July 17, 1962 W. A. TROLL ET AL 3,044,660

BUTTON ORIENTER

Filed Jan. 29, 1959 4 Sheets-Sheet 1

Fig. 1

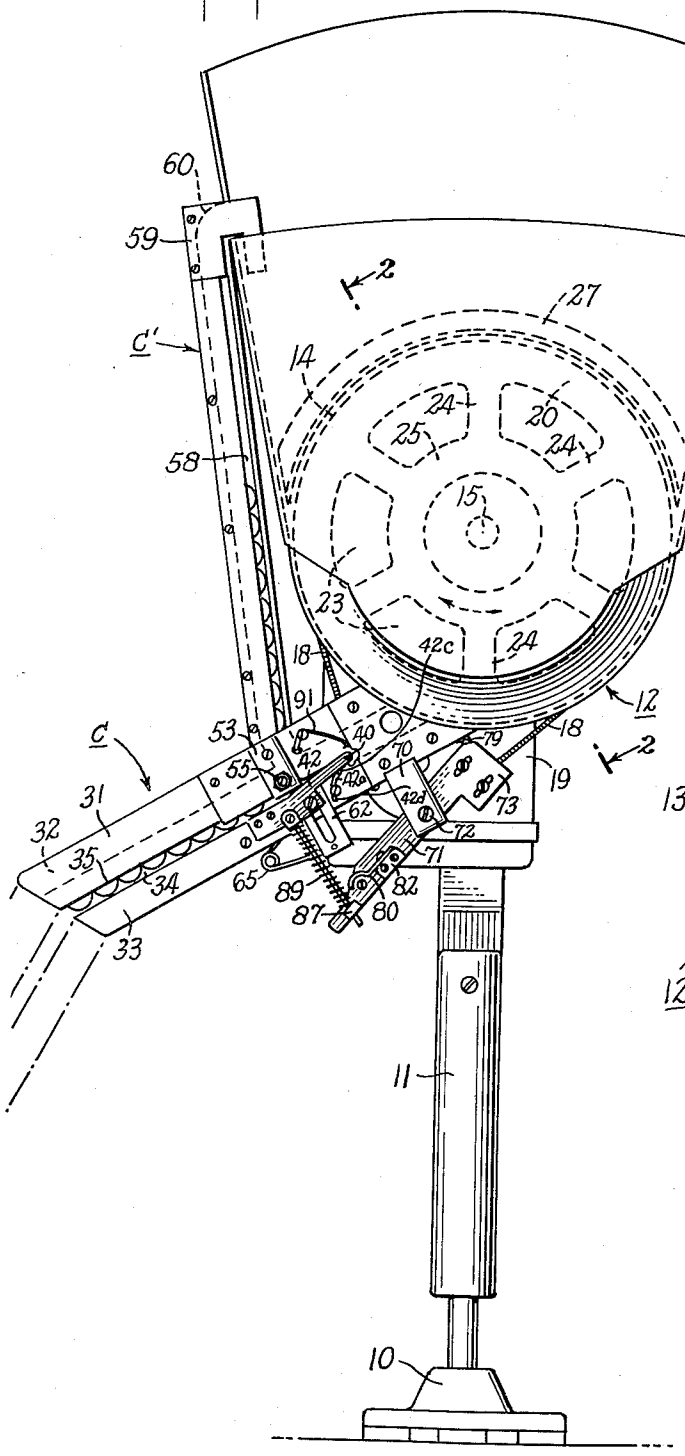
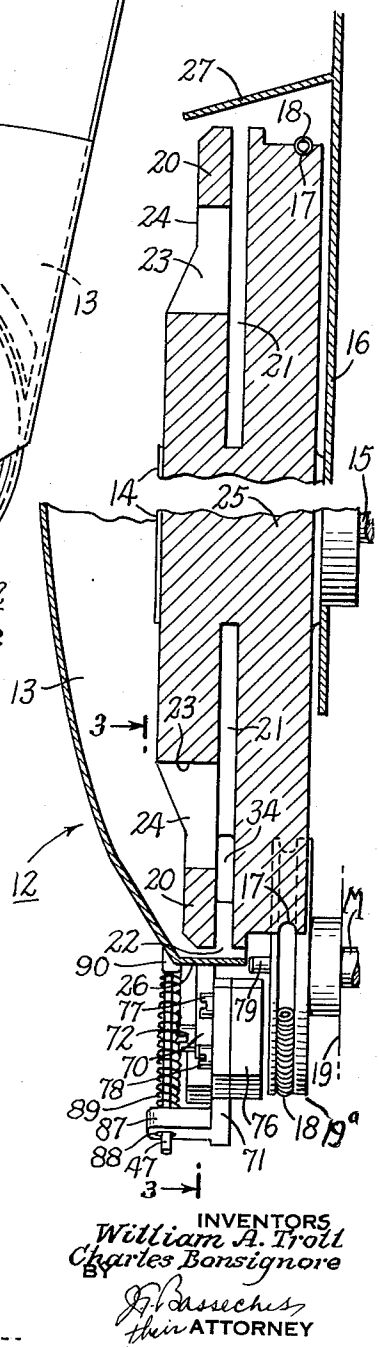


