

(No Model.)

2 Sheets—Sheet 1.

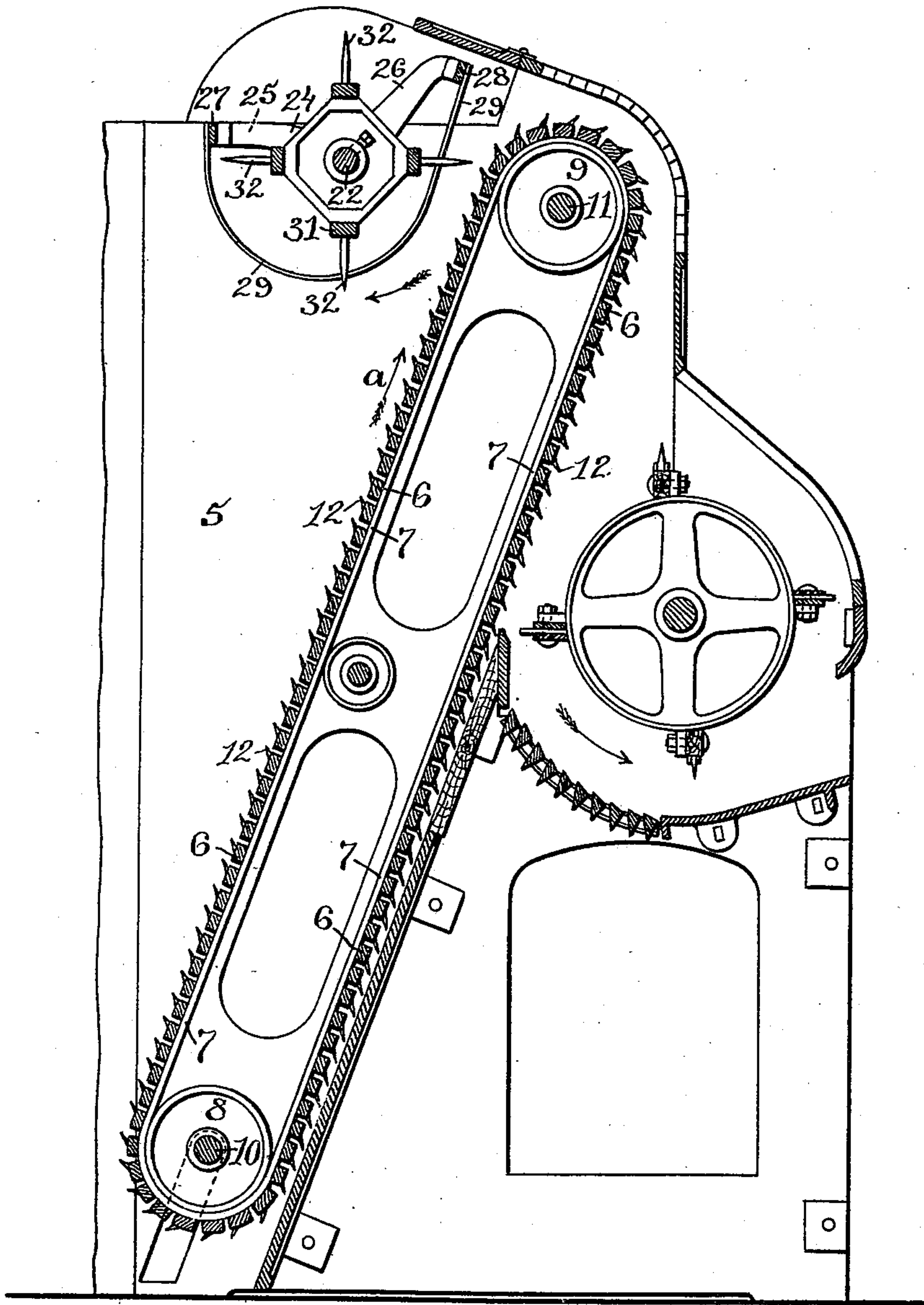
J. C. POTTER.

REVOLVING COMB FOR FIBER FEEDING MACHINES.

No. 523,818.

Patented July 31, 1894.

