view of a portion of the machine, showing the connections between the track-carrier and one of the operating-shafts.

A represents an inclosing-case of suitable size, which has vertical side walls, B, and the upper side of which is inclined, as shown. In the case is formed an ascending series of chambers, C, D, and E. A board, F, forms the top portion of chamber C, a similar horizontal board, G, forms the top portion of the chamber D, and a similar horizontal board, H, forms the top portion of the chamber E. Each of the said chambers is provided at its lower front corner with an opening, I, as shown.

K represents a vertical board which depends from the board F and forms the front side of the chamber C, and the space under the board F in advance of the board K forms a chamber, L, the bottom of which is formed by a horizontal board, M. It will be observed that the board K does not extend downward as far as the bottom of the chamber C, and consequently an opening, N, is left in the rear lower corner of the chamber L.

O represents a vertical board which depends from the board G and forms the front side of the chamber D and the rear side of a chamber, P, in front of chamber D. The said chamber P has an opening, R, in its rear lower corner.

S represents a vertical board which depends from the horizontal board H and forms the

front side of the chamber E and the rear side of a chamber, T, which chamber T has an opening, U, in its rear lower corner. A vertical board, V, depends from the top of the inclosing-case and forms the front side of a discharge-chamber, W, above the rear portion of chamber E and the rear side of a chamber, X, which is above the front portion of the chamber E, the bottom of said chamber X being formed by the board H. The chamber W has a discharge spout or throat, Y, at its rear lower corner, and is provided at its front lower corner with an opening, Z, communicating with chamber E, and the chamber X has an opening, A', at its rear lower corner, also communicating with chamber E.

B' represents a pair of transverse boards which connect the sides of the case and are arranged at a suitable angle with relation to each other and in the form of an inverted V, these boards being located at a suitable distance below the front end of board M.

C' represents a feed-opening made in the lower front corner of the case. Upon the frame, at the front end thereof, is journaled a pair of transverse rollers, D', which are connected by an endless feed belt or apron, E'. One end of the rear roller D' projects beyond one side of the case A and is provided with a ratchet-wheel, F'.

G' represents a rock-shaft which is journaled in the sides of the casing at a suitable distance below the board M. To this shaft is rigidly attached a cylindrical drum, H', of suitable diameter, preferably twenty inches. This drum is provided on its front side with a series of recesses, I', in which are secured segmental saws K', having upwardly-extending teeth the points of which project a suitable distance—say about one-half to three-fourths inch—beyond the face of the drum. The rear roller D' of the endless feed-carrier comes nearly in contact with the lower side of the drum.

The space between the board M, the front inclined board, B', and the front side of the drum H' forms a chamber, K².

L' represents an endless carrier, which is arranged transversely in the front portion of the case A just in advance of the front inclined board, B', and extends through an opening, a, in one side of the case A, and is adapted to

discharge trash therefrom, as will be hereinafter described.

To one end of the rock-shaft G' is keyed a bell-crank lever, L^3 , the long arm of which extends downward toward the ratchet-wheel F' , and is provided with a pivoted adjustable dog, M' , that is adapted to engage the said ratchet-wheel. The short arm N' of the bell-crank lever extends forward and is arranged at about right angles with relation to the long arm thereof.

O' represents a shaft which is journaled transversely in the frame near the lower rear side of the case, and is provided at one end with a crank, P' , and with a driving-pulley, R' .

S' represents a pitman that connects the crank to the short arm of the bell-crank lever L^3 .

In the chamber L is located a cylindrical brush, T' , the spindle of which is journaled in the sides of the casing, one end of the said spindle being provided with a band-pulley, U' . The lower side of this brush bears against the upper side of the oscillating drum H' .

V' represents a series of wires which constitute a screen and are stretched across the opening N in the lower rear corner of the chamber L and pass between the faces of the brush T' and drum H' , the said wires having their ends attached to the rear and lower edges of the boards M and K , respectively.

W' represents a brush which is located in the lower front corner of the chamber C , is journaled in the sides of the casing, and has a band-pulley, X' , attached to one end of its spindle. This cylindrical brush bears upon the upper side of the drum H' and extends through the opening in the lower front corner of chamber C .

Z' represents a shaft which is journaled transversely in the sides of the casing and is provided with a series of circular saws, A^2 , which are arranged in the rear end of the chamber C , and the upper edges of which project through the openings in the opposing lower corners of the chambers P and D . On one end of this shaft is secured a band-pulley, B^2 .

C^2 , D^2 , and E^2 represent cylindrical brushes which are similar to the brush T' , are located in the rear ends of the chambers P , T , and X , respectively, and have their spindles provided at one end with the band-pulleys F^2 , G^2 , and H^2 , respectively.

I^2 , K^2 , and L^2 represent cylindrical brushes of the same diameter, which are similar to the brush W' , are journaled in the casing, and are located in the lower front corners of the chambers D , E , and W , respectively, and are provided at one end with pulleys M^2 , N^2 , and O^2 , which are similar to the pulley X' .

P^2 represents a shaft which is journaled transversely in the casing and arranged in the chamber D , provided with a series of circular saws, R^2 , which are similar to the saws A^2 , and has at one end a band-pulley, S^2 .

T^2 represents a similar shaft which is located

in the chamber E , and which has circular saws U^2 and a band-pulley, V^2 .