Fig. 2



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BUTTON ORIENTER

Filed Jan. 29, 1959 4 Sheets-Sheet 2

Fig. 3

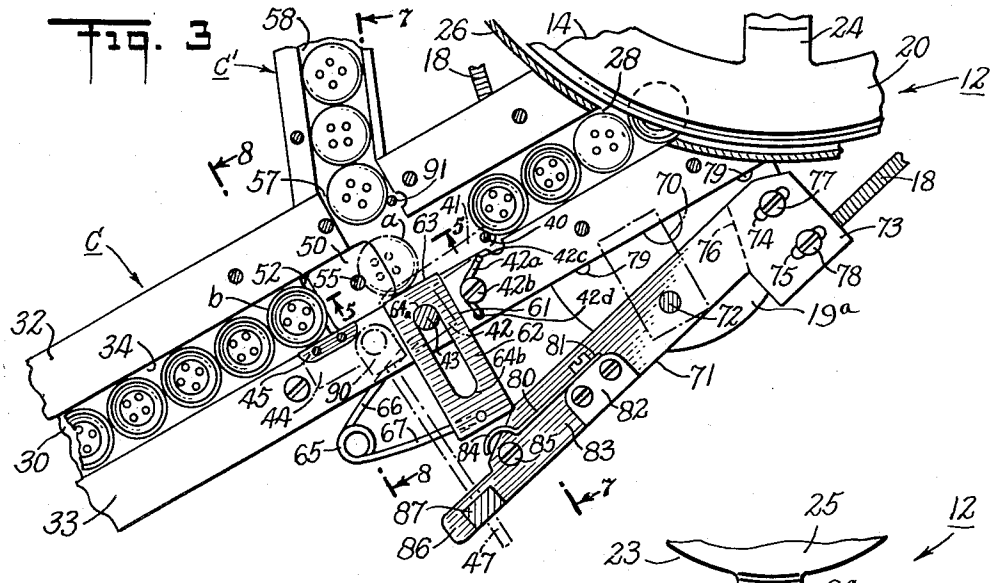


Fig. 4

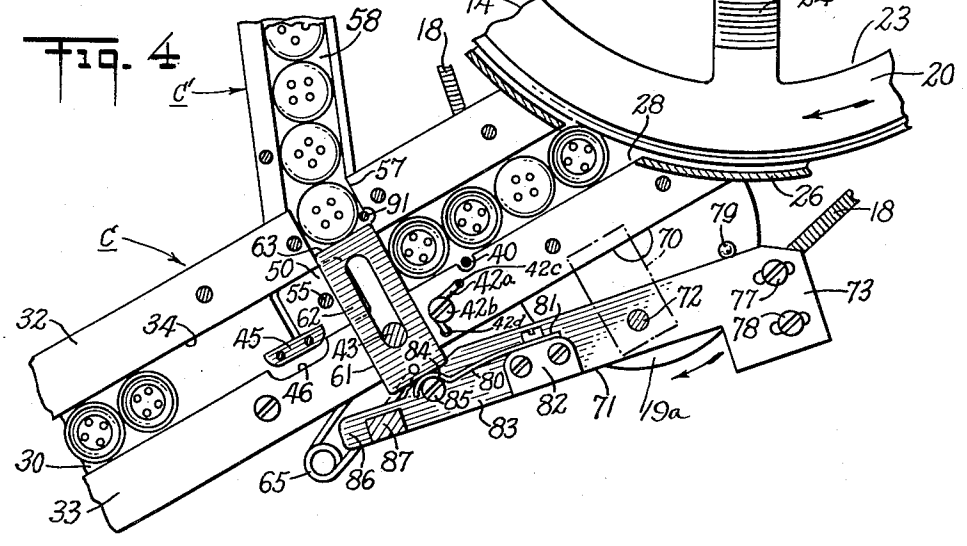


Fig. 5

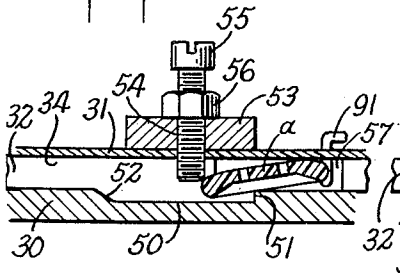
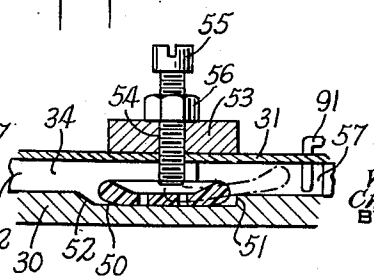


Fig. 6



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BUTTON ORIENTER

