

W. G. SCHOETTLE.
MACHINE FOR TURNING IN THE EDGES OF THE COATING PAPER OF BOXES.
1,046,658. APPLICATION FILED DEC. 5, 1904. Patented Dec. 10, 1912.
5 SHEETS—SHEET 1.

Fig. 6.

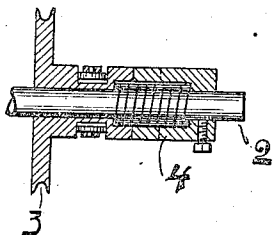
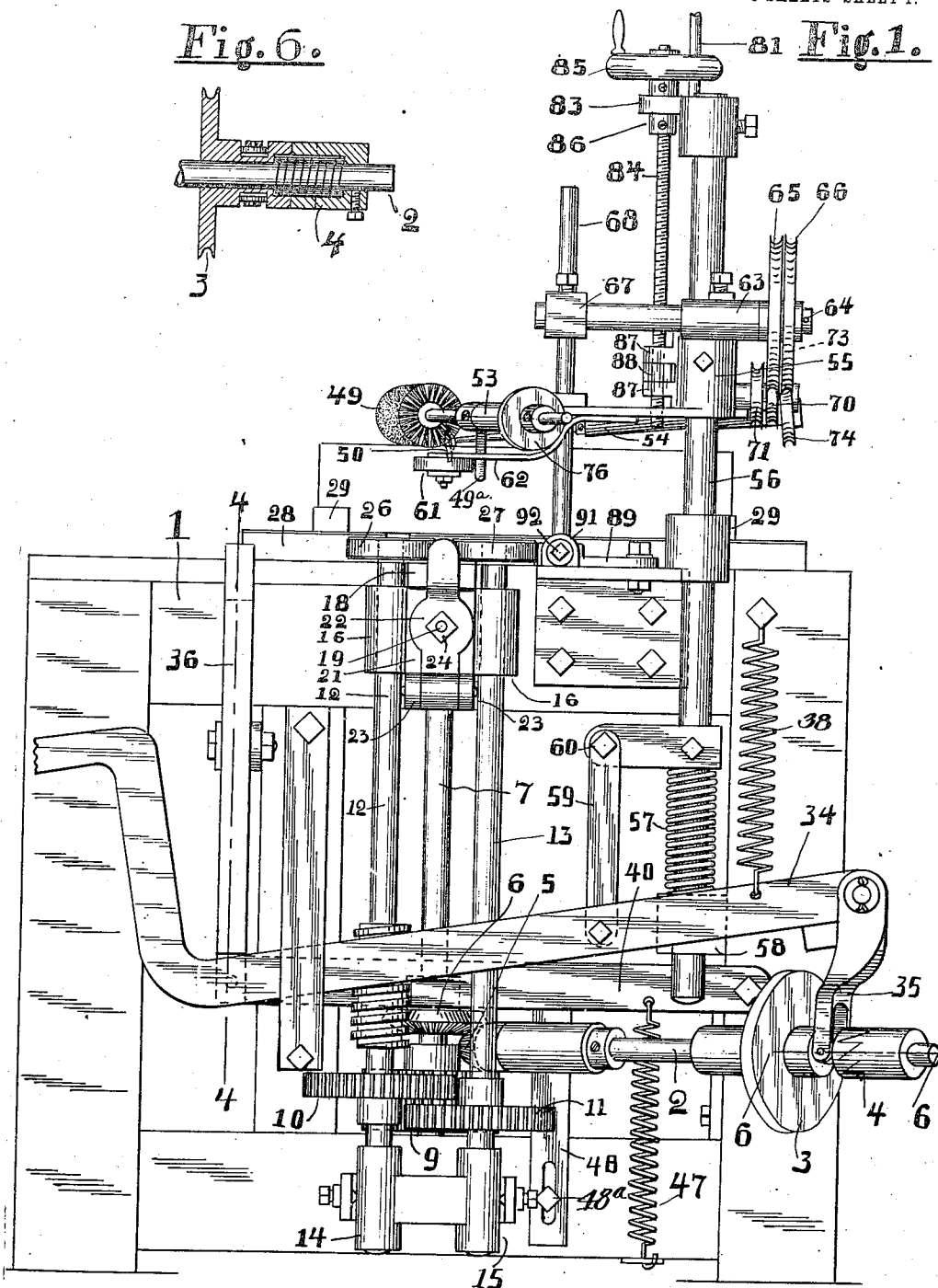