**Fig. 1.**



**WITNESSES:**

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

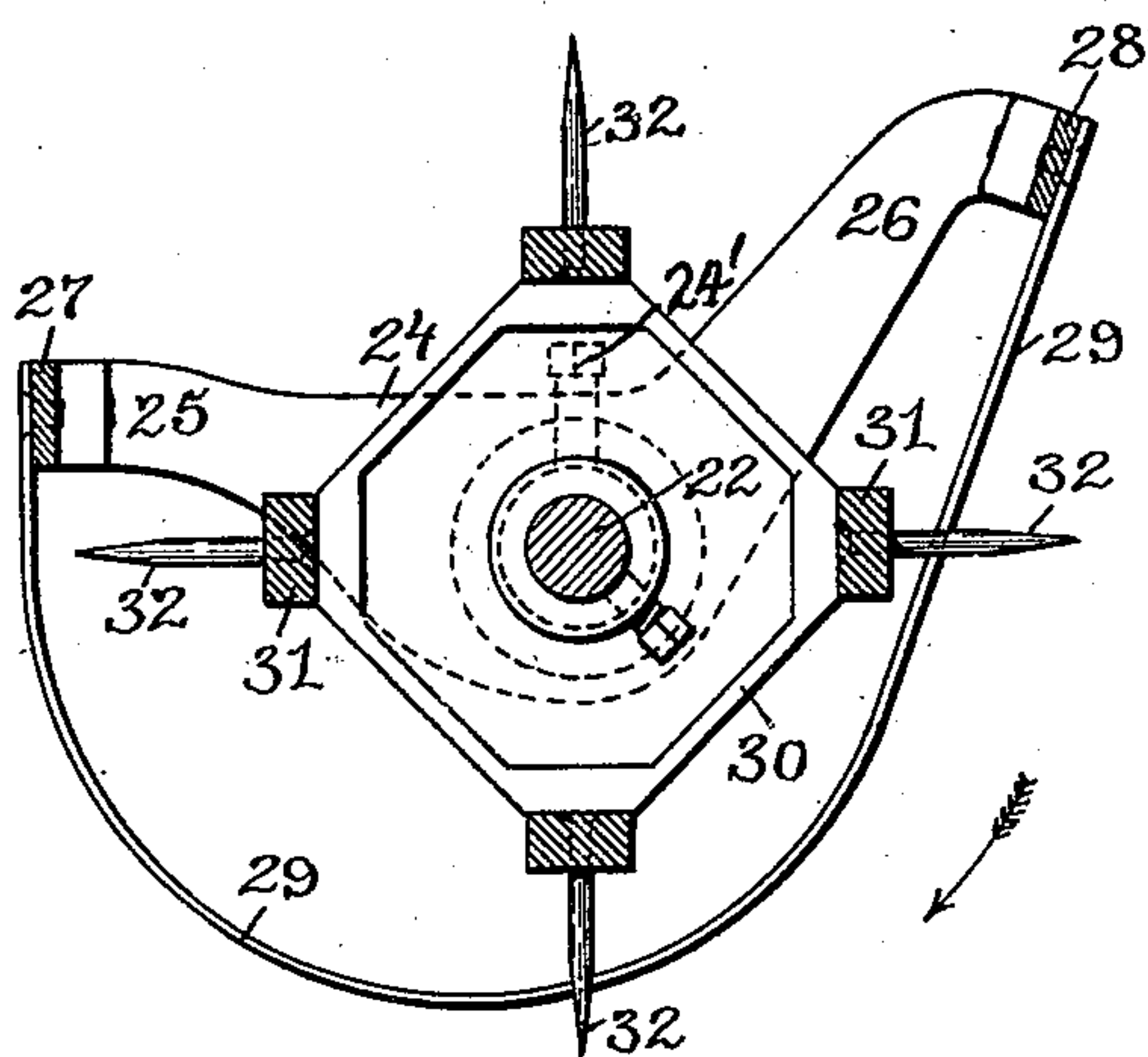


Fig. 3.