Filed Jan. 29, 1959 4 Sheets-Sheet 3

Fig. 7

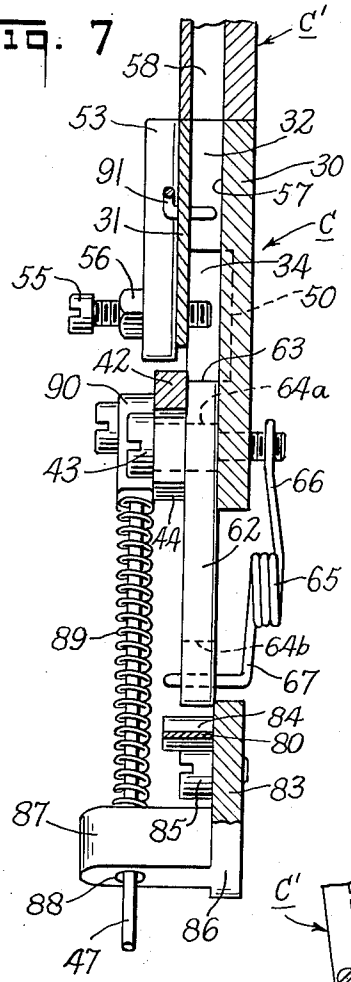


Fig. 8

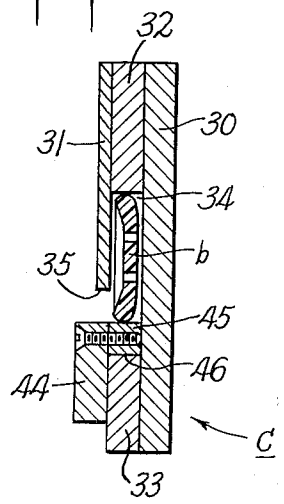
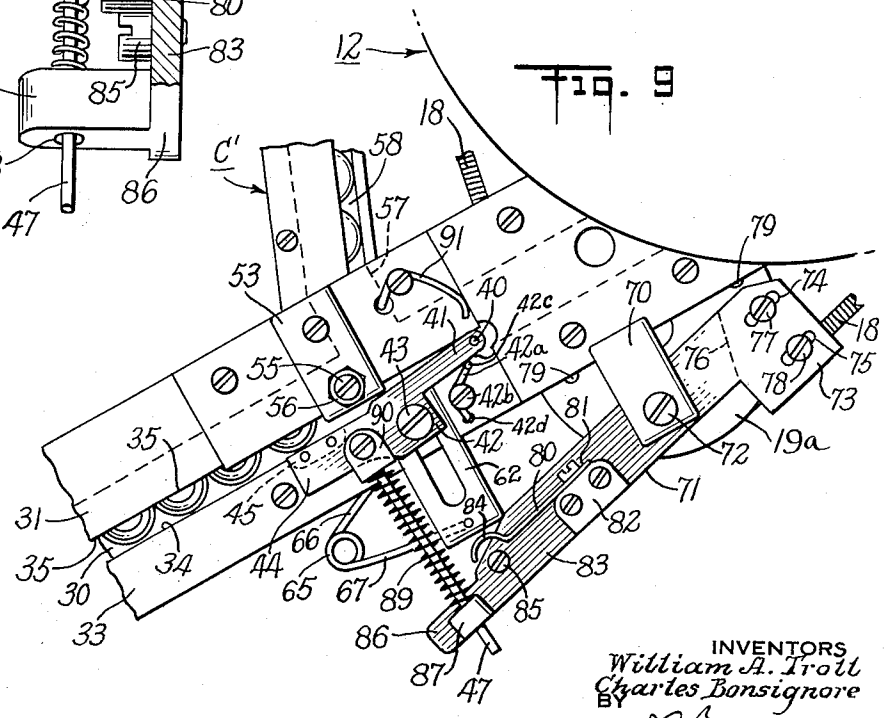


Fig. 9



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July 17, 1962 W. A. TROLL ET AL 3,044,660

BUTTON ORIENTER

Filed Jan. 29, 1959 4 Sheets-Sheet 4

Fig. 10.

