(No Model.) 4 Sheets—Sheet 1.

E. BARTH.

CIGAR BUNCHING MACHINE.

No. 530,254. Patented Dec. 4, 1894.

Fig. 2.

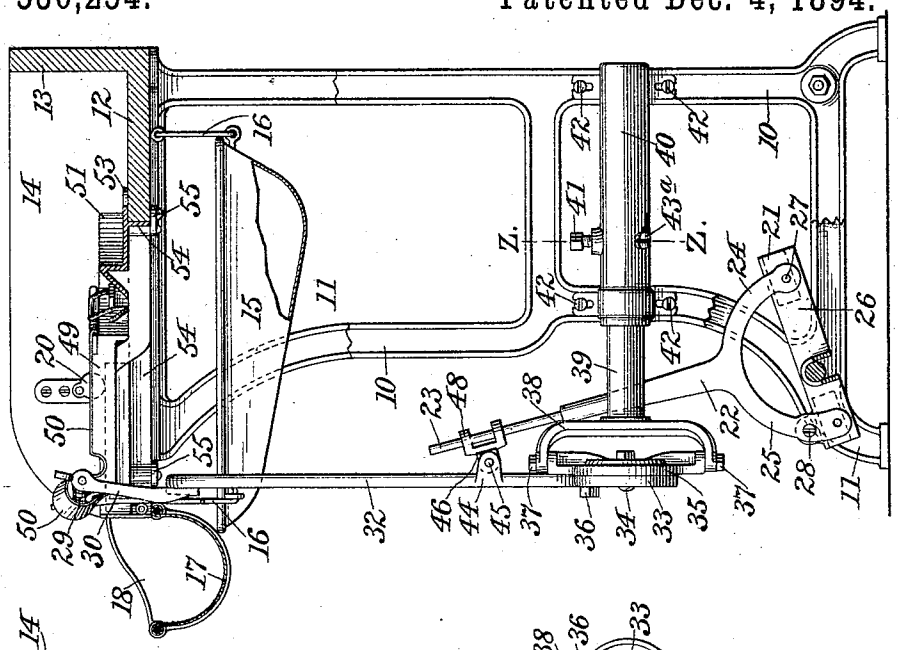
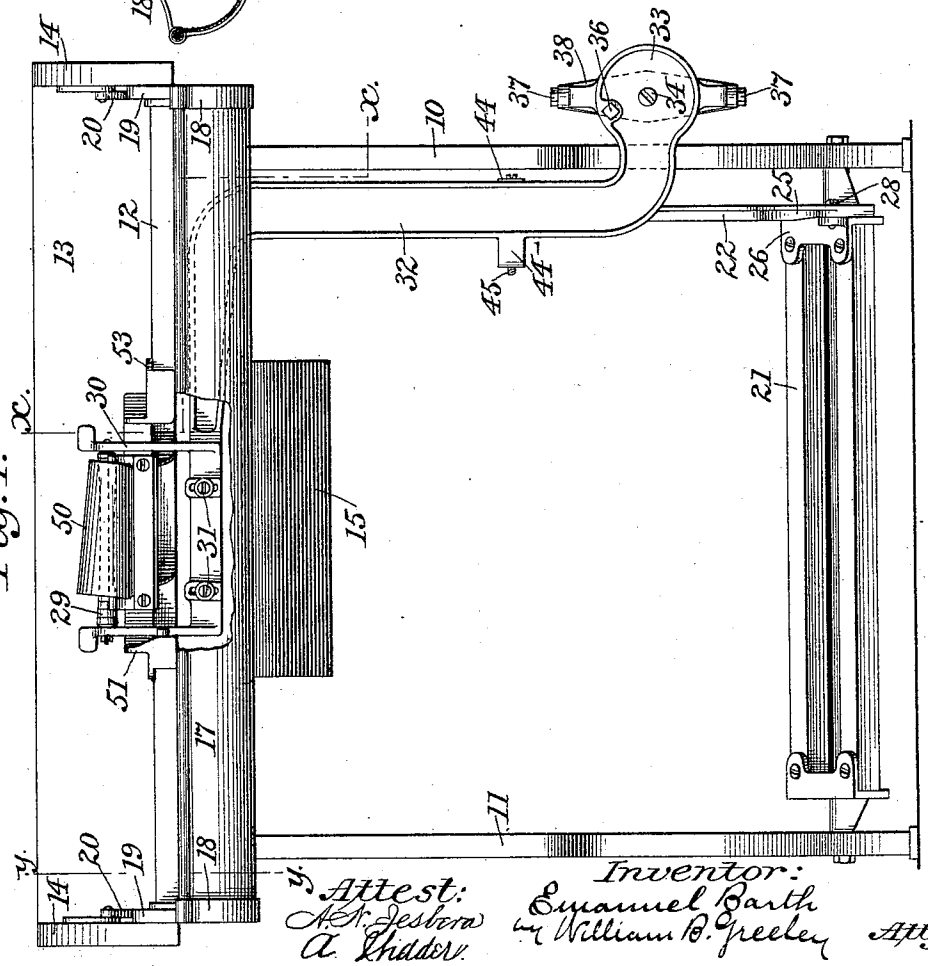