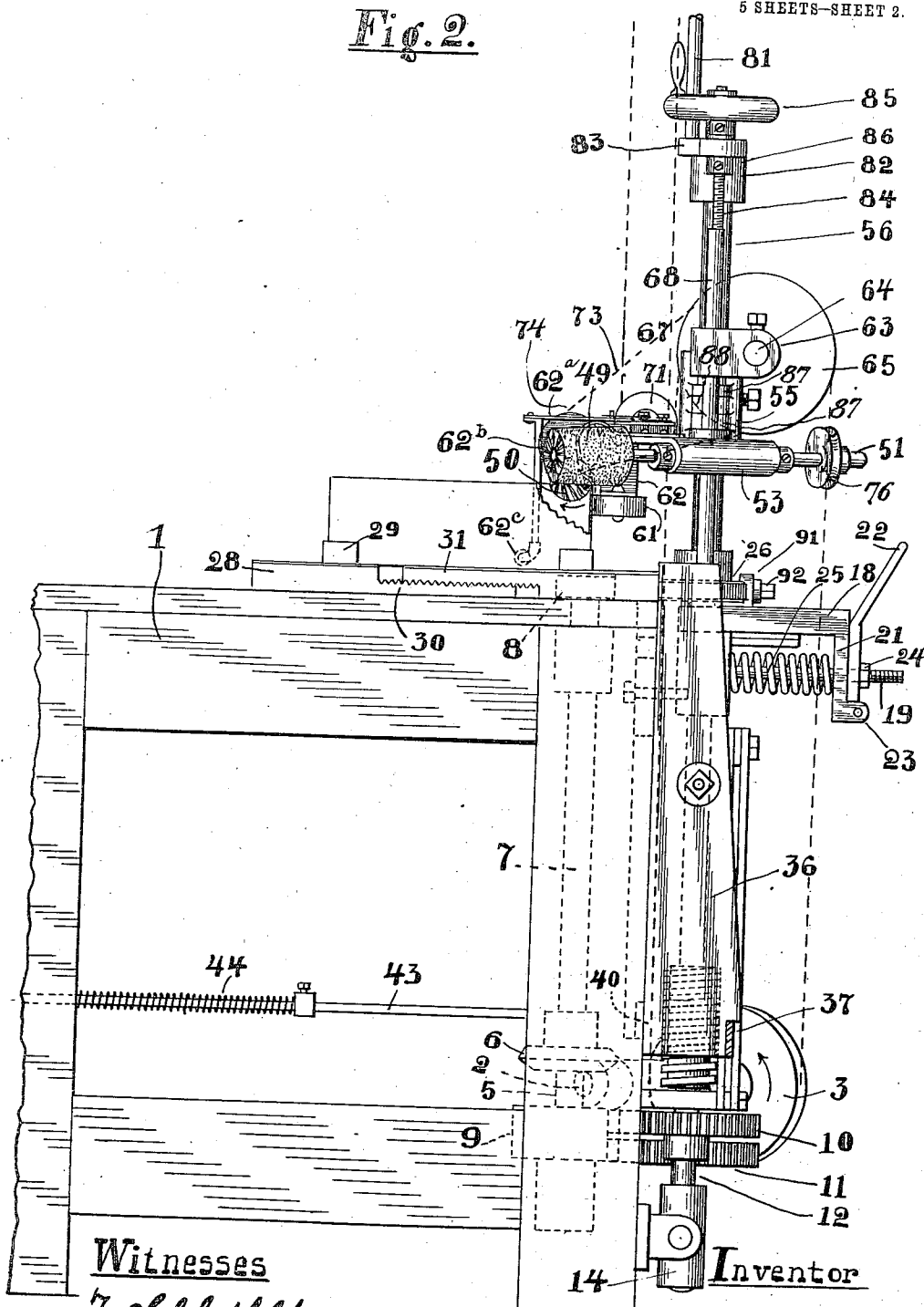
Fig. 1.



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Fig. 2.



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5 SHEETS-SHEET 3.

Fig. 3.

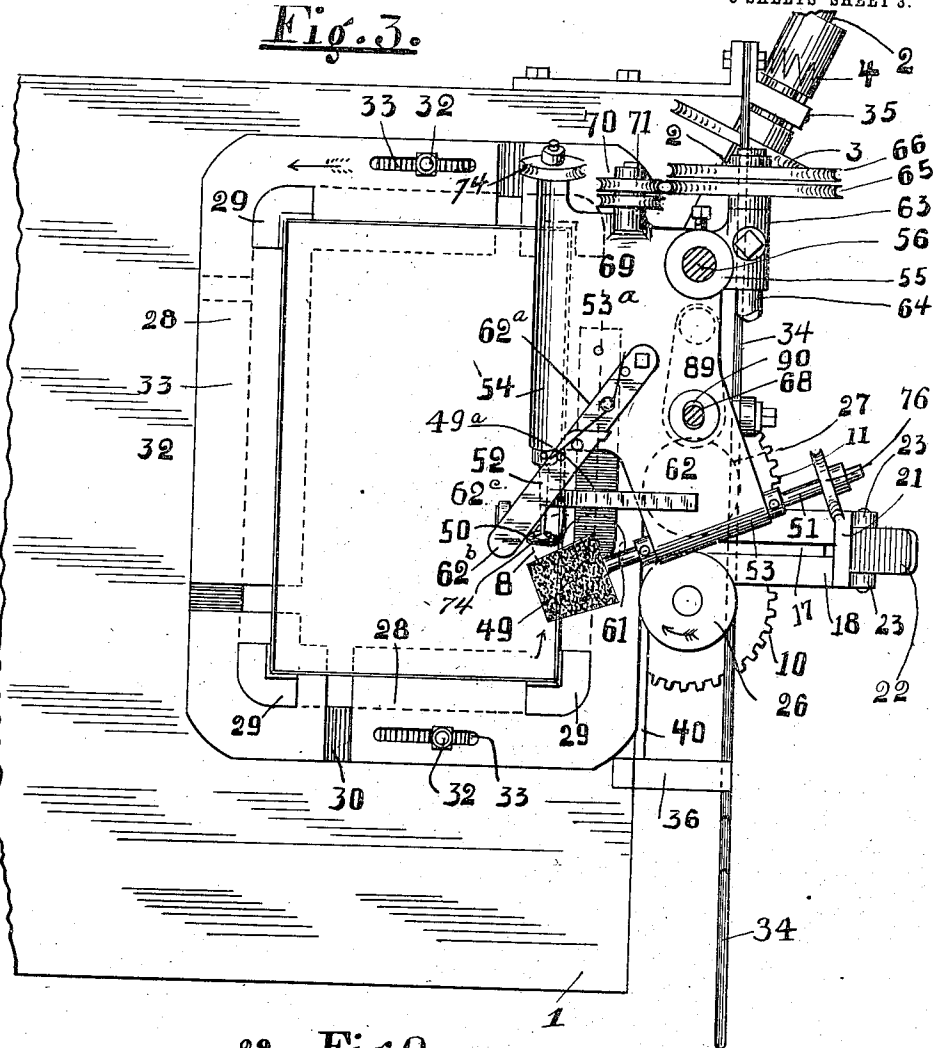


Fig. 9.