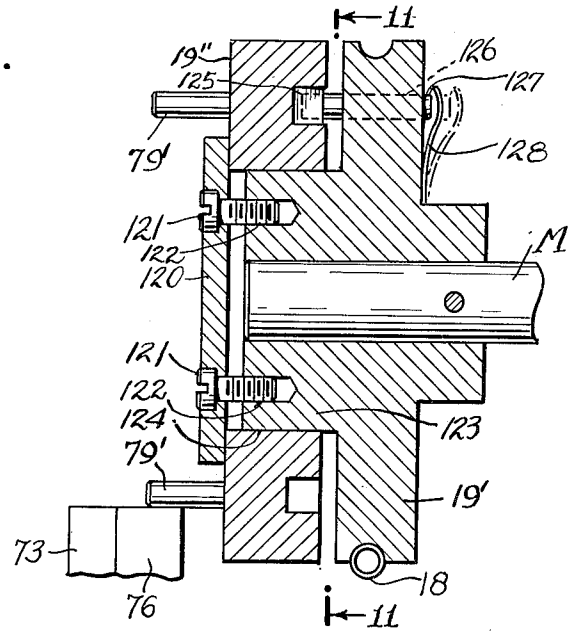


Fig. 11

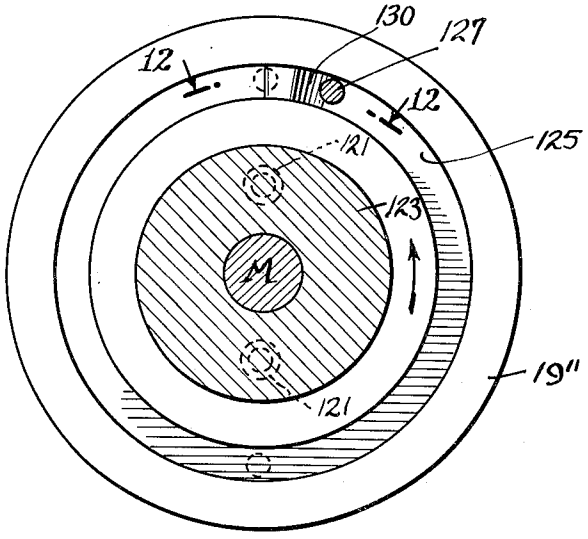
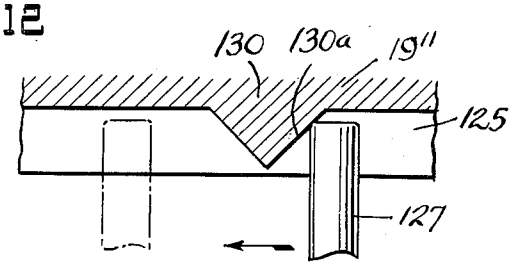


Fig. 12



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United States Patent Office 3,044,660 Patented July 17, 1962

3,044,660

BUTTON ORIENTER

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Filed Jan. 29, 1959, Ser. No. 789,826
16 Claims. (Cl. 221—10)

This invention relates to a button orienting device, and more particularly to an orienting device for use with sewing hole buttons.

Still more particularly, this invention relates to a face orienting device for sewing hole buttons of unsymmetrical face configurations.

Still more particularly, this invention relates to a button sewing machine attachment for feeding and orienting sewing hole buttons having unsymmetrical faces, but having symmetrical silhouettes when viewed in end elevation.

In United States Patent No. 2,661,709, there is exemplified and disclosed a machine for feeding sewing hole buttons whereby sewing hole buttons preferably having symmetrical face portions are automatically fed to the presser foot of a sewing machine with the sewing hole or button holes in predetermined alignment with respect to the sewing machine needle. It is an object of this invention to provide a face orienting device for unsymmetrical sewing hole buttons whereby such buttons may be automatically face oriented into correct faced position for sewing and then fed to a button sewing machine of the type exemplified in Patent No. 2,661,709, for securement to a garment or the like.

It is a further object of this invention to provide a face orienting device for unsymmetrically faced, disk-like objects as exemplified by unsymmetrical sewing hole buttons whereby such buttons or other objects may be automatically classified and oriented into a pre-selected face orientation.