Fig. 1.



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A. Shidder.

Inventor:
Emanuel Barth
by William B. Greeley Atty.

(No Model.) 4 Sheets—Sheet 2.

E. BARTH.

CIGAR BUNCHING MACHINE.

No. 530,254. Patented Dec. 4, 1894.

Fig. 4.

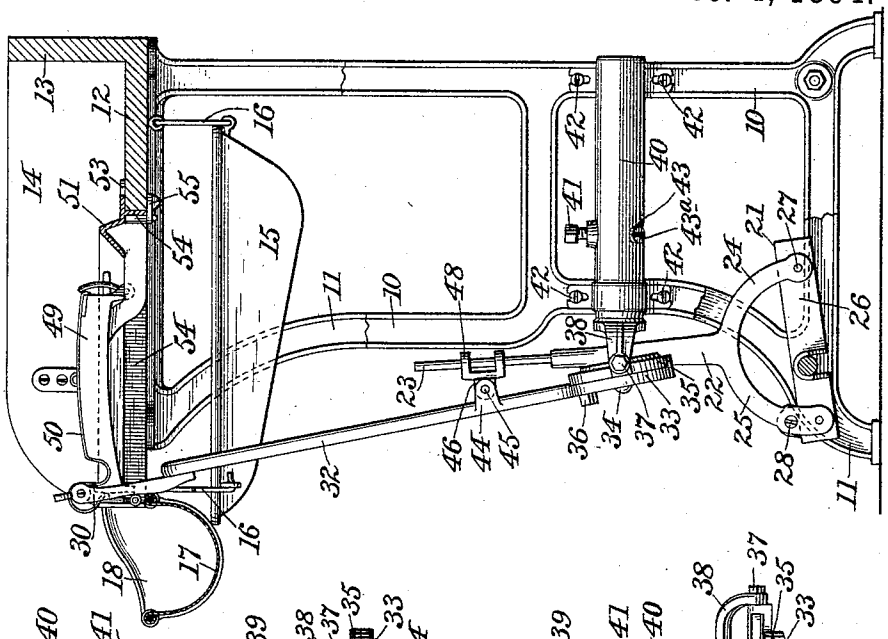


Fig. 3.

