

G. S. COLBURN.  
Cane-Shaving Machine.  
No. 216,723. Patented June 24, 1879.

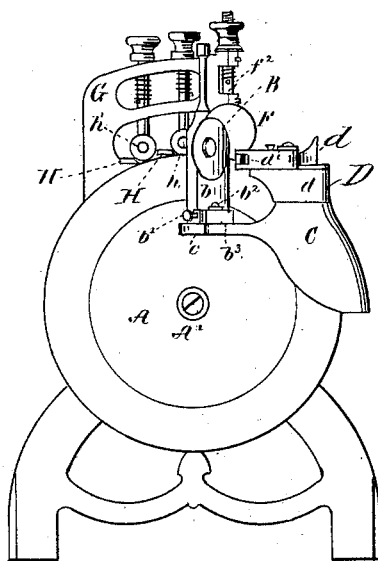


Fig. 1.

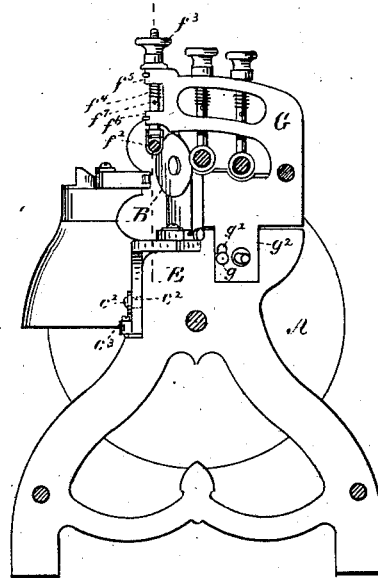


Fig. 2.

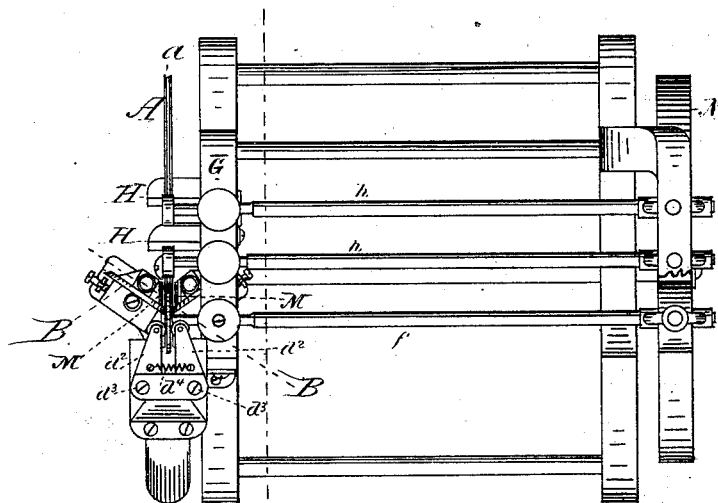
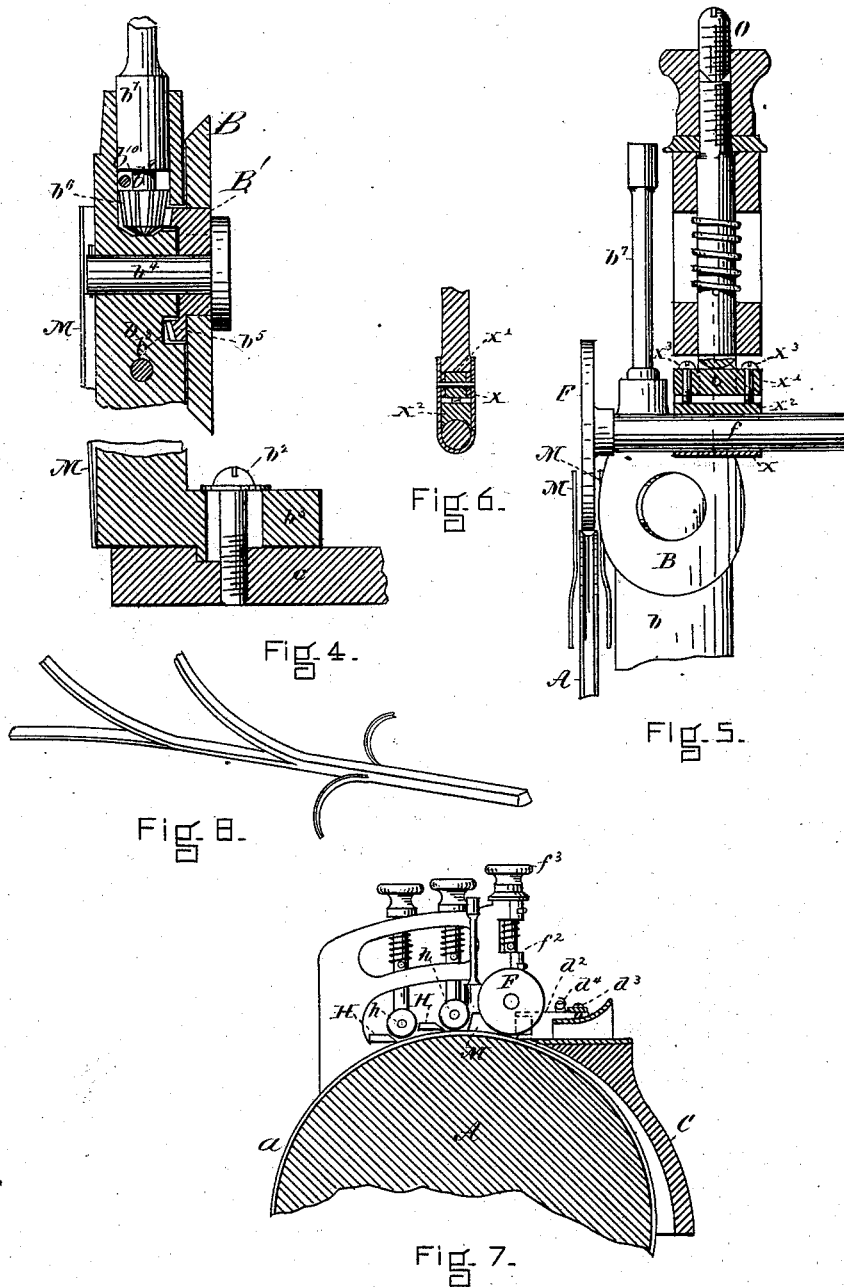