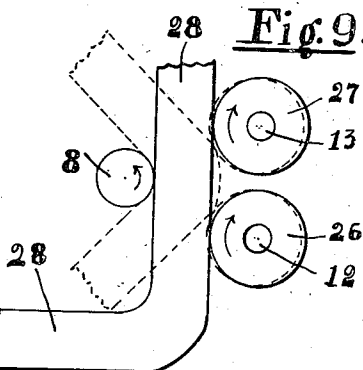
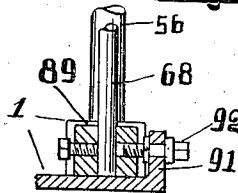


Fig. 8.



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5 SHEETS—SHEET 4.

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Fig. 5.

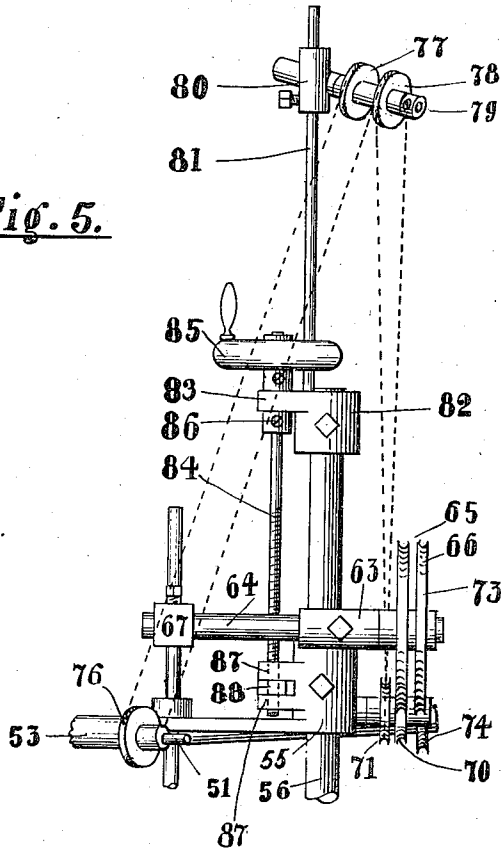


Fig. 4.

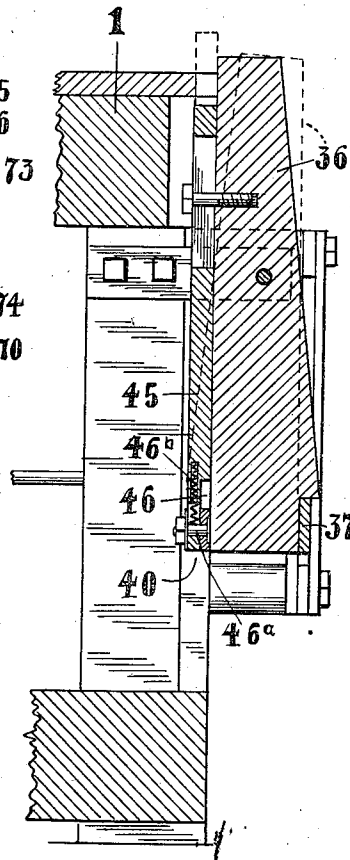
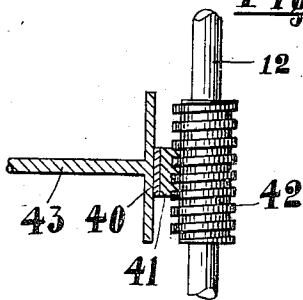


Fig. 7.



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5 SHEETS—SHEET 5.

Fig.10.

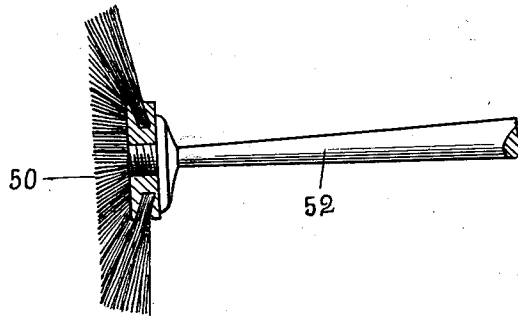


Fig.12.

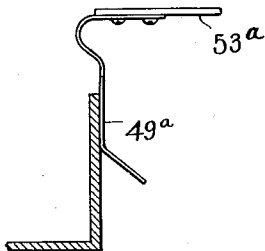
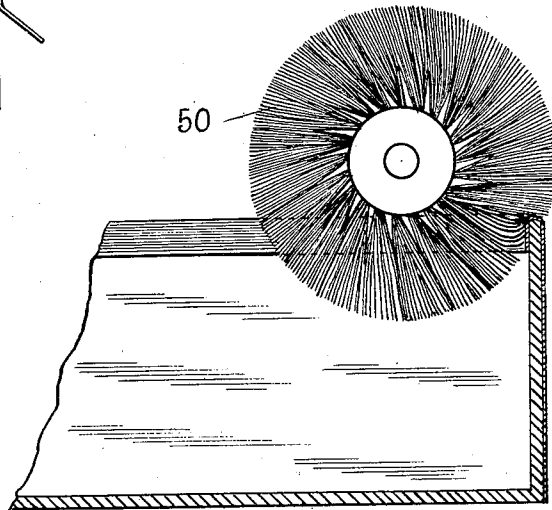


Fig.11.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR TURNING IN THE EDGES OF THE COATING-PAPER OF BOXES.

1,046,658.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed December 5, 1904. Serial No. 235,554.