W^2 represents a horizontal transverse driving-shaft, which is journaled in the frame near the rear lower corner thereof, and is provided with a large belt-pulley, X^2 , and the small pulley Y^2 .

Z^2 represents an endless belt which passes over loose tightening-pulleys A^3 , journaled in one side of the casing, and under the pulley O^2 , over pulley H^2 , under pulley N^2 , over pulley G^2 , under pulley M^2 , over pulley F^2 , under pulley X' , and over the pulley U' , and is thereby adapted to impart rotary motion to all of the cylindrical brushes and to rotate the same in the directions indicated by arrows in Figs. 1 and 2. The endless belt B^3 connects the large driving-pulley X^2 and a pulley on the end of shaft of brush E^2 opposite the pulley H^2 . A similar endless belt, C^3 , connects a small pulley, D^3 , on driving-shaft W^2 and the saw-pulley B^2 . The latter is connected to the double pulley S^2 by means of an endless belt, E^3 , and the double pulley S^2 is connected to the pulley V^2 by a similar endless belt, F^3 .

G^3 represents a screen located in the lower rear corner of the chamber P and stretched across the opening therein.

H^3 represents a similar screen stretched across the opening in the lower corner of chamber T , and I^3 a similar screen stretched across the opening in the rear lower corner in the chamber X , the said screens being similar to the screen V' and similarly adjusted, and composed of parallel longitudinal wires.

The operation of my invention is as follows: When the machine is in motion, the saws and the smaller cylindrical brushes are rotated in opposite directions and the larger cylindrical brushes are rotated in the same direction with the saws, as indicated by the arrows. The endless carrier E' and the endless carrier L' are caused to operate in the direction indicated by the arrows thereon, and the rotation of the shaft O' causes its crank and the pitman S' to oscillate the rock-shaft G' , and consequently impart similar motion to the bell-crank lever and to the drum H' . As the bell-crank lever L^3 oscillates, its dog comes in contact with the teeth on the front side of ratchet-wheel F' on the downstroke of the bell-crank lever, thereby rotating the said ratchet-wheel, and consequently causing the endless carrier E' to convey the rough cotton thrown thereon through the opening C' to the front side of the oscillating drum H' . As the said drum moves upward, the teeth of its segment-saws engage the cotton and carry the same up into the chamber K^2 , dislodging the larger trash and foreign substances therefrom, and carries the cotton past the revolving brush T' , which, being in rotation, brushes the adhering foreign matter from the cotton and sweeps the said foreign matter rearward over the front portion of the board M , from which it falls onto the conveyer L' , which carries the trash through

the opening a in the side of the case and drops it into a suitable receptacle. The cotton passes forward over the top of drum H' to the front corner of chamber C , where it is caught by the revolving brush W' and thrown against the saws A^2 . As the chamber K^2 becomes filled with trash, the same slides down the outer inclined board, B' , onto the conveyer L' and is carried away. The saws A^2 feed the cotton, after it is partially cleaned, to the brushes C^2 and I^2 , where the operation before described is repeated, and so on throughout the entire series of brushes, screens, and saws, each succeeding series serving to eliminate a portion of the foreign substances left in the cotton by the preceding series until the cotton is entirely cleaned by the time it reaches the chamber W . From the said chamber the cotton escapes through the spout or throat Y and is then ready to be ginned.

The screens serve to prevent the cotton from adhering to the rotating brushes, as the cotton is caused to pass under the said screens, thereby permitting the brushes to simply clear off extraneous matter from the cotton and to straighten out the fibers of the same.

On each reverse downward movement on the front side of the drum H' the teeth of the segments K' become disengaged from the cotton, as will be readily understood, thereby returning unloaded to the belt E' in condition to take a fresh charge of cotton to the lower brush, T' , on the succeeding upstroke of the segments.

The roller at one end of the endless carrier L' is provided with an extended shaft, b , which is geared to the shaft W^2 by means of a pair of miter-wheels, c d , as shown in Fig. 4. By this arrangement the motion of the shaft W^2 causes the carrier L' to operate, as before described.

Having thus described my invention, I claim—

1. In a seed-cotton cleaner, the combination of the oscillating drum having segmental saws, the screen arranged above the drum, and the brush arranged above the screen and rotating on the upper side of the drum, whereby the foreign substances will be swept or brushed from the cotton as the latter passes under the screen, substantially as described.

2. The combination, in a machine for cleaning seed-cotton, of the casing having the ascending series of communicating chambers, the rotating saws having their upper sides projecting through the communicating openings in the chambers, the screens arranged above the saws, and the rotating brushes arranged in the said chambers above the screens and saws, substantially as described.

3. The combination of the oscillating drum having the lever L^3 , the dog pivoted to the said lever, and the endless conveyer having the ratchet-wheel engaged by the said dog, whereby the oscillating drum will be automatically fed, and means, substantially as specified, to operate the oscillating drum, substantially as described.

4. The combination, in a seed-cotton cleaner, of the casing having the chamber K^2 , provided with the inclined bottom boards, B' , the chamber L , having the screen V' on its lower side, the oscillating drum having the toothed segments on one side adapted to sweep through the front side of the chamber K^2 , and the rotating brush T' , arranged in the chamber L , substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

LOUIS F. CARR.

Witnesses:

R. W. NICHOLLS,
E. E. DEARING.