Fig. 3.

WITNESSES.  
*F. F. Raymond & Co.*  
*A. J. Oettinger.*

INVENTOR.  
*Geo S Colburn.*

G. S. COLBURN.  
Cane-Shaving Machine.  
No. 216,723. Patented June 24, 1879.



WITNESSES.

*F. T. Raymond*  
*A. J. Cettinger*

INVENTOR.

*G. S. Colburn*

# UNITED STATES PATENT OFFICE.

GEORGE S. COLBURN, OF GARDNER, MASSACHUSETTS, ASSIGNOR TO  
HEYWOOD BROTHERS & CO., OF SAME PLACE.

## IMPROVEMENT IN CANE-SHAVING MACHINES.

Specification forming part of Letters Patent No. **216,723**, dated June 24, 1879; application filed  
March 24, 1879.

*To all whom it may concern:*

Be it known that I, GEORGE S. COLBURN, of Gardner, in the county of Worcester and Commonwealth of Massachusetts, have invented an Improvement in Cane-Shaving Machines, of which the following is a specification.

This invention consists in providing a machine for shaving rattan and other cane with means whereby the feedway, trimming and gaging disks, pressure-rolls, and shaving-knives are given a variety of adjustments in relation to the feed-roll for increasing its capacity and utility.

In the drawings, Figure 1 represents an end elevation of my machine; Fig. 2, an elevation on the opposite side, showing the method of obtaining the adjustments named. Fig. 3 is a plan. Fig. 4 illustrates the method of adjusting the edge-trimming disks. Fig. 5 shows the method by which the pressure-roll is supported and adjusted. Fig. 6 is a detail view, further illustrating the construction of the device shown in Fig. 5. Fig. 7 is a view, part in elevation and part in section, to illustrate the construction and operation of the machine. Fig. 8 shows a piece of rattan-cane with its edges partly shaved by the edge-trimming devices and the strand partially shaved therefrom by the action of the shaving-knives.

The feed-roll A is provided with the circumferential groove *a*. It is made of steel and is secured to the driving-shaft A' in such a manner as to be removable, as it is necessary to take it off from time to time to renew the groove.

The disks B are each supported by a post, *b*, having horizontal adjustment in relation to the feed-roll upon the arm *c*, projecting from the hood-piece C, by means of the set-screws *b*<sup>1</sup> *b*<sup>2</sup> and slots *b*<sup>3</sup>.

The hood-piece or bracket C carries a table, D, which supports the mouth-piece *d*, and is fastened to the frame E by the set-screw *e*<sup>1</sup>, and, by means of said set-screw and slot *e*<sup>2</sup> and screw *e*<sup>3</sup>, the said bracket, together with the mouth-piece and cutting-disks, is vertically adjustable in relation to the feeding-roll.

