

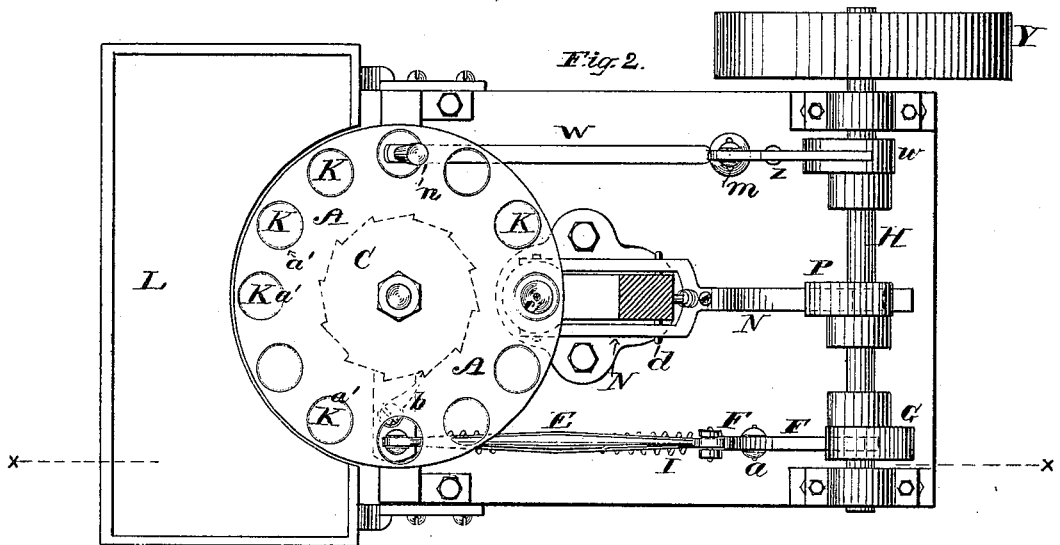
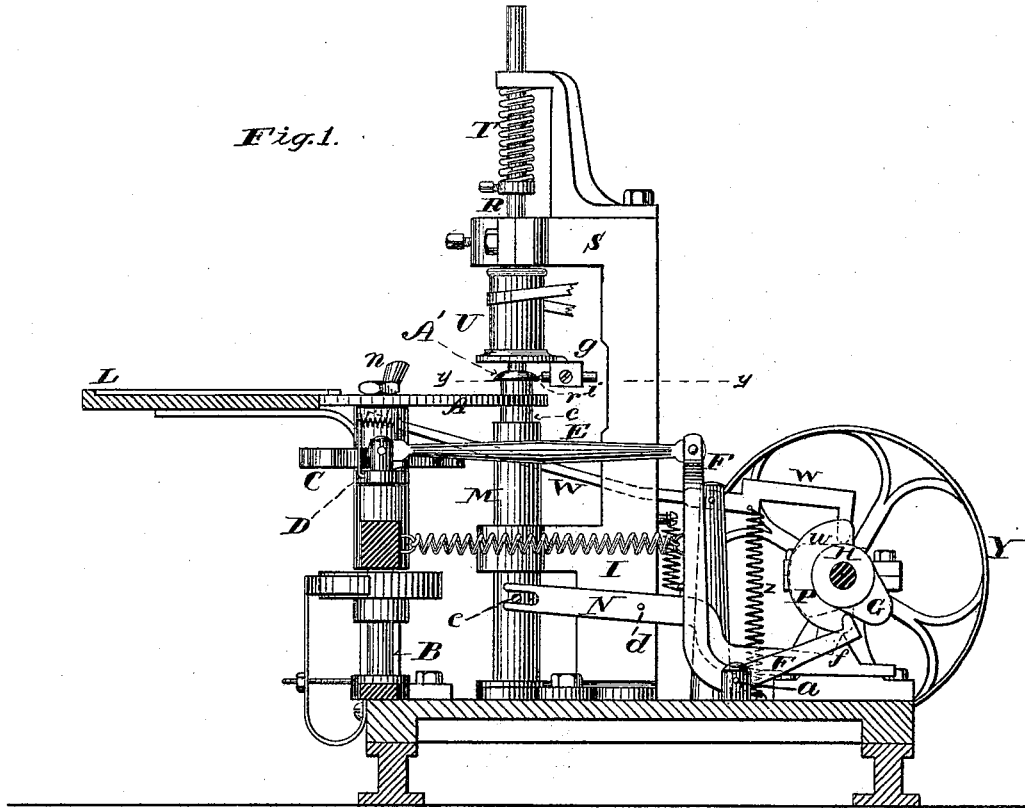
(No Model.)