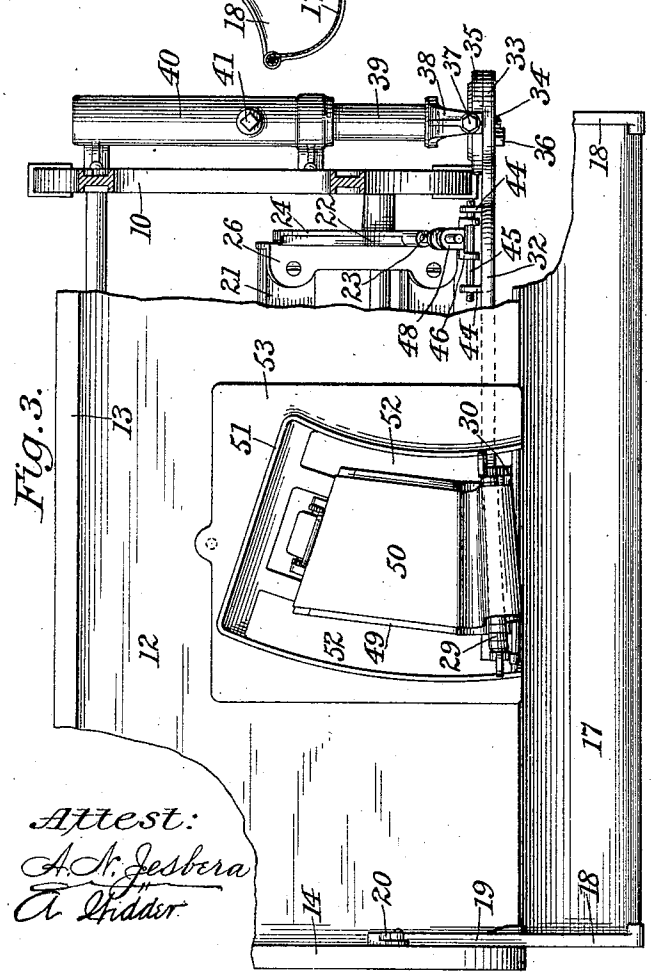
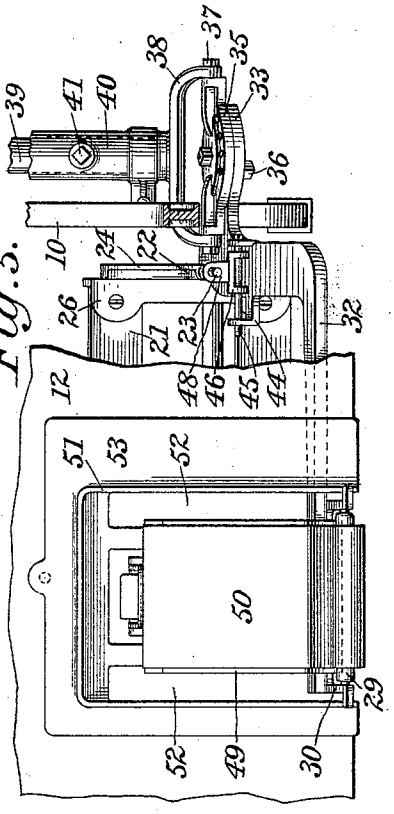


Fig. 5.



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4 Sheets—Sheet 3.

E. BARTH.

CIGAR BUNCHING MACHINE.

No. 530,254. Patented Dec. 4, 1894.

Fig. 8.

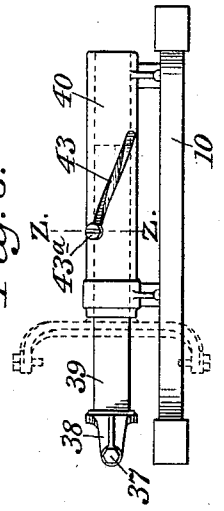


Fig. 9.

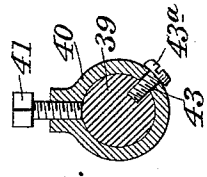


Fig. 10.

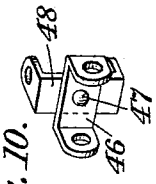


Fig. 6.

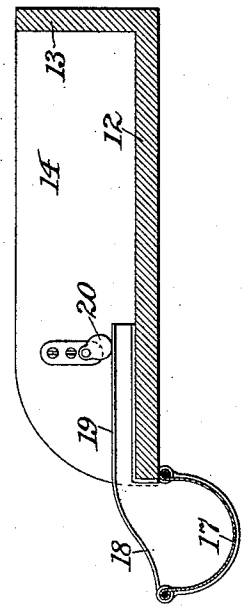
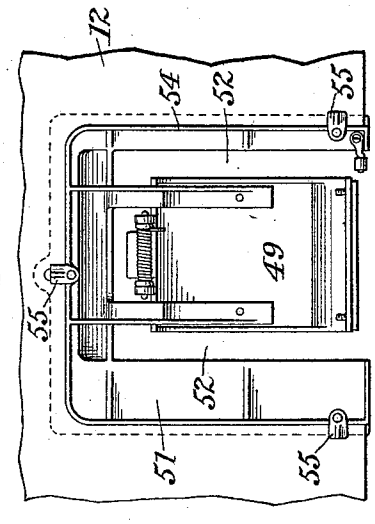


Fig. 7.