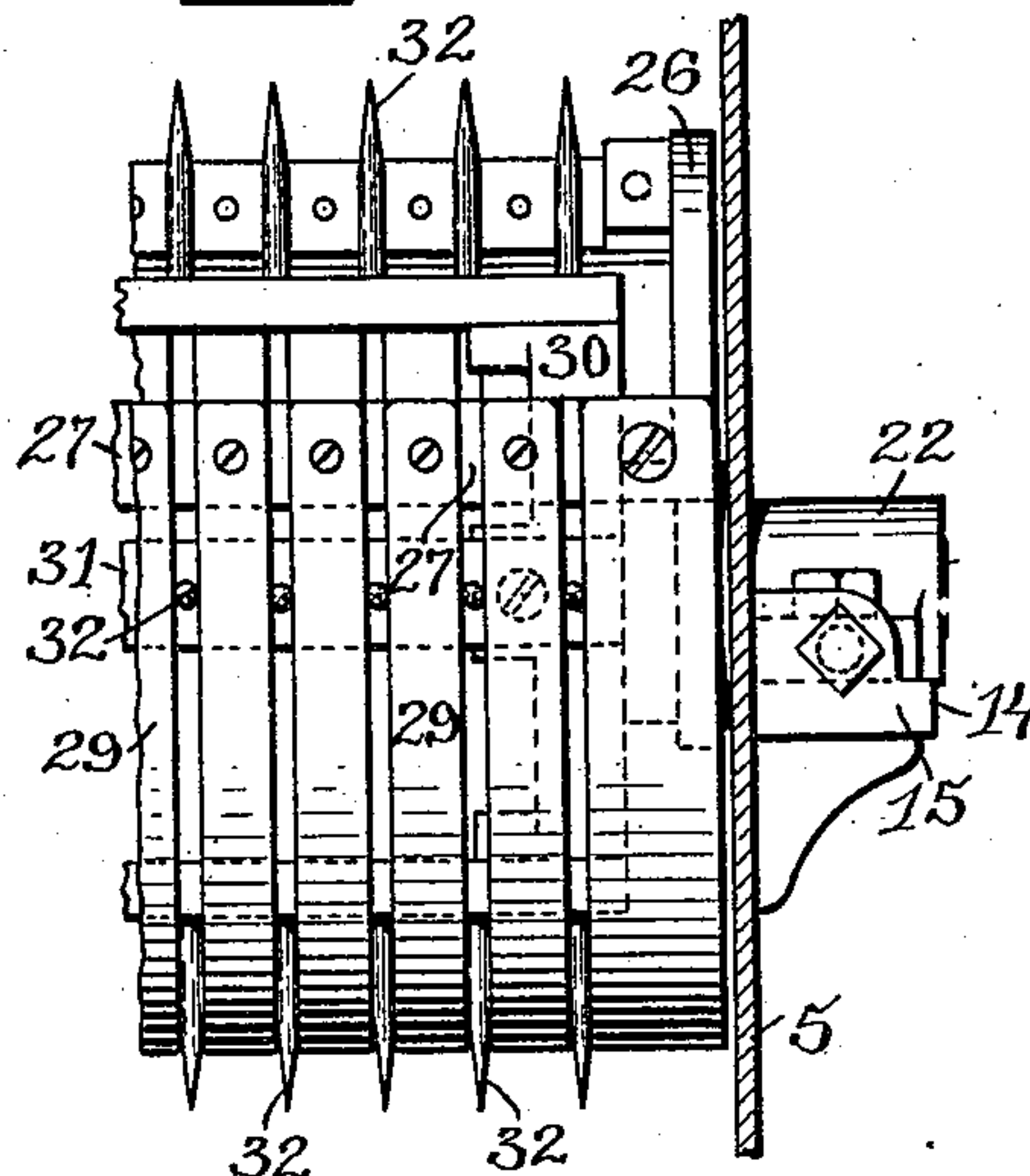
