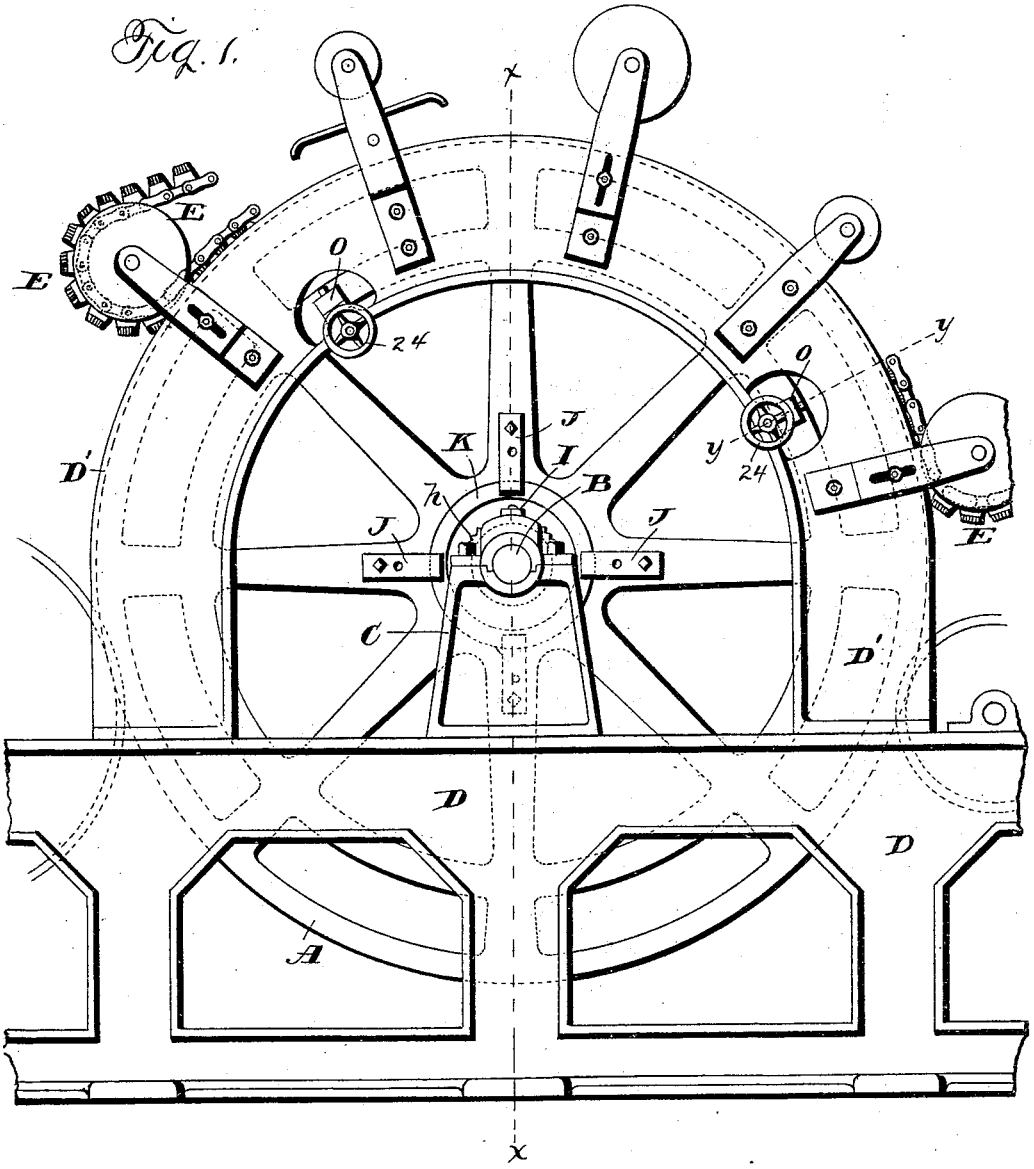
(No Model.) 3 Sheets—Sheet 1.

O. L. OWEN.

REVOLVING FLAT CARDING ENGINE.

No. 493,408. Patented Mar. 14, 1893.

Fig. 1.



Witnesses
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L. A. Williamson.

Inventor
Oscar L. Owen,
By his Attorney
Louis V. Southgate

(No Model.) 3 Sheets—Sheet 2.

O. L. OWEN.

REVOLVING FLAT CARDING ENGINE.