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A. Hidder.

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(No Model.) 4 Sheets—Sheet 4.

E. BARTH.

CIGAR BUNCHING MACHINE.

No. 530,254. Patented Dec. 4, 1894.

Fig. 12.

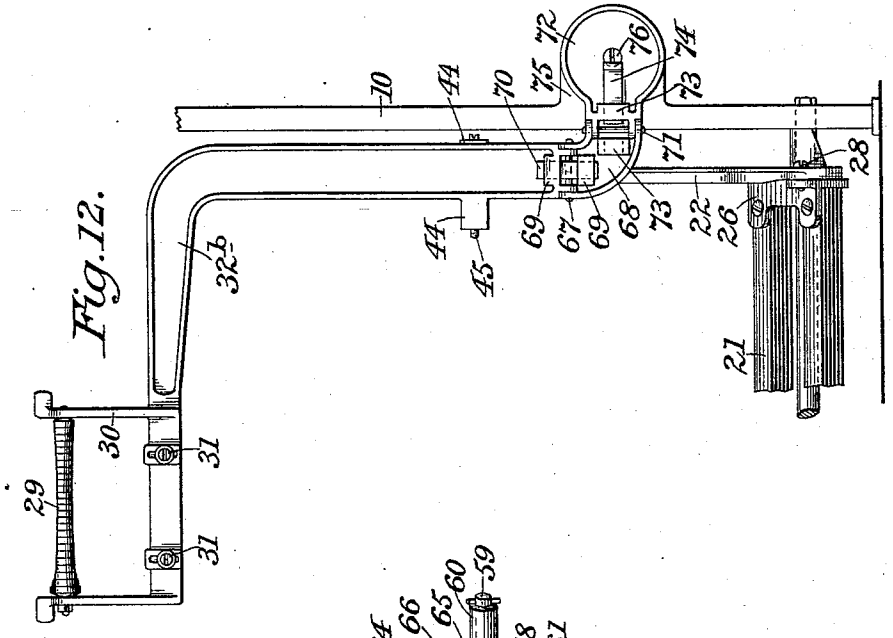
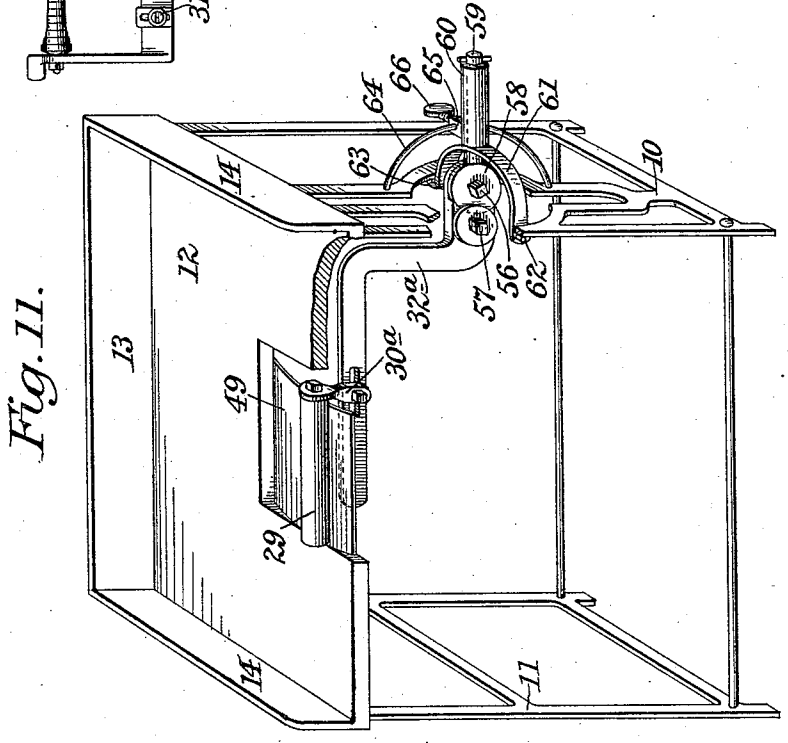


Fig. 11.