P. KENNEDY & C. J. DISS.

APPARATUS FOR TRIMMING THE CIRCUMFERENTIAL EDGES OF BUTTONS.

No. 249,635.

Patented Nov. 15, 1881.



WITNESSES.
Robt W. Matthews
Thomas C. Crossman.

INVENTOR.
Patrick Kennedy
Charles J. Diss
per James A. Whitney
Atty

UNITED STATES PATENT OFFICE.

PATRICK KENNEDY AND CHARLES J. DISS, OF BROOKLYN, NEW YORK.

APPARATUS FOR TRIMMING THE CIRCUMFERENTIAL EDGES OF BUTTONS.

SPECIFICATION forming part of Letters Patent No. 249,635, dated November 15, 1881.

Application filed September 13, 1881. (No model.)

To all whom it may concern:

Be it known that we, PATRICK KENNEDY and CHARLES J. DISS, of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Apparatus for Trimming the Circumferential Edges of Buttons, of which the following is a specification.

In buttons formed by molding from plastic material, and also in those formed by turning in a lathe, there is in most cases a burr or feather left upon the periphery of the button, which impairs its appearance and detracts from its market value.

The object of our invention is to provide for the removal of this burr or feather by the application of a diamond cutting-tool to the edges of the buttons; and our said invention comprises certain novel combinations of parts cooperating to this end.

Figure 1 is a vertical sectional view of a machine embodying our said invention, taken in a line, *x*, Fig. 2. Fig. 2 is a horizontal sectional view of said machine, taken in a line, *y*, Fig. 1.

A is a circular intermittently-rotating table, attached to a vertical shaft, B, which latter works in suitable bearings provided in the stationary frame of the machine. Upon the said shaft B is a ratchet-wheel, C, also indicated in dotted outline in Fig. 2. A bar, D, more fully indicated in dotted outline in said Fig. 2, has its inner end pivoted on the shaft B and its outer end pivoted to one extremity of a connecting-rod, E, the opposite extremity of which is pivoted to the upper end of an elbow-lever, F. The said elbow-lever has its fulcrum or pivot at *a*, and its lower arm bears against a cam, G, on a driving-shaft, H, a spiral spring, I, being arranged to retract the upper arm of said elbow-lever F, and thereby keeping the lower arm of said lever in contact with the periphery of the cam G. Upon the bar D, near the outer end thereof, is a spring-pawl, *b*, which acts in conjunction with the ratchet-wheel C.

The parts above named being arranged as described, each revolution of the driving-shaft H actuates the pawl *b* to turn the ratchet-wheel C the length of one of the teeth thereof, thereby giving a partial revolution to the circular table A. The said table A is provided

around its circumferential edge with a circular series of openings, each of which in size and contour corresponds to the size and contour of the buttons to be trimmed or finished, except that at the bottom of each opening, and projecting inward around the edge thereof, is a shoulder, *a'*, so that when the buttons are placed in the openings K, as hereinafter explained, instead of falling through the said openings they will be supported therein by resting upon the said shoulder *a'*.

Contiguous to the outer side of the table A, and having its upper surface flush with the upper surface of the said table A, is a fixed horizontal table, L. This table L is semicircularly recessed at its inner side, to enable the adjacent portion of the circular table A to work therein, so that the buttons, being thrown carelessly upon the table L, may be conveniently swept therefrom by the hand of the operator to and into the openings K of the circular table A.