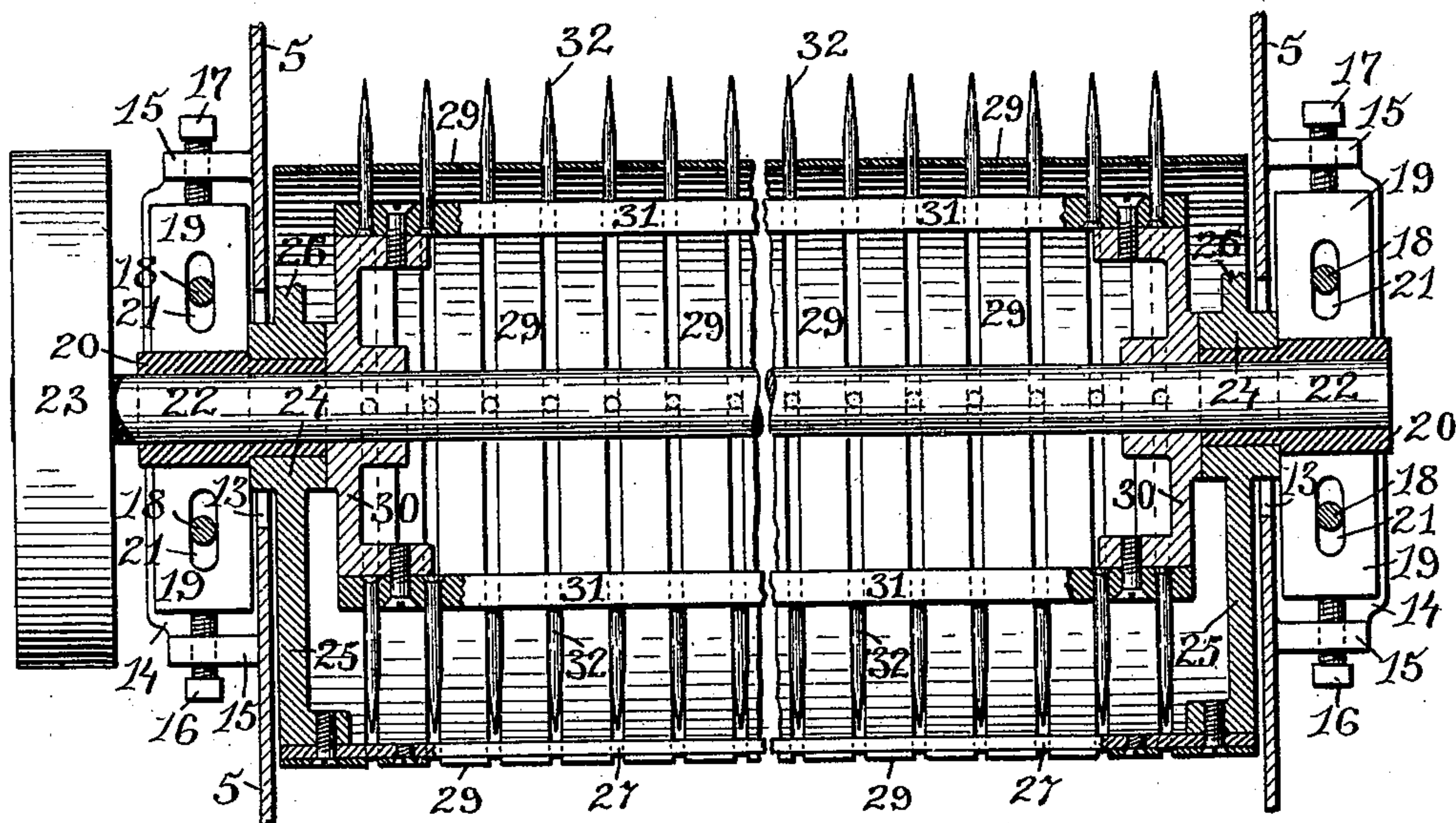