The feedway to the rolls is provided with the flaring mouth-piece *d* and the rolls *d*<sup>1</sup>, hav-

ing their axes at right angle to the line of feed, each of which is supported at the end of an arm, *d*<sup>2</sup>, pivoted at *d*<sup>3</sup> to the table D. These arms are fastened together by the spring *d*<sup>4</sup>, and their opposing faces form the continuation of the feedway from the end of the mouth-piece to the point of contact of the pressure and feeding rolls.

The pressure-roll F is fastened at the end of its operating-shaft *f*, and it is provided with a vertically-yielding adjustment in relation to the circumference of the feed-roll by means of the box *f*<sup>1</sup> upon the end of the yielding rod *f*<sup>2</sup>, which is supported by the clamping-nut *f*<sup>3</sup> on the bracket G.

The spring *f*<sup>4</sup> surrounds the rod, and between the bearing *f*<sup>5</sup> and *f*<sup>6</sup> bears against the pin *f*<sup>7</sup> and gives the requisite stress or tension to the pressure-roll.

The box furnishing the bearing of the pressure-roll shaft is made, preferably, as shown in Fig. 6, of the hanger *x*, which is fastened to the block *x*<sup>1</sup>, and the piece *x*<sup>2</sup>, which forms the upper half of the box and is made adjustable in relation to the block *x*<sup>1</sup> by means of the set-screws *x*<sup>3</sup>. This construction provides for the necessary adjustment of the box to the changes occasioned by wear. As the bearing portion of the piece *x*<sup>2</sup> becomes worn it is moved downwardly.

The bracket G carries the shaving-knives H, arranged to project across the feed-roll, one beyond the other.

In front of each of these knives is a small pressure-roll, *h*, arranged to bear upon the feed-roll, and provided with yielding vertical adjustment in relation to the feed-roll in the same manner and by like means as described in connection with the pressure-roll F. They are fastened at the end of their respective shafts *h*<sup>1</sup>, and are provided with bearings in boxes supported by the bracket G in the same manner as the box *x*<sup>1</sup>. The bracket G, carrying the pressure-rolls and shaving-knives, is provided with vertical adjustment upon the frame E, by means of the set-screw *g* and slot *g*<sup>1</sup>, and the portion *g*<sup>2</sup> is arranged to fit within a recess of corresponding shape in the frame E to properly secure the bracket to the frame. Between the upper one of these pressure-rolls *h* and the

cutting-disks, and fastened to the posts *b*, are the spring-guides *M*. They project above the circumference of the feed-roll, one upon each side, and serve to hold the strand in the groove while it is passing from the first pressure-roll to the second.

The shafts *f* and *h'* are operated in any suitable manner, but preferably by rolls upon the end of each, arranged to contact with the periphery of wheel *N* on shaft *A'* and to be revolved thereby.

The check-nut *f*<sup>3</sup>, for adjusting the rod supporting the pressure-roll shafts, is provided with the short locking-screw *o*, which is loosened when adjustment is made, and is tightened against the end of the screw upon the said rod in locking the same.

The cutting-disks *B* are provided with means for revolution, whereby, as the portion of the cutting-edge in use becomes dull, a new edge may be presented. This adjustment is effected by supporting each disk *B* upon a gear-wheel, *B'*, which is provided with a suitable bearing on the stud *b*<sup>4</sup>, projecting from the post *b*. This gear-wheel is provided with the bevel-gear *b*<sup>5</sup> upon its inner surface, and which is arranged to mesh with the bevel-gear *b*<sup>6</sup> on the lower end of the shaft *b*<sup>7</sup>. To enable this to be accomplished the post *b* is provided with a circular recess, *b*<sup>8</sup>, into which the said bevel-gear projects.

The disk may be fastened upon the gear-wheel by keying or by a nut, or by a head upon the stud, or in any other suitable manner.

The shaft has suitable bearing in the post, and is fastened therein by means of the collar *b*<sup>9</sup>, which surrounds the same just above the bevel-gear *b*<sup>6</sup>, and also forms a support therefor, as the shaft is somewhat reduced in size at that point, and the collar fits over the reduced portion, allowing the shoulder *b*<sup>10</sup> to bear upon the upper edge of the collar. The pressure-rolls may be corrugated or roughened.