Placed at the rearmost side of the table A is a vertically-moving plunger, M, which works through suitable guides or bearings in the stationary frame of the machine, and the upper end, *e*, of which is of such size that it may readily pass upward to the openings K of the table A as said openings are brought in succession above said plunger by the intermittent movement of said table A. The vertical movement is given to the plunger M by a lever, N, the pivot or fulcrum of which is shown at *d*, and one end of which is forked to engage with a pin or stud, *e*, on the plunger M, while the opposite end, *f*, bears against the circumference of a cam, P, on the driving-shaft H in such manner that the rotation of the said shaft H gives the requisite vertical movement to the plunger M in unison with the intermittent movement of the circular table A.

R is a sliding shaft, which works through suitable guides or bearings provided in an overhanging bracket, S, which forms part of the frame of the machine, said sliding shaft R being pressed downward by a spiral spring applied as shown at T, said sliding shaft being, furthermore, axially coincident with the plunger M below.

Running loose upon the lower part of the sliding shaft R, but retained at an appropriate

distance from the lower extremity thereof by any suitable devices, is a pulley or drum, U, upon which is to be run a suitable driving-belt to give a continuous rotary motion to the said drum. Extending radially from the lower end of said drum is an arm, *g*, which receives the holder *i* of a cutter of "bort," or diamond, so called.

Provided at one side of the machine is a lever, W, the pivot or fulcrum of which is shown at *m*. The forward end of the said lever is provided with an upwardly-projecting spur, *n*, while the rear end of said lever bears against the circumference of a cam, *w*, on the driving-shaft H, the circumferential contour of the said cam being indicated in dotted outline in Fig. 1. The rearmost end of the lever W is held down upon the cam *w* by a spiral spring, *z*. The shaft H is provided with a suitable driving-pulley, Y.

The buttons being placed in the openings K, as hereinbefore explained, are by the intermittent movement of the circular table A carried over the plunger M and below the sliding shaft R, at which point each opening K remains stationary for a short but sufficient time, which permits the upward movement of the plunger M. This movement of the plunger M carries the button upward out of the opening K against the lower end of the sliding shaft R, the said sliding shaft yielding in an upward direction, so that the button, as shown at *a'* in Fig. 1, is brought coincident with the diamond point or cutter *r*, whereupon the said cutter is rapidly rotated around the axial line of the plunger M and sliding shaft R by means of the rotation of the drum U, thereby causing the diamond point or cutter *r* to trim or finish the circumferential edge of the button. This done, the plunger M descends, thereby permitting the finished button to return to the opening K from which it had previously been lifted, whereupon another partial rotation of the table A

brings the next succeeding button into position for the trimming or finishing operation. As each of the openings K is brought over the stud *n* of the lever W an upward movement of the said stud through the opening K above ejects the finished button therefrom.

What we claim as our invention is—

1. The combination of the circular intermittently-rotating table A, constructed with the shouldered openings K, the vertically-moving plunger M, the yielding shaft T, axially coincident with the plunger M, and the pulley or drum U, arranged to rotate around the axes of the shaft R and plunger M, and carrying the carbon-cutter *r*, the parts being provided with means, substantially as described, for imparting the requisite motion thereto, all substantially as and for the purpose herein set forth.

2. The combination of the lever W, having the stud *n*, the circular intermittently-rotating table A, having the shouldered openings K, the plunger M, the yielding shaft R, the rotating pulley or drum U, carrying the cutter *r*, and mechanism, substantially as described, for imparting the requisite movements in unison to the said parts, all substantially as and for the purpose herein set forth.

3. The combination of the table A, having the shouldered openings K, the ratchet-wheel C, the pawl *b*, rod E, elbow-lever F, cam G, plunger M, lever N, cam P, shaft R, spring T, drum U, carrying the cutter *r*, lever W, having the stud *n*, and the cam *w*, the whole constructed, combined, and arranged for joint use and operation, substantially as and for the purposes herein set forth.

PATRICK KENNEDY.
CHARLES J. DISS.

Witnesses:

ROBT. W. MATTHEWS,
JAS. H. MATTHAEL.