Fig. 4.



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# UNITED STATES PATENT OFFICE.

JAMES C. POTTER, OF PAWTUCKET, RHODE ISLAND.

## REVOLVING COMB FOR FIBER-FEEDING MACHINES.

SPECIFICATION forming part of Letters Patent No. 523,818, dated July 31, 1894.

Application filed November 20, 1893. Serial No. 491,479. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES C. POTTER, of Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Revolving Combs for Fiber-Feeding Machines; and I 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 refers to improvements in revolving combs which are particularly adapted for use in machines for feeding fibers.

The object of the invention is to so construct the eccentric clearer-frame for the comb teeth that it may be adjusted about the shaft of the revolving comb.

Another object of the invention is to so construct and support a revolving comb and its clearer frame that both may be readily adjusted with reference to the lifting-apron.

The invention consists in the peculiar construction of the revolving comb and its novel combination with the clearer frame.

The invention also consists in the peculiar construction of the clearer frame.

The invention also consists in the peculiar combination with the comb and frame of the novel adjustable supports for the same.

The invention also consists in the combination with a revolving comb having rigid teeth, of a clearer frame the extension of the bars of which is eccentric with reference to the comb-shaft and in so mounting the frame that it may be adjusted around the comb-shaft in order to bring the bars nearer to or farther from the outer ends of the teeth at the point at which the fiber is taken up by the teeth.

The invention still further consists in such other novel features of construction and combination of parts as may hereinafter be more fully described and pointed out in the claims.

Figure 1 represents a vertical sectional view of portions of a fiber-feeding mechanism showing the improved comb and its relation to the lifting apron. Fig. 2 represents an enlarged cross-sectional view of the improved comb and its clearer frame. Fig. 3 represents a rear elevation of portions of the same. Fig. 4 represents a horizontal sectional view of the same, partially broken away at the center, the sup-

ports in which the comb shaft is journaled and their adjusting devices being shown.

Similar numbers of reference designate corresponding parts throughout.

In self clearing combs for fiber feeding machines, as heretofore constructed, the comb teeth have been mounted on movable supports adapted to advance the teeth as they are revolved toward the lifting apron and to withdraw the teeth after they have taken up a portion of the fiber, the motion tending to clear the fiber from the teeth, this being in some cases assisted by inclosing the mechanism of the teeth within cylinders through perforations in which the teeth would be extended as they approach the lifting apron. In order that the teeth or their supports might be readily operated it has been necessary to keep the movable parts well lubricated and much damage to the fiber is occasioned by the dropping of the lubricant thereon. When the movable supports for the teeth were inclosed within a cylinder it has been found difficult to effectively repair the same, occasioning much delay from time to time in the use of the machine and particularly so from the constant wear on these parts owing to the nature of the work to be performed.

In carrying my invention into practice it has been my desire to overcome these and similar objections and to produce a self clearing revolving comb, which shall have the least possible number of movable parts, in which it will not be necessary to apply a lubricant where it can be brought in contact with the fiber, and to have all the parts of the device readily accessible for the purpose of examination and repair.

In the drawings 5 indicates a portion of one side of a fiber feeding machine which is generally furnished with a lifting apron formed by a series of slats, or bars, 6—6 secured to a continuous belt 7 which is supported in an inclined position by rollers 8 and 9 mounted on shafts 10 and 11 the ends of which are journaled in bearings, power being applied to one shaft to drive the apron in the direction indicated by the arrow *a*. The bars 6—6 are provided with teeth, or spikes, 12—12 which engage the fiber and carry it along with the apron.



In the upper portion of the sides 5 are formed slots, or openings, and on the outer surfaces of the sides 5, adjacent to these slots, are secured the brackets 14—14 having upwardly extending ends 15—15 through perforations in which the adjusting screws 16—16 and 17—17 work. In the upper surface of the brackets 14 are secured the vertical pins 18—18, and adjustably mounted in the brackets are the blocks 19—19 provided with centrally located bearings 20—20 and longitudinal guide-slots 21—21 extending vertically through the blocks 19—19 which are adapted to receive the guide-pins 18—18.

In the bearings 20 are journaled the end portions of the shaft 22 on which is mounted the drive pulley 23. The inner ends of the bearings are reduced in diameter and extend through the openings 13 in the sides of the casing, and on these reduced ends of the bearings are mounted the end frames 24—24, secured from rotation by bolts 24'—24' extending through the collars of these frames and bearing on the reduced ends of the bearings 20, and having rearwardly extending arms 25—25 and upwardly inclined forward arms 26—26. Connecting the arms 25 is a cross bar 27, and connecting the arms marked 26 is a similar bar 28 the surface of which is slightly inclined. Secured to these cross-bars are a number of curved strips 29—29 which extend downward from the bar 28 at an inward inclination toward the vertical plane of the shaft 22 until slightly below the same, then curving downward and backward, and finally upward to the bar 27 at which point and below the same at the rear of the shaft the radius of the curve in which the bars extend is considerably greater than the circular path traversed by the points of the teeth, these curved strips forming a clearer-frame and through the openings between the strips the comb-teeth pass for that portion of the length of the strips extending within the radius of the teeth.