To all whom it may concern:

Be it known that I, WILLIAM G. SCHOETTLE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Turning in the Edges of the Coating-Paper of Boxes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to machines for turning the edges of the covering paper of paper boxes inwardly over the edges of the box or cover and compressing it against the inner faces of the walls of the box or cover, said operation following immediately after the application of the covering paper and before the adhesive material applied thereto has dried.

The object of the present invention is to provide mechanical means for turning the covering paper over the edge of the box and causing it to adhere to the inside of the box, and I accomplish this object by means of the mechanism as hereinafter described, the novel features being pointed out in the annexed claims.

In the accompanying drawings illustrating this invention and forming a part of this specification, Figure 1 represents a side elevation of a machine constructed in accordance with this invention. Fig. 2 is a front elevation of the same. Fig. 3 is a top view of the same. Fig. 4 is a vertical sectional view of the trip lever 36 shown on the plane of the broken line 4-4, Fig. 1. Fig. 5 is a view in elevation, of a portion of the driving mechanism for the rotating brushes. Fig. 6 is a sectional view of the driving clutch shown on the plane of the line 6-6, Fig. 1. Fig. 7 is a detached view of the worm 42 and its engaging rack 40, shown in sectional view. Fig. 8 is a detached sectional view of the adjusting mechanism for swinging the supporting standard 68 and connected brush bearings. Fig. 9 is a diagrammatic illustration showing in plan view the manner of rotating the frame carrying the box operated upon. Fig. 10 is a detached view of the rotating brush, partly shown in section, which is employed for pressing the covering paper against the inside of the box. Fig. 11 is an

end view of the brush shown in Fig. 10, illustrating its relation to the side of the box during the operation of turning in the covering paper, and Fig. 12 is a detached view of the deflecting finger 49^a and showing its relation to the side of the box which is operated upon.

Similar reference letters and figures refer to similar parts in the different views.

It has been customary in machines of this class, so far as I am aware, to move the edge of the box against the brushes or other turning-in devices, by causing the box to rotate about a fixed axis. When the sides of the box are circular the turning-in devices can be readily arranged in the path of the rotating box, but when the boxes are polygonal, mechanism is required to adjust the brushes to the path of the box sides. By means of the present invention I maintain the turning-in brushes in a fixed position, and provide mechanism for controlling the movement of the box so that each of its sides is made to move in a straight line past the brushes. To accomplish this result I impart a series of rotative movements to the box about axes at or near the corners of the box, so that each point in the edges of a polygonal box is made to pass through a given fixed point and be operated upon by the turning-in brushes held in a fixed position.

The machine embodying my present invention comprises therefore the following instrumentalities, rotating brushes held in fixed bearings in proper relation to the sides of the box to act upon the projecting covering strip; means for supporting a box upon its bottom leaving its edges free to be acted upon by the rotating brushes; means for moving the edges of the box in a straight line past the rotating brushes; means for imparting a rotative movement to the box at each of its corners.

So far as I am aware it is broadly new to combine the instrumentalities enumerated above in a machine for turning in the covering paper upon a polygonal box, whereby each of its sides is moved in a straight line past fixed turning-in devices.

Referring to the accompanying drawings 1 denotes the framework, comprising a table suitably supported, in which is journaled a driving shaft 2 provided with a pulley 3 and clutch 4, which serves to connect said

shaft 2 with any suitable source of power. The inner end of the driving shaft 2 carries a bevel pinion 5 which meshes with a bevel gear 6 on a vertically disposed shaft 7 journaled in the framework, and carrying upon its upper end a friction roller 8 which projects above the table. The shaft 7 carries a spur gear 9 which meshes with spur gears 10 and 11 on vertically disposed shafts 12 and 13, journaled at their lower ends in swinging bearings 14 and 15, and at their upper ends in journal boxes 16, attached to a guide member 17 which is horizontally movable in a slotted guide 18 rigidly secured to the framework. The guide member 17 carries a screwthreaded rod 19 which passes through a downwardly extending flange 21 on said guide 18, and also through an opening in a lever 22 pivotally secured at its lower end in and between two projections 23 at the lower end of the flange 21.

The screwthreaded rod 19 carries a nut 24 on its free end which serves as a collar to engage the lever 22. A spiral compression spring 25 is interposed between the guide member 17 and the flange 21, and the lever 22 serves as a means for drawing said guide member toward said flange against the action of the spring 25. The upper ends of the shafts 12 and 13 carry friction rollers 26 and 27 which project above the table and are in the same horizontal plane as the roller 8.

Between the rollers 8, 26 and 27, as illustrated in diagram in Fig. 9, a frame 28 is held which is moved by the rotation of the rollers, said frame being horizontally disposed and adjustable in size, and provided on each of its four corners with a corner plate 29 adapted to receive the corners of the box to be operated upon. The frame 28 consists of four L-shaped members having arms of different lengths, with two diagonally opposite members provided adjacent to the lower faces of their arms with extensions 30 having teeth and forming racks, said extensions being of less width than the arms of said members and flush with the outer edges thereof. The other two diagonally opposite members are provided on their lower faces with toothed flanges 31 which mesh with the racks 30 and serve to hold all the members firmly in the position to which they are adjusted, the interlocking racks being clamped together in any suitable manner, as by bolts 32 passing through slots 33. The rollers 8, 26 and 27 engage the inner and outer edges respectively of the racks 30 and flanges 31, and thereby cause said frame to travel peripherally, the corners of the latter being rounded to permit the frame to turn at each corner. As the frame 28 which supports the box to be operated upon is moved by the rotation of the rollers 8, 26 and 27, each side of the

frame will be moved in a straight line, and the frame will be given a rotative movement at each of its corners as the rounded corners of the frame pass between the rollers. The corner plates 29 which receive the box to be operated upon are arranged to hold the sides of the box in a vertical plane parallel with the axis of rotation of the roller 8, and as the rounded corners of the frame pass between the rollers, the roller 8 forms the fulcrum about which the frame turns. The rollers 26 and 27 are held in a yielding contact with the frame by the spring 25 in order to permit the corner of the frame to pass between the outer rollers 26 and 27 and the inner roller 8.