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Fig. 2.

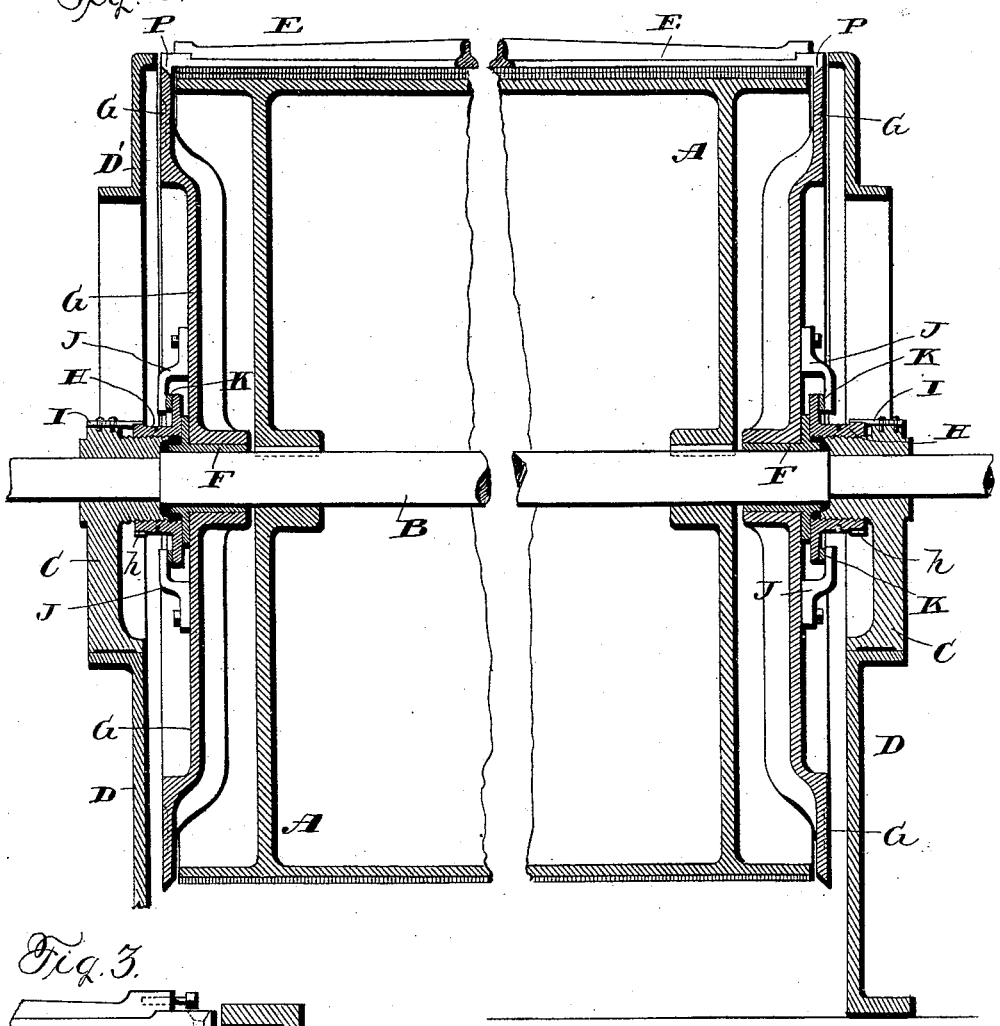


Fig. 3.

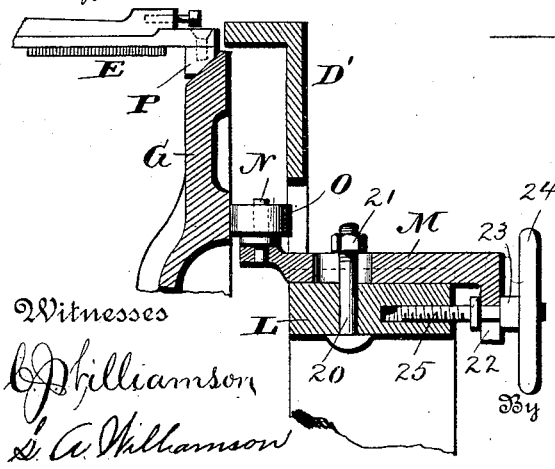
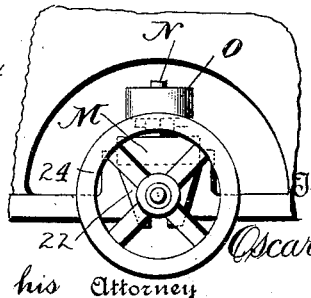


Fig. 4



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(No Model.) 3 Sheets—Sheet 3.