Mounted on the shaft 22, within the end frames 24, are the plates 30—30 connected by the bars 31—31, and in these bars are fastened the comb teeth 32—32 which are long enough to extend through the spaces between the curved-strips 29—29 for that portion of the strips extending within the radius of the teeth.

As the shaft 22 is revolved the teeth 32 will pass between the front portions of the bent strips 29 and gathering the fiber from the lifting apron will throw the same backward. A portion of the fiber, will, however, adhere to the comb teeth, but as these teeth pass backward between the bent strips 29 these strips will strip the fiber from the comb teeth and this fiber will drop back.

The adjustment of the comb toward or from the lifting apron or other conveying device is governed by means of the screws 16—16 and 17—17 to move the blocks 19—19 backward or forward. The lubrication of the de-

vice is entirely from the outside and the lubricant is applied only to the journaled portions of the shaft 22 whence it cannot be conveyed to a position where it can be brought into contact with the fiber.

It is obvious that two or more of these combs may be used in a feeding machine in positions best adapted to act on the fiber.

By the extension of the curved strips to the rear of the revolving comb, the fiber, when piled up in the machine, is prevented from coming in contact with this portion of the comb, while the use of these curved strips allow comb teeth to be placed close together on the bars 31. The teeth may also be constructed of less diameter than those heretofore used;—by placing the teeth closer together a more perfect combing and consequent distribution is effected.

Where it becomes necessary to reduce the action of the comb teeth on the fiber, the bolts 24' are loosened and the clearer-frame is adjusted by rotating the same on the reduced ends of the bearings 20 depressing the rear portion of the frame so that the portions of the strips 29 extending in the greater radius will be brought around the front of the comb, or to the point at which the comb-teeth engage the fiber, the bolts 24' being then tightened to hold the frame in position.

It is obvious that the strips 29 may extend downward from the bar 28 in a more nearly vertical direction than as herein shown, depending on the length of the comb-teeth and the desired engagement of the same with the fiber.

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

1. In a revolving comb, the combination with side-frames, bearings extending through the same, and a shaft journaled in said bearings and provided with radially extending teeth, of end-frames rotatably mounted on the bearings, cross-bars connecting these side-frames, and parallel clearer-bars extending in a curved plane eccentric to the axis of the comb-shaft and secured to the cross-bars, as described.

2. In a revolving comb, the combination with adjustable bearings, a shaft journaled therein, and a combing device, having teeth, mounted on the shaft, of a clearer-frame consisting of a series of parallel bars or strips adjustably supported eccentrically to the axis of the shaft and separated by spaces slightly greater than the diameter of the comb teeth.

3. In a revolving comb, the combination with side brackets, adjusting screws in the ends of the brackets, movable blocks furnished with inwardly extending bearings secured between the screws, a shaft journaled in the bearings, and a comb having fixed radial teeth mounted on the shaft, of end frames rotatable around the axis of the shaft, cross-bars connecting the end frames, and parallel curved strips, secured at the ends to the cross-



bars, extending eccentrically to the axis of the shaft and separated sufficiently to allow the comb-teeth to pass between the same, as described.

5 4. The combination with the brackets 14—14 having the ends 15—15, the screws 16—16 and 17—17 extending through perforations therein, the vertical pins 18—18 secured in the brackets, the blocks 19—19 provided with  
10 the slots 21—21, and the bearings 20 mounted in the brackets, the shaft 22 journaled in the bearings, the plates 30—30 secured to said shaft, the cross-bars 31 connecting the plates

30, and the teeth 32—32 secured in the cross-bars, of the end frames 24—24 mounted on 15 the inner ends of the bearings and having arms 25 and 26, the bars 27 and 28 secured to these arms and connecting the two frames, and the curved strips 29—29 secured to the bars 27 and 28 and extending as described. 20

In witness whereof I have hereunto set my hand.

JAMES C. POTTER.

Witnesses:

M. F. BLIGH,

J. A. MILLER, Jr.