Attest:
A. N. Jesbera.
A. Hidder

Inventor:
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Atty.

UNITED STATES PATENT OFFICE.

EMANUEL BARTH, OF NEW YORK, N. Y.

CIGAR-BUNCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 530,254, dated December 4, 1894.

Application filed April 26, 1894. Serial No. 509,048. (No model.)

To all whom it may concern:

Be it known that I, EMANUEL BARTH, of the city, county, and State of New York, have invented certain new and useful Improvements in Cigar-Bunching Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

This invention relates to those machines which are used in the manufacture of cigars for the purpose of forming and rolling the bunch of filler which constitutes the body of a cigar. Heretofore machines of this general character have been of two classes, namely, those which are adapted to form a bunch which is cylindrical except so far as the shape is varied somewhat by changing the shape of the rolling board or the shape of the bunching roller, and those which are adapted to form tapering bunches. So far as is known no attempt has been made to produce a machine which is capable of rolling either substantially cylindrical or tapering bunches at will, but for each shape a separate machine is provided. Accordingly it is the main object of the present invention to produce a machine which shall be capable of use either for rolling cylindrical bunches or for rolling tapering bunches, as may be required.

To this end the invention consists primarily in the provision of a roller-carrier which is so supported that the position of the axis of oscillation may be varied with respect to the axis of the bunching roller and the latter be permitted to oscillate in a substantially flat plane as a radius or in a curved plane. As a further advance provision is also made, as will hereinafter more clearly appear, whereby the roller-carrier may be so adjusted as to its axis of oscillation that the bunching roller may move in any path between the two extremes which are determined by an axis of oscillation parallel with its own axis and an axis of oscillation disposed at a right-angle thereto, whereby a machine may be used for the manufacture of a great variety of shapes. Incidentally to this main object it has been sought to improve the machine in other particulars to the end that a more efficient and generally satisfactory machine may be produced than any of those now upon the market.

I have hereinafter shown and described in detail a certain specific construction which thus far has proved to be adapted for carrying out the main object of the invention and I have also shown and described other constructions which may be used for the same purpose. It will be understood, however, that I do not intend to limit the scope of my invention to any one or all of the constructions shown, for the essential features might be embodied in other forms and arrangements.

In the drawings: Figure 1 is a front elevation of an approved form of the improved machine, partly broken out. Fig. 2 is an end elevation of the machine, partly in section on the irregular plane of the line x—x of Fig. 1, the lower portion of the end standard being also partly broken away. Fig. 3 is a plan view of the machine with a portion of the table broken away to show parts beneath. Fig. 4 is a view corresponding to Fig. 2 but showing the machine adapted for rolling cylindrical bunches, with a different rolling-board substituted for that shown in Fig. 2. Fig. 5 is a detail plan view corresponding to Fig. 3, but with the parts in the position indicated in Fig. 4. Fig. 6 is a transverse section through the table on the line y—y of Fig. 1, illustrating the means for supporting the upper trough or pan. Fig. 7 is an under side view of a portion of the table and rolling board, to illustrate the means for securing the latter in position. Fig. 8 is a detail bottom view of a portion of the mechanism to be hereinafter more particularly referred to. Fig. 9 is a transverse section on the line z—z of Figs. 2 and 8 on a larger scale. Fig. 10 is a detail perspective view of the coupling between the treadle and the swinging arm. Fig. 11 is a perspective view partly broken out illustrating a different form of the supports for the swinging arm. Fig. 12 is a partial front elevation of the machine, illustrating still another mode of supporting the swinging arm.

The machine in its usual form comprises end frames or standards 10, 11, which support a work-table 12. The latter is provided as usual with a back-board 13 and side or end boards 14. The table supports the rolling

board, which will be referred to more particularly hereinafter, and it also supports the pans or troughs which receive the waste tobacco. The pan 15 is hung by links 16 beneath the rolling board to receive such portions of the filler as may drop from the rolling board. The pan 17 which receives the tobacco which may be brushed from the table and consists of fragments of wrapper may be so supported as to withstand more or less pressure and at the same time as to be readily removable whenever required for the purpose of emptying either pan or to permit the rolling board to be changed. Accordingly the pan consists of a long trough of sheet metal the ends of which are secured to substantial end pieces 18, each of which has a rearwardly extending arm 19 adapted to rest upon the top of the table 12 close to the corresponding end board 14. A latch 20 is pivoted upon each end board and is adapted to be turned down upon the arm 19 beneath it to hold the same firmly in place while permitting its ready removal when required. It will be seen that the pans are wholly independent of each other and that the mixing of filler and wrapper is therefore prevented.