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REVOLVING FLAT CARDING ENGINE.

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Fig. 5.

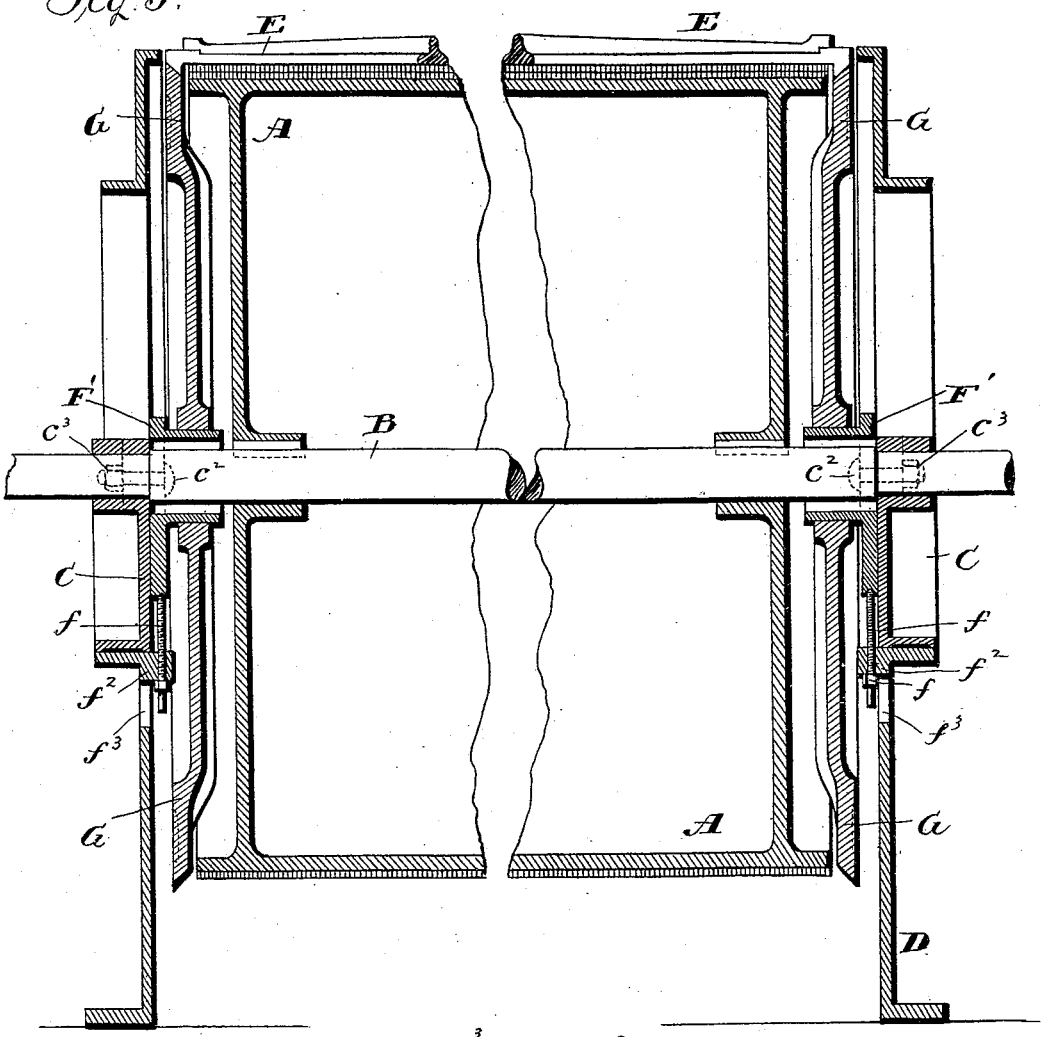
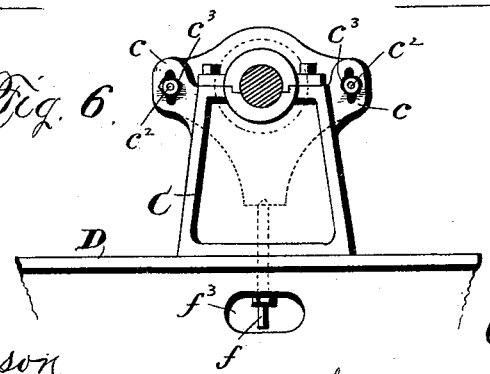


Fig. 6.