Pivotally secured at one end to the framework is a lever 34 which is provided with a downwardly extending deflected arm 35 which engages one member of a clutching mechanism 4. Near its free end the lever 34 passes through a vertical guide in the framework and is arranged to be engaged by a vertically disposed trip lever 36, pivotally secured to the frame about midway between its ends and provided at its lower end and upon its outer face with a recess 37 adapted to receive the lever 34 and hold it in a depressed position against the action of a spring 38 connecting the pivoted lever with the rigid framework. A second lever 40 is pivoted at one end to the framework with its free end adapted to engage the lower end of the trip lever 36. Attached to the lever 40 is a short rack 41 which is adapted to mesh with a worm 42 carried on the vertical shaft 12. The rotation of the worm 42 engaging the rack 41 causes the free end of the lever 40 to be raised until the rack 41 is carried out of engagement with the worm. A horizontally disposed rod 43 is provided with a T-shaped end which is held in contact with one side of a lever 40 by means of a spiral compression spring 44. The tension of the spring 44 presses the T-shaped end of the rod 43 against the side of the lever 40 in order to hold its rack 41 in engagement with the worm 42 during the limit of movement of the lever.

Secured to the inner face of the trip lever 36 and movable longitudinally with relation thereto is a plunger 45 having at its lower end a longitudinal slot 46 through which a bolt 46^a passes into the free end of the lever 40. Held in plunger 45 and bearing against the bolt 46^a is a spiral spring 46^b in order to hold said plunger normally at the upper limit of its movement relatively to the lever 40. When the lever 40 is raised by the engagement of its rack 41 with the worm 42 the upper end of the plunger 45 is moved above the table into the path of the frame 28 as the latter completes a revolution, causing the upper end of the plunger 45 to be thrown

outwardly and rocking the trip lever 36 on its pivot to release the lever 34 which is immediately raised by the tension of the spring 38, thereby throwing the clutching mechanism 4 out of engagement.

The yielding connection of the plunger 45 with the lever 40 prevents the frame 28 from being lifted by the plunger in the event the latter should strike the lower face of the frame when moving upwardly. When the trip lever 36 is turned to release the lever 34, as above described, it moves the free end of the lever 40 against the action of the spring 44, thereby carrying the rack 41 out of alignment with the worm 42, allowing the lever 40 and plunger 45 to be immediately moved by gravity to the lower limits of their movement, where they will remain until the free end of the lever 34 is again depressed. The downward movement of the lever 40 is determined by a vertically adjustable slotted stop plate 48 secured to the framework by a bolt 48^a.

The covering paper is applied to the box before it is fed to the machine and projects beyond the upper edge of the side walls of the box usually from $\frac{1}{8}$ " to $\frac{1}{2}$ " which must be turned inwardly and downwardly and compressed smoothly against the inner faces of the side walls of the box before the adhesive material applied to the covering paper has been allowed to dry.

The covering paper is frequently tender by reason of its thinness and its moist condition, and it becomes necessary that it should be manipulated so as to prevent its being turned, and at the same time the operation must be completed with great rapidity. To effect this I turn the paper inwardly by means of one brush, and downwardly by means of another brush, which also serves to compress the turned in covering paper against the inner sides of the box, said brushes being revolved at high speed and being constructed and arranged to produce the desired result at the corners as well as on the straight sides of the box.

The brushes 49 and 50 are carried upon the ends of shafts 51 and 52 journaled in bearings 53 and 54 formed upon a horizontal bracket or plate 53^a, which is integral with a collar 55 longitudinally adjustable on a vertical standard 56, which is supported on the lever 34, and on a compression spring 57 bearing at its lower end upon a bracket 58 projecting from the framework, and in which bracket the vertical standard 56 is capable of longitudinal movement. The vertical standard 56 is connected with the lever 34 by means of a link 59 which is pivoted at one end to the lever 34 and at its opposite end to an arm 60 rigidly attached to the vertical standard 56. The spring 57 is interposed between the bracket 58 and the arm 60.

The shaft 51 carrying the rotating brush 49 lies in a horizontal plane but is placed at an oblique angle to the side of the box as it passes beneath the brush, so that the bristles of the brush travel over the paper to be turned in, in substantially the same direction as that in which the box moves, but at an angle thereto, so that the planes in which the bristles rotate intersect the planes of the walls of the box and, owing to the greater surface speed of the brush, the projecting edge of the covering paper will be turned or deflected inwardly toward the middle of the box by the brush 49 and carried into the path of the brush 50. The brush 49 is preferably slightly tapered, so that the bristles will first engage only the extreme free edge of the covering paper, and the next adjacent longer bristles will engage the covering paper nearer the walls of the box, thereby making the turning over operation gradual.

It frequently happens that the projecting edge of the covering paper is turned backward, so that when the box is placed in the carriage or frame 28, and the brushes are brought into operative relation thereto, the latter cannot catch the free edge of the covering paper, and to overcome this difficulty I provide a spring finger 49^a which is secured at one end to the horizontal plate or bracket 53^a, with its free end depending normally in the path of the edge of the box, the extreme free end being curved slightly outwardly, and the portion immediately above the extreme free end being straight and vertically disposed, so that the outer faces of the walls of the box will bear against the spring finger. Above said straight portion the finger is bent to overhang the upper edges of the box forming a loop terminating at the point of fastening of said spring finger to the plate or bracket 53^a.