In the lower portions of the end frames is supported the treadle through which motion is transmitted to the roller-carrier hereinafter referred to. At one end of the treadle 21 is rigidly secured an arm 22 which carries at its upper end a rod 23. The arm 22 may be adjustable with reference to the foot-board to promote the convenience of the operator and for this purpose is formed with a yoke composed of members 24, 25. The member 24 of the yoke is secured to the end piece 26 of the foot-board by a pin 27 while the other member 25 has a slot through which may be passed the screw 28 which engages an ear on the end piece.

As is usual in machines of this general character, the bunch is formed by the cooperation of a rolling-board, an apron or cloth, and a bunching roller which is so supported as to be moved back and forth. In the machine represented in Figs. 1, 2, and 3 a bunching roller 29 is mounted in a yoke 30 which is adjustably secured by bolts 31 to the end of an arm or carrier 32. Heretofore this arm or carrier has been so supported as to be capable of movement upon an axis which always occupies the same position with respect to the axis of the bunching roller. It is the object of this invention, as hereinbefore stated, to support this arm in such a manner that it may move upon any one of two or more axes which are differently disposed with respect to the axis of the bunching roller 29, the movement of the bunching roller 29 being varied accordingly. The preferred means for supporting the arm will presently be described.

As shown in Figs. 1 to 5 the arm 32 terminates in a plate 33 which is secured by a bolt 34 to a second plate 35 in such a manner as to permit of rotation of one plate with respect to the other. The two plates are secured together in adjusted position by any suitable means, such as are indicated by the clamping bolt 36. The plate 35 is mounted on trunnions 37 in the arms of a yoke 38 which is mounted on the end of a stud 39, the axis of the stud coinciding with the axis of rotation of the plates 33 and 35. The stud 39 is mounted in a suitable bearing, preferably in a sleeve 40 so that it may be turned therein, being held in its adjusted position by any suitable means, such as a set-screw 41. The sleeve 40 may be adjustably secured to the standard 10 by bolts 42. As it is desirable for convenience in supporting the different parts that the yoke 38 should be brought more or less toward the front according to the degree of its angular adjustment, I prefer to form an inclined slot 43 through the sleeve 40, as represented clearly in Fig. 8, and to fix in the stud 39 a pin 43^a whose head engages said slot and thereby compels a movement of the yoke toward the front or rear according to the direction of its angular adjustment.

As represented in Figs. 1, 2, and 3 of the drawings the yoke 38 is so placed that the pivots 37 of the plate 35 shall stand in a line which is at right angles to the axis of the bunching roller thereby permitting the arm 32 to oscillate or swing as a radius in a flat plane. As represented in Figs. 4 and 5 the pivots of the plate 35 stand in a line parallel with the axis of the bunching roller and the arm 32 therefore swings in a curved plane about an axis parallel with the axis of the bunching roller. It is obvious that between these two extremes the arm 32 may have any other axis of oscillation, with respect to the axis of the bunching roller as determined by the angular position of the yoke 38, the clamping bolt 36 being loosened at each adjustment to permit of the required rotation of the plate 35 with respect to the plate 33.

The movement of the arm 32 varies according to the disposition of its axis of oscillation but I have provided such a connection between the treadle and the arm that no manipulation thereof is required, the connection being self adjusting. In lugs 44 upon the rear side of the arm 32 is mounted a spindle 45 upon which a yoke 46 is mounted to slide and to turn freely. The yoke 46 is pivotally attached by a swivel-bolt 47 to a second yoke 48 which receives through its arms the rod 23 and is free to slide and to turn on said rod. This connection constitutes a universal, swivel joint which adjusts itself according to the movement of the arm 32 without the attention of the operator and which at the same time maintains an operative connection between said arm and the treadle. It is obvious that the rolling-board may require to be changed with the different adjustments of the axis of the bunching roller-carrier. Thus, as represented in Figs. 1, 2, and 3, the rolling board is substantially flat and horizontal, since the bunching roller moves, when the