Witnesses
C. J. Williamson.
L. A. Williamson

Inventor
Oscar L. Owen.
By his Attorney
Louis W. Southgate

UNITED STATES PATENT OFFICE.

OSCAR L. OWEN, OF WHITINSVILLE, MASSACHUSETTS, ASSIGNOR TO THE WHITIN MACHINE WORKS, OF SAME PLACE.

REVOLVING-FLAT CARDING-ENGINE.

SPECIFICATION forming part of Letters Patent No. 493,408, dated March 14, 1893.

Application filed January 21, 1892. Serial No. 418,738. (No model.)

To all whom it may concern:

Be it known that I, OSCAR L. OWEN, a citizen of the United States, residing at Whitinsville, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Revolving-Flat Carding-Engines, of which the following is a specification.

The aim of this invention is to improve the revolving flat carding engine, and to this end, the invention consists of the improvements herein described and claimed and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a carding engine with my improvements applied thereto. Fig. 2 is a sectional elevation on line *x*—*x* of Fig. 1. Fig. 3 is a section on an enlarged scale taken on line *y*—*y* of Fig. 1, showing the device for adjusting the rims of the flat supporting disks. Fig. 4 is an end elevation of the device shown in Fig. 3. Fig. 5 is a view similar to Fig. 2 illustrating the construction used where it is not desired to adjust the disks at the center, and Fig. 6 is a side elevation of the pedestal used in this construction.

The chief object of my invention is to reduce the wear on the ends of the traveling flats, to provide an efficient mechanism whereby the flats may be adjusted relatively to the main cylinder and a device whereby the flats will always be kept concentric with the main cylinder.

Referring now to the drawings and in detail, A represents the main cylinder keyed on the shaft B, which is mounted or journaled in the blocks or pedestals C, which are mounted on the lower framings D and on the latter are fastened the engine framings or arches D'.

E represents the traveling flats which are mounted in the usual manner above the main cylinder and which may be driven by any of the usual forms of gearing at a slow speed relatively to the peripheral speed of the main cylinder. Fitting on the shaft B are the flanged bushings F and running on these bushings are the disks G, the peripheries of which are turned or finished off on an incline so that the surfaces of the disks form segments of a cone. The ends of the pedestals C are threaded as shown and fitting on these threads are the flanged nuts H, the flanges of which rest against flanges on the bushings F. Clips I are fastened on top of the pedestals and are adapted to engage teeth or notches *h* cut on the nuts H, whereby the clips when in place will hold the nuts H in their adjusted positions. Also by removing or moving the clips away from the nuts, the latter may be turned as desired. Brackets J are fastened on the faces of the disks and the arms of the same are extended over so as to embrace the flanged nuts H and between the same are placed the friction washers K of any suitable material.

It will now be understood, that by properly manipulating the nuts H and the clips I, the disks G may be adjusted axially of the machine and held in their adjusted positions.

To still further hold and adjust the disks G very nicely and accurately, I may use and preferably do use in all cases, an adjustable device or devices for holding the rims of the disks G where they support the flats. Where these are used, I form or finish the engine casings or arches, with a bearing as L and in this bearing I fit a slide M. On the inside end of this slide is driven or fastened a stud N and on this stud is journaled a friction roller O that is adjusted to bear against the side of the disk G. The slide M is slotted and passing through this slot and the frame is the bolt 20 which has the nut 21 by means of which the slide may be secured in its adjusted position. The end of the slide M is extended down as shown to form a yoke 22 that catches or engages between the collar 23 and handwheel 24 mounted on screw 25 tapped into the frame. Now evidently by properly turning the handwheel the roller O may be accurately set against the disk G. It is understood of course that these rim devices are to be used in connection with each disk G and also that one or more of these devices may be used in connection with each disk, two being shown in the drawings as co-operating with each disk. On each of the flats is formed a segment P, the face of which is accurately turned or finished to bear on the periphery of the disk G. I prefer to make these segments P generally in separate pieces as shown in Fig. 3 of the

drawings and to fasten the same to the ends of the flats by screws so that the same may be removed or replaced as desired. Now it will be understood that the flats will run very easily as the weight of the same comes on the disks and as the flats travel they will turn the disks which are fitted to run very easily on the bushings. Further it will be seen that there is very little friction between the flats and the disks as they travel together.