When the box is placed in position on the frame or carriage 28, the free projecting edge of the covering paper will be turned to a vertical position by its contact with the spring finger 49^a, and as the plate 53^a is lowered to bring the brushes into operative relation to the box the overhanging loop portion of the spring finger 49^a will turn the free edge of the covering paper inwardly, thereby bringing the edge into the path of the brush 49, by which it is further turned into the path of the brush 50. The pressure of the spring finger 49^a against the outer side of the walls of the box will serve in part to prevent the walls of the box from yielding to the pressure exerted by the brush 50.

The shaft 52 is inclined downwardly at the end carrying the brush 50, and lies in a vertical plane substantially parallel with the plane of the wall of the box being operated upon. The brush 50 is substantially disk-like and the bristles are disposed substantially tangential to the hub, and inclined

rearwardly from the radial lines relatively to the direction of rotation. The bristles of the brush 50 are also disposed at a slight inclination to the plane of the hub, so as to give the brush a dished effect, the object being to cause the bristles to travel vertically over the edge portion of the covering paper and brush the same constantly downward. The tangential disposition of the bristles also serves to enable greater pressure to be applied by the brush.

To prevent the walls of the box from yielding to the pressure exerted by the brush 50, I provide a roller 61 mounted on the end of an arm 62 secured to the plate 53^a and bearing against the outer faces of the walls of the box, as represented in Figs. 1, 2 and 3. An arm 62^a is secured to the plate 53^a and upon its free end it carries a downwardly extending foot piece 62^b, the lower end of which is provided with a caster wheel 62^c, which is arranged to bear on the bottom of the box and serve to hold the same downward against the box supporting carriage, and prevent the tipping or canting of the box.

Integral with the collar 55 is a horizontally disposed sleeve 63 which supports a rod 64 carrying at one end two loose pulleys 65 and 66, which are rigidly attached to each other. The opposite end of the rod 64 is secured in a sleeve 67 which is vertically adjustable on an upright standard 68. In a lower plane than the sleeve 63 and on the opposite side of the collar 55 is a journal 69 supported by the plate 53^a and supporting the two pulleys 70 and 71. The brush shaft 52 is provided with a pulley 74 and the brush shaft 51 with a pulley 76. Idler pulleys 77 and 78 are supported on a spindle 79 held by a collar 80 which is adjustably supported upon a vertical standard 81, held by a collar 82 attached to the upper end of the upright standard 56. The collar 82 has a projecting lug 83 through which loosely passes an adjusting screw 84 provided with a hand wheel 85 and a collar 86 which holds the adjusting screw from longitudinal movement in the bracket 83. The adjusting screw 84 passes loosely through two projecting lugs 87 on the collar 55, and between the lugs 87 is a nut 88 engaging the screw 84. By the adjusting screw 84 the collar 55 and plate 53^a carrying the bearings for the rotating brush shaft is raised and lowered on the standard 56 to vertically adjust the position of the brushes relatively to the height of the box.

As previously stated the standard 56 is pivotally connected by a link 59 with the lever 34, so that when the lever 34 is depressed to throw in the clutching mechanism, the standard 56 will be lowered at the same time and bring the brushes into operative position relatively to the box. When the

lever 34 is released and raised by the spring 38, the standard 56 and the parts carried thereby will also be raised, carrying the brushes out of operative relation to the box. When a set of boxes of different depth are to be operated upon, the position of the brushes on the standard 56 may be adjusted to correspond by means of the adjusting screw 84. The position of the brushes may also be adjusted in a horizontal plane in order to regulate the pressure exerted by the brush 50 to cause the firm adhesion of the covering paper to the inside of the box. The horizontal adjustment is accomplished as follows:—The upright standard 68 is mounted on the free end of an arm 89 pivotally secured to the table, and the standard passes through a slot 90 in the plate 53^a, serving to hold the plate 53^a and standard 56 against rotation. A lug or projection 91, Fig. 8, is provided at the edge of the table and carries a screw 92 which enters a screw threaded opening in the free end of the arm 89. The screw 92 is held from longitudinal movement in the projection 91 so that the rotation of the screw in either direction will swing the lever 89 together with the upright standard 68 and plate 53^a. The idler pulleys and the pulleys attached to the rotating shafts are preferably scored, and have suitable belt connections by which the rotatable shafts are driven.

I claim as my invention:

1. In a machine of the kind described, the combination with a table, a carriage movable thereon and adapted to support a box, means engaging said carriage to move the same, whereby each point in the upper edge of the box is passed through a given point, and means for turning a coating paper over the edge of the box as the carriage is moved.

2. In a machine of the kind described, the combination of a table, a carriage movable thereon and adapted to support a box, means engaging said carriage to move the same, whereby each point in the upper edge of the box is passed through a given point, and rotating devices disposed in the path of the upper edge of the box and adapted to turn a coating sheet over the edge of the box.

3. In a machine of the kind described, the combination of a table, a carriage movable thereon and adapted to support a box, means engaging said carriage to move the same and bring each point in the edge of the box through a given point, and a pair of rotating brushes disposed in the path of the edge of the box and adapted to turn a coating paper over said edge.

4. In a machine of the class described, the combination with a horizontal box support adapted to support a polygonal box in an upright position by its bottom, mechanism for moving each point in the upper edge of the box through a given point, and mecha-

nism for turning in a covering paper over the edge of the box as the box is moved.

5 5. In a machine of the kind described, the combination of means for supporting a polygonal box by its bottom, means for moving each point in the edge of the box through a given point, means for imparting a partial rotative movement to the box at each of its corners, and means for turning in a covering paper over the edge of the box as the box is moved.