parts are in the position represented, in a flat plane. When the arm 32, however, swings upon an axis disposed at a right angle to the axis of the bunching roller, as represented in Figs. 4 and 5, then the rolling board 49 must be more or less convex to correspond with the path of movement of the bunching roller. For intermediate positions of the axis of oscillation other rolling boards likewise should be provided. Accordingly it is desirable that the substitution of one rolling board for another should be easily made. The apron or cloth 50 is secured as usual to the rolling board, and the latter is supported within a frame 51 which has openings 52 at each side of the rolling board to permit the required movement of the yoke 30. The frame 51 is also provided with a horizontal flange 53 which may rest upon the top of the table 12, and with a vertical flange 54 which fits snugly within the opening formed in the table. Upon the bottom of the frame 51 are the pivoted buttons 55 which may be turned after the frame 51 has been set in place to hold the same securely.

In Fig. 11 of the drawings is represented an arrangement of parts for supporting the swinging arm or roller carrier so that it may oscillate upon one axis or another, as required, which arrangement is substantially the same as that previously described but differs somewhat in detail. The table 12 and the standards 10, 11 are substantially the same as those represented in the figures of the drawings before referred to, the standard 10 being so formed as to suit the arrangement of the mechanism. The rolling board 49 is represented as adapted for the rolling of a cylindrical bunch and the bunching roller itself is supported by a single bracket 30^a which is adjustably secured to the swinging arm 32^a. The latter is adjustably secured by a pivot bolt 56 and a clamping bolt 57 to a plate 58 which, as before, is secured upon the end of a stud 59. The sleeve 60 which furnishes a bearing for the stud 59 is carried by a yoke 61 which is mounted to swing on pivotal bearings 62, 63, on the standard 10. A curved rod 64, concentric with the axis of oscillation of the yoke 61, is fixed to the standard 10 and is engaged by a block 65 on the sleeve 60, a set-screw 66 being provided to retain the yoke and sleeve in desired position. As represented in Fig. 11 the parts are so arranged as to permit the arm 32^a to swing upon an axis parallel with the axis of the bunching roller, whereby the latter may move to and fro in a curved plane substantially parallel with the surface of the convex rolling board 49, the axis of the roller being always parallel with the position of the axis indicated by the position of the bunching roller represented in said figure. If it is desired that the arm shall swing upon an axis which is disposed at a right angle to the axis of the bunching roller, so that the bunching roller shall move as a radius in a flat plane, the clamping bolt 57 and the set-screw 66 are loosened and the sleeve and yoke are swung until the sleeve, and consequently the axis of the stud 59, stand in the same vertical plane with the pivots of the yoke. The clamping bolt and the set-screw are then turned to hold the parts in their new positions. It is obvious that the sleeve and yoke might be secured in any intermediate position whereby the arm 32^a is given a movement corresponding to the position of its axis of oscillation. The means for imparting movement to the swinging arm in this case may be the same as the means previously described and therefore are not shown or further referred to.

In Fig. 12 is also represented an arrangement of the means for supporting the swinging arm so that it may oscillate upon one axis or another with reference to the axis of the bunching roller. The means shown in said figure attain the same result as the means previously described, in so far as they permit the oscillation of the arm either upon an axis which is parallel with the axis of the bunching roller or upon an axis which is disposed at a right angle thereto, with a slight range of departure from these two extremes. The means represented are simpler than those previously described and therefore less expensive, but they are less desirable because they do not permit a disposition of the axis of oscillation at any desired angle between the two extremes. The bunching roller 29 is supported by a yoke 30 which is adjustably secured by bolts 31 to the arm or carrier 32^b. The latter is mounted with a hinged joint 67 upon an elbow piece 68. Lugs 69, 69, are formed upon the adjacent ends of the two parts referred to and a locking bar 70 is slipped through both of said lugs to make the joint rigid when required. The elbow 68 is connected by a hinge 71 with a plate 72, lugs 73, 73 and a locking bar 74 being provided to make the joint 71 rigid when required. The plate 72 may be rigidly secured to the standard 10 or it may be held to a flange 75 which forms a part of the standard 10 by a pivot bolt 76 so that some slight adjustment of said plate upon said support will be possible. It will be obvious, without further description, that if the locking bar 74 be withdrawn while the locking bar 70 is in place, the arm 32^b will swing upon an axis which is disposed at a right angle to the axis of the bunching roller. Similarly, if the bar 70 be withdrawn, while the bar 74 is in place, the arm will be permitted to swing upon an axis which is parallel with the axis of the bunching roller. Movement may be imparted to the arm 32^b, in the operation of the machine, by the same means as those previously described, the footboard 21 and its arm 22 being shown in part in Fig. 12.