In operation the trimming-disks are adjusted horizontally in relation to the edge of the feed-roll to the gage which it is intended that the strand to be shaved shall have. The shaving-knives are adjusted vertically in relation to the roll to secure the gage for the thickness of the strand. The piece is then introduced through the mouth-piece between the vertical guiding-rolls, with the strand-forming part lowermost, and is laid hold of by the feed and pressure rolls, which advance it to the action of the shaving-knives, which remove a narrow, thin strip from each edge of the piece. This determines the width of the strand. The strand, advancing by the continued action of the pressure and feed rolls, is passed between the vertical guides attached to the cutting-disk posts, is laid hold of by the second pressure-roll in the train presented to the first knife, which partially reduces its thickness, and then to the second pressure-roll and knife, which removes a second strip, and reduces it to the desired thickness.

It will be observed that the guiding-rolls

have automatic adjustment for varying widths of strands; that the said guiding-rolls, mouth-piece, and cutting-disks and pressure-rolls are vertically adjustable in relation to the circumference of the feed-roll; that the cutting-disks are provided with horizontal adjustment not only for the purpose of gaging the width of the strand, but also to enable the disks to be moved as they wear away from frequent sharpening; and that the shaving-knives and their pressure-rolls are adjustable vertically in relation to the feed-wheel. By thus making the parts adjustable to the feed-wheel in the manner set forth, not only are varying widths and thicknesses of strands shaved in the same machine, but, as the feed-roll wears, the devices named are readily adjusted to the new position produced by shortening the diameter of the roll without changing their relative positions.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a machine for shaving rattan or other cane, the combination of a revolving feed roll or bed, a revolving pressure-roll arranged to co-operate with said feed-roll in feeding the cane, with the gage-disks *B*, supported upon the posts *b*<sup>1</sup>, the hood-piece *C*, and means for vertically adjusting the same, substantially as and for the purposes described.

2. In a machine for shaving rattan or other cane, the combination of a feedway provided with yielding sides with a revolving feed roll or bed, revolving yielding pressure-roll, and the trimming and gaging disks *B*.

3. In a machine for shaving rattan, the combination of the feedway provided with yielding sides and with vertical adjustment in relation to the feed-roll, the shaving-disks *B*, provided with horizontal and vertical adjustments in relation to said feed-roll, said feed-roll or bed, and a revolving yielding pressure-roll vertically adjustable, all arranged to operate substantially as described, and for the purposes set forth.

4. The combination of the hood-piece or bracket *C*, having the arms *c*, upon which the posts carrying the trimming and gaging disks are horizontally adjusted, and supporting the feedway, with means for adjusting the same vertically upon the frame *E*, all substantially as described.

5. In a machine for shaving rattan, the spring-guides *M*, horizontally adjustable in relation to the feed-roll, and arranged between the posts carrying the shaving-disks, all substantially as and for the purposes described.

6. The combination of the cutting-disk *B*, supported by the gear-wheel *B'*, the said gear-wheel having a bearing on the stud *b*<sup>4</sup>, and provided with the bevel-gear *b*<sup>5</sup>, the stud *b*<sup>4</sup>, with the operating-stem *b*<sup>7</sup>, having a suitable bearing in the post *b*, and its bevel-gear *b*<sup>6</sup>, all substantially as and for the purposes described.

7. In a machine for shaving rattan or other cane, as a means for supporting the shaft carrying the pressure-rolls, a box consisting of

the hanger  $x$ , the block  $x^1$ , the bearing-piece  $x^2$ , vertically adjustable, and the supporting-rod  $f^2$ .

8. As a means for adjusting a pressure-roller in a machine for shaving rattan or other cane, the rod  $f^2$ , carrying the box supporting the shaft, and having suitable bearings, with a clamping-nut arranged to be locked by the short screw  $o$  bearing upon the end of said rod, substantially as described.

9. In a machine for shaving rattan or other cane, the combination of a bracket supporting the pressure-rolls and the shaving-knives with set-screws  $g$  and slot  $g^1$ , whereby the pressure-rolls and shaving-knives are provided with vertical adjustment in relation to the feed-roll

upon the frame E, all substantially as described, and for the purposes set forth.

10. In an organized cane-shaving machine, the combination of the bracket or hood-piece C, which supports the feedway and the gaging-disks, and is provided with vertical adjustment upon the frame E, the feed-roll A, and the bracket G, which supports the pressure-rolls and shaving-knives, and has vertical adjustment upon the frame E, all arranged substantially as described, and for the purposes set forth.

GEO. S. COLBURN.

Witnesses:

F. F. RAYMOND, 2d,  
A. J. OETTINGER.