10 6. In a machine of the kind described, a box support adapted to support a polygonal box in a vertical position by its bottom, means for moving the sides of the box successively in straight lines, means for imparting a rotative movement to the box as each of its corners pass a given point, and turning in devices applied to the edges of the box.

20 7. In a machine of the kind described, the combination of a carriage support, a carriage movable thereon and adapted to support a box, means for engaging said carriage to move the same, whereby each point in the edge of the box is passed through a given point, and means for adjusting said carriage to receive boxes of different sizes.

25 8. In a machine of the kind described, the combination with a pair of rotating brushes having their axes placed at an angle to each other and journaled in fixed bearings, of means for moving the sides of a polygonal box in a straight line past said brushes.

30 9. In a machine of the kind described, a horizontal table, a box supporting carriage movable thereon, means for adjusting said carriage as to size in two directions, means for moving the carriage to cause each point in the edge of a box supported thereon to pass through a given point, and means at a fixed point for turning a coating paper over the edge of the box.

35 10. In a machine of the kind specified, a traveling polygonal frame forming a carriage adapted to support the box by its bottom with its upper edge free, means for contracting and expanding said frame laterally and longitudinally, and means for imparting movement thereto to cause every point in the upper edge of the supported box to travel successively through a given point, and means interposed in the path of the upper edge of the box to turn in the projecting edge of the covering paper.

40 11. In a machine of the kind specified, the combination with a polygonal frame forming a carriage for the box, having means for supporting the outside of the box leaving the inside of the box free, of rotating means engaging the said frame to cause each side thereof to pass successively through a given plane.

65 12. In a machine of the kind specified, the combination with a polygonal frame form-

ing a carriage for the box, of rotating means having frictional engagement with said frame to cause each point in the periphery thereof to pass substantially through a given plane perpendicular to the plane of said 70 frame.

13. In a machine of the kind specified, the combination with a polygonal frame forming a carriage to support the box, and rotating means having frictional engagement 75 with said frame and adapted to impart longitudinal rotary and lateral movement thereto, whereby the sides of the box are successively moved through a given plane, of means disposed in the path of the free edge 80 of the supported box to engage the projecting edge of the coating paper thereof to turn the same inwardly.

14. In a machine of the kind specified, the combination with a polygonal frame forming a carriage to support a box, and means having yielding frictional engagement with said frame adapted to impart a longitudinal, a rotary and a lateral movement thereto, of means disposed in the path of the free edge 90 of the supported box for engaging the projecting edge of the coating paper of said box to turn the same inwardly.

15. In a machine of the kind specified, the combination with a frame to receive the box, and means for imparting longitudinal rotary and lateral movement to said frame, of rotating brushes disposed in the path of the free edges of the box to engage the coating paper to turn same inwardly. 100

16. In a machine of the kind described, the combination with means for supporting a box by its outside with its inside free, of means for moving each point in the upper edge of the box through a given point, a rotating brush at an angle to the side of the box, and a second rotating brush with its axis at an angle to the axis of said first rotating brush, said brushes being arranged in the path of the edge of the box. 110

17. In a machine of the kind specified, the combination with rotating brushes disposed at an angle to each other and adapted to engage and turn in the projecting edges of the coating paper of a passing box, of means 115 for imparting movement to said box to cause each point in the upper edge thereof to pass through a given fixed point and in operative relation to said brushes, and means common to said brushes and said means for moving 120 said brushes out of operative relation to said box.

18. In a machine of the kind specified, the combination with rotating brushes for turning in the covering paper, of means for supporting a polygonal box upon its bottom, means for moving each side of a polygonal box in a straight line past said brushes, means for imparting a partial rotative movement at each corner of the box, and means 130

for adjusting said brushes toward or away from the box.

19. In a machine of the kind specified, the combination with a carriage for supporting
5 and revolving a box and rotating brushes disposed in the path of said box, of means for imparting movement to both said brushes and said carriage, and operative means for the same, comprising a clutch for said carriage,
10 a lever for said clutch and connection between said lever and said brushes.

20. In a machine of the kind specified, the combination with rotating brushes and a movable support therefor, and a carriage
15 arranged to receive a box and to rotate said box, of a clutch for said carriage, a lever for said clutch, and connection between said lever and said support, said connection arranged to move said support to bring said
20 brushes into operative relation to said box simultaneously with the operation of said clutch to rotate said carriage.

21. In a machine of the kind specified, the combination with rotating brushes and
25 means for imparting movement thereto, of a frame adapted to receive the box, a continuous peripheral projection on said frame, a roller engaging said projection on the inner face thereof, a pair of rollers engaging
30 the outer face thereof, and gearing common to all of said rollers for rotating same.

22. In a machine of the kind specified, the combination with rotating brushes and means for imparting movement thereto, of a
35 frame adapted to receive the box, a continuous peripheral projection on said frame, a roller engaging said projection on the inner face thereof, a pair of rollers engaging the outer face thereof, gearing common to
40 all of said rollers for rotating same, a clutch controlling said gearing, and means for throwing out said clutch after each revolution of said carriage.

23. In a machine of the kind specified,
45 the combination with rotating brushes and means for imparting movement thereto, of a frame adapted to receive the box, a continuous peripheral projection on said frame, a roller engaging said projection on the inner
50 face thereof, a pair of rollers yieldingly engaging the outer face thereof, and gearing common to all of said rollers for rotating same.

24. In a machine of the kind specified, the
55 combination with rotating brushes and a movable support therefor, of a carriage adapted to support a box and to rotate said box in the paths of said brushes, means for rotating said carriage, a clutch for said
60 rotating means, a spring actuated lever for said clutch, means connecting said lever and said support, arranged to move said support when said clutch is thrown in against said spring, means for holding said lever against

the force of said spring, and means operated 65 by said carriage for releasing said lever.