To adjust the clothing on the flats relatively to the clothing on the main cylinder, all that is necessary, is to manipulate the adjusting devices before referred to—if it is desired to set the flats nearer the cylinder, the adjusting devices are manipulated so that the disks will be moved outwardly, and the conical surfaces of the disks will be moved in a direction to allow the flats to approach the cylinders.

In some instances, I contemplate omitting the adjusting devices at the center of the machine, and depend upon the rim adjusting devices to move the disks in, and the weight of the flats to force the disks outwardly. Where this is the case, I use the construction shown in Figs. 5 and 6 of the drawings. On the pedestals are formed or fastened wings or projections *c*, *c* and the inside faces of the pedestals are finished off smooth. The bushings F′ used in this construction to support the disks have large faces which rest against the inside faces of the pedestals and the bushings are bored larger than the shaft B so as to be adjustable up and down on the pedestals. Screws *f* may be used for this purpose and may be tapped in lugs f^2 formed on the inside of the frames and the frames may be cut away as at f^3 so that the screws will be accessible. The wings *c* before referred to, are slotted and passing through these slots are the bolts c^2 which also pass through the flanges on the bushings and have the nuts c^3 on the ends thereof, by means of which the bushings may be fastened in their adjusted positions. By this mechanism the bushings may be nicely set relatively to the main shaft to compensate for wear of the main shaft in its bearings. The operation with this construction is the same as before described, the only difference being that dependence is placed on the weight of the flats to move the disks G outwardly. Thus it will be seen that I have devised a simple and accurate way of adjusting the flats and also a device by which the flats will run almost frictionless and will always be kept concentric with the main cylinder.

I may use either or both the center and rim adjusting devices and where I hereinafter use the term, means for adjusting the disks axially, I mean either or both of these devices or any other mechanism that will move the disks axially of the machine.

Modifications of the constructions herein shown may be made by a skilled mechanic without departing from the scope of my invention.

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

1. The traveling flats and main cylinder of a carding engine, in combination with two disks mounted one on each side of the machine, the peripheries of said disks being finished off on an incline, the flats having faces or surfaces resting on the peripheries of said disks, a roller bearing against the side of each of said disks and means for moving said rollers, substantially as described.

2. The traveling flats, framing and main cylinder of a carding engine, in combination with two disks mounted one on each side of the machine, the peripheries of said disks being finished off on an incline, the flats having faces or surfaces resting on the peripheries of said disks, the slides mounted on the framing, a roller carried by each of the slides and resting against the sides of the disks, and means for moving or adjusting said slides, substantially as described.

3. The traveling flats, framing and main cylinder of a carding engine, in combination with two disks mounted one on each side of the machine, the peripheries of said disks being finished off on an incline, the flats having faces or surfaces resting on the peripheries of said disks, the pedestals mounted on the framing and connections between the disks and the pedestals whereby the disks may be moved axially, substantially as described.

4. The combination of the main cylinder and traveling flats of a carding engine, the shaft on which the cylinder is mounted, the pedestals in which the shaft is journaled, bushings on the shaft, disks mounted on said bushings, the peripheries of said disks being finished off on an incline, the flats having surfaces resting on the peripheries of said disks, and means for moving said disks and bushings on said shaft, substantially as described.

5. The combination of the main cylinder and traveling flats of a carding engine, the shaft on which the cylinder is mounted, the pedestals in which the shaft is journaled, disks mounted on each side of the machine, the peripheries of said disks being finished off on an incline, the flats having surfaces resting on the peripheries of said disks, the said pedestals having threaded projections, nuts mounted on said projections and connected to said disks, whereby the disks may be moved axially, substantially as described.

6. The combination of the main cylinder and traveling flats of a carding engine, the shaft on which the cylinder is mounted, the pedestals in which the shaft is journaled disks mounted on each side of the machine, the peripheries of said disks being finished off on an incline, the flats having surfaces resting on the peripheries of said disks, the

said pedestals having threaded projections, nuts mounted on said projections and connected to said disks, said nuts having teeth or notches and clips attached to a fixed part and adapted to engage said nuts, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

OSCAR L. OWEN.

Witnesses:
HERBERT MCINTOSH,
LOUIS W. SOUTHGATE.