I prefer to make the bunching roller 29 of a series of independent sections, as represented most clearly in Fig. 12, because, as the sections rotate independently, there is less

rubbing between the apron and bunching roller in making tapering bunches and it also becomes possible to make the rolling board more or less concave. It is also possible to place one or more sections of much larger diameter than the other about where the end of the bunch comes and thereby to prevent the creeping of the bunch outwardly.

The operation of machines of the general character referred to is well understood and need not be further described herein.

I claim as my invention—

1. In a cigar bunching machine, the combination with a bunching roller, of a supporting standard, a carrier for said bunching roller supported to oscillate upon said standard, and means whereby the position of the axis of oscillation may be varied with respect to the axis of the bunching roller and the latter be permitted to oscillate in a flat plane as a radius or in a curved plane.

2. In a cigar bunching machine, the combination with a bunching roller, of a standard, a carrier for said bunching roller supported to oscillate on said standard, means whereby the position of the axis of oscillation may be varied with respect to the axis of the bunching roller and the latter be permitted to oscillate in a flat plane as a radius or in a curved plane, and means for imparting movement to said carrier.

3. In a cigar bunching machine, the combination with a bunching roller, of a supporting standard, a carrier for said bunching roller supported to oscillate upon said standard, and means whereby the position of the axis of oscillation may be varied with respect to the axis of the bunching roller and the latter be permitted to oscillate in a flat plane as a radius or in a curved plane, a treadle and a connection intermediate said treadle and carrier whereby motion may be imparted to the latter.

4. In a cigar bunching machine, the combination with a bunching roller, of a standard, a carrier for said bunching roller supported to oscillate on said standard, means whereby the position of the axis of oscillation may be varied, and means for imparting movement to said carrier, a foot-board, an arm rigidly connected to said foot-board and a universal swivel coupling between said arm and said carrier.

5. In a cigar bunching machine, the combination with a bunching roller, of an arm to support the same, an axial bearing upon which said arm may oscillate, and means to support said bearing in different positions with respect to the axis of the bunching roller and the latter be permitted to oscillate in a flat plane as a radius or in a curved plane.

6. In a cigar bunching machine, the combination with a bunching roller, of an arm to support the same a plate to which said arm is adjustably secured, a yoke in which said plate has its axis of oscillation, said yoke being adjustable about its own axis, and means to support and to retain said yoke in adjusted position.

7. In a cigar bunching machine, the combination with a bunching roller, of an arm to support the same a plate to which said arm is adjustably secured, a yoke in which said plate has a bearing for oscillation, a stud supporting said yoke, and a bearing for said stud in which the same is adjustable about its own axis.

8. In a cigar bunching machine, the combination with a bunching roller, of an arm to support the same, a yoke in which said arm has a bearing for oscillation, a stud supporting said yoke, a sleeve bearing for said stud, said sleeve having an inclined slot, and a pin fixed in said stud and engaging said slot.

9. In a cigar bunching machine, the combination with a bunching roller, of an arm to support the same, an axial bearing upon which said arm may oscillate, means to support said bearing in different angular positions with respect to the axis of the bunching roller and the latter be permitted to oscillate in a flat plane as a radius or in a curved plane, a treadle and a connection from said treadle to said arm whereby movement may be imparted to the latter.

10. In a cigar bunching machine, the combination with the work-table having end-boards, of a trough-like pan, end-pieces having arms to rest upon said table adjacent to the end-boards, and latches secured to said end-boards to bear upon said arms.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EMANUEL BARTH.

Witnesses:
A. N. JESBERA,
A. WIDDER.