25. In a machine of the kind specified, the combination with rotating brushes, a movable bracket supporting said brushes, a carriage adapted to receive the box, means
70 for imparting rotary motion to said carriage, a clutch controlling said last named means, a lever controlling said clutch and said carriage supporting said brushes, a
75 spring controlling the movement of said lever in one direction, a trip lever adapting the latter to hold same against the action of said clutch, and devices interposed in said means for rotating said frame and actuated
80 by said frame for operating said trip lever to release said clutch and impart movement to said carriage supporting said brushes.

26. In a machine of the kind specified, the combination with a traveling carriage for imparting movement to the box, of
85 means disposed in the path of the edges of the box for engaging and turning in the projecting edge portion of the covering paper, said means including a yielding deflecting
90 finger having a flat portion normally disposed in the path of the free edge portion of the coating paper and serving to primarily turn the same to a vertical position, said finger being provided with an over-
95 hanging portion adapted when the turning in means are brought into operative relation to said box to further turn in said free edge portion into the path of the remaining members of said turning in means.

27. In a machine of the kind specified, the
100 combination with a carriage adapted to support the box, gearing for rotating said carriage, rotating devices disposed in the path of said box and engaging the projecting edge of the covering paper to turn same inwardly, and a movable carriage supporting
105 said rotating devices, of a clutch controlling said gearing, a lever controlling said clutch, a spring engaging said lever to normally hold the same at the limit of its movement
110 in which the said clutch is released, connection between said lever and said carriage supporting said rotating devices, a trip lever adapted to engage and hold said lever at the
115 other limit of its movement against the action of said spring, and means interposed in said gearing and coacting with said carriage supporting the box for actuating said trip lever to release said clutch controlling
120 lever.

28. In a machine of the kind described, the combination with a movable carriage for supporting a box by its bottom, means for imparting a rotative movement to said carriage, turning in devices comprising a rotating
125 brush disposed in the path of the edges of the box, a common driving mechanism for rotating said brush and for moving

said carriage, and means for automatically throwing said driving mechanism out of connection with said carriage after each complete revolution of the carriage.

5 29. In a machine of the kind specified, the combination with a movable carriage supporting the box, turning in devices disposed in the path of the edges of said box, and means common to said carriage and
10 turning in devices for throwing same into relative operative relation, gearing for imparting movement to said carriage and turning in devices, of means interposed in said gearing and actuated thereby to throw the
15 same out of relatively operative relation after each complete revolution of said carriage, said means including a trip lever, a plunger movably mounted on same, and means for imparting movement to said plun-
20 ger to throw same into the path of said carriage to trip said lever.

30. In a machine of the kind specified, the combination with a movable carriage supporting the box, turning in devices dis-
25 posed in the path of the edges of said box, and means common to said carriage and turning in devices for throwing same into relative operative relation, of gearing for imparting movement to said carriage and
30 turning in devices, of means interposed in said gearing, and actuated thereby to throw the same out of relatively operative relation after each complete revolution of said carriage, said means including a trip lever, a
35 plunger movably mounted on same, a worm interposed in said gearing, and a lever connected with said plunger, and carrying a rack for engaging said worm when said carriage and turning in devices are disposed in
40 relatively operative relation, said lever being adapted to throw said plunger into the path of said carriage to trip said trip lever.

31. A machine of the kind specified, comprising in combination, a frame, a carriage
45 for the supported box, rollers having frictional engagement with said carriage for imparting movement thereto, turning in devices, a carriage rotatably supporting said turning in devices, gearing common to said
50 turning in devices and said rollers for rotating same, a clutch disposed in the gearing actuating said rollers, a lever controlling said clutch, connection between said lever and said carriage supporting said turn-
55 ing in devices, a spring engaging said lever for normally holding same at the limit of its movement, at which said clutch is released and said turning in devices are disposed out of operative relation to the sup-
60 ported box, a trip-lever adapted to engage said clutch controlling lever to hold the lat-

ter at the other limit of its movement against the action of said spring to maintain said clutch in engagement and said turning in devices in operative relation to said box, a
65 plunger movably mounted on said trip-lever, a pivoted lever connected at its free end with said plunger, a rack on said lever, a worm disposed on the shaft of one of said
70 rollers and adapted to be engaged by said rack, and a spring for holding said rack normally in engagement with said worm, said worm being adapted to actuate said
75 pivoted lever to throw said plunger into the path of the carriage supporting the box to cause said carriage to trip said trip-lever to release said clutch and throw said turn-
80 ing in devices out of operative relation to said box and simultaneously throw said rack out of engagement with said worm to allow said pivoted lever and said plunger to return to the other limits of their movement.

32. In a machine of the kind specified, the combination with a movable carriage for supporting the box, turning in devices
85 adapted to be disposed in the path of said box, a movable carriage supporting said turning in devices, and operating means common to both carriages for simultaneously throwing said turning in devices and
90 said box into relative operative relation, of means independent of said operating means for adjusting the position of said carriage supporting said turning in devices relatively to the carriage supporting the box to adjust
95 the operative position of said turning in devices to accord with variations in depths of supported boxes.

33. In a machine of the kind described, the combination with a box support, for
100 supporting a polygonal box by its bottom, of means for moving the box to carry each point in its edges through a given point, a rotating brush applied to the inside of the box and means for varying the pressure of
105 said brush against the box.

34. In a machine of the kind described, a support for a polygonal box adapted to support a box by its bottom, means for moving each side of the box successively in
110 a straight line, means for imparting a rotative movement to the box as each of its corners reaches a given position, and means for pressing the bottom of the box against said box support.
115

In testimony whereof I have signed my name in presence of two subscribing witnesses.

WILLIAM G. SCHOETTLE.

Witnesses:

RUDOLPH WM. LOTZ,
F. SCHLOTFELD.