Still a further object of this invention is to provide a button face orienting device of the type described substantially free from tendencies toward jamming, skipping or other mechanical interruptions which device is in addition capable of face orienting buttons having symmetrical silhouettes when viewed in end elevation.

Still a further object of this invention is to provide a sew-thru or sewing hole button face orienting device whereby buttons in a hopper or other bulk supply may be classified, those buttons discharged from the hopper in a pre-selected orientation face-wise being passed to a further position in the button feeding and sewing cycle and those buttons passed from the hopper in a non-selected face orientation being automatically returned to the bulk supply in the hopper.

Another object of the invention is to provide a button orienting device as aforesaid whereby a continuous supply of face oriented buttons is assured.

In order more fully to describe the invention and illustrate its use, we make reference to the accompanying drawings, forming a part hereof, in which:

FIGURE 1 is a front elevational view of the device, partly in phantom;

FIGURE 2 is a magnified section taken on the lines 2—2 of FIGURE 1;

FIGURE 3 is a fragmentary rear elevational view of the device;

FIGURE 4 is a view similar to the elevation of FIGURE 3 in an advanced stage of operation of the device;

FIGURE 5 is a magnified section taken on the lines 5—5 of FIGURE 3;

FIGURE 6 is a similar section to the section of FIGURE 5 but in an advanced stage of operation;

FIGURE 7 is a magnified section taken on the line 7—7 of FIGURE 3;

FIGURE 8 is a magnified section taken on line 8—8 of FIGURE 3;

FIGURE 9 is a magnified fragmentary front elevational view of the device;

FIGURE 10 is a cross-sectional view of a modified drive assembly embodiment for the device;

FIGURE 11 is a section taken on lines 11—11 of FIGURE 10; and

FIGURE 12 is a magnified section taken on the lines 12—12 of FIGURE 11.

Generally describing the operation of the device, an extended chute downwardly inclined to feed gravitationally buttons introduced into the chute, is connected at its uppermost end to the discharge throat of a button hopper. The button hopper is charged with a bulk supply of buttons and is provided with a spider assembly arranged to align and discharge buttons through the throat in the hopper, to lie in edge-to-edge peripheral contact in the upper end of the chute. The chute is provided interjacent its ends with a trap portion comprising a recess formed in one of the walls defining the chute and a sensing finger extending from the opposed wall toward the recess. The spacing of the inner end of the finger from the recess is calculated to cause buttons descending the chute to be angularly oriented with respect to the longitudinal axis of the chute, buttons lying in a pre-selected face orientation being adapted to slide beyond the block formed by the recess and sensing finger and buttons lying in a non-preselected face orientation becoming blocked and retained against further gravitational flow down the chute by these two parts. The trap member of the device is provided at a point adjacent the button blocking area with an auxiliary ejector exit, which exit is in communication with a secondary chute. A slide ejector cyclically operable to be projected into and out of the trap portion is arranged to engage buttons blocked by the finger and recess and force the blocked buttons upwardly into the secondary chute.

The secondary chute may, in accordance with the invention, be provided with a discharge area communicating with the hopper so that buttons forced from the trap into the secondary chute are returned to the main bulk or mass or, alternately, these buttons which are as a practical matter, face oriented but in obverse relationship to the buttons in the main chute may be utilized in any other application wherein their oriented condition may be found advantageous.

In order to prevent jams caused by too many buttons entering the trap or blocking area, the cyclically operable stop is positioned in spaced relation to the trap and upwardly therefrom a distance of approximately the width of one button, the function of such stop being to prevent buttons from flowing down the chute and into the trap area, when the trap is unblocked by reason of the outward extension of the ejector slide.

Cyclical actuation of the synchronously moving stop and ejector slide is provided by a rocker arm arrangement which may, in accordance with the embodiment illustrated, be powerized by the same powerizing means which actuates the movable spider in the button hopper.

Referring now to the drawings, a base **10** is securely anchored, as by bolts, to a workbench or other horizontal support, which support may, in addition, carry a button sewing machine and button feeder (not shown). A vertical standard **11** is secured to the base **10**, the standard

11 carrying a hopper assembly 12. The hopper assembly comprises a bulk chamber 13, within which chamber is rotatably mounted a spider wheel 14 supported on a shaft 15, journalled on a housing 16. The spider, on one face, has a pulley groove 17 for receiving the belt 18 of the motorized drive member 19, and constitutes a flange 20 defining a slot 21, open at its periphery 22. The slot 21 corresponds to the thickness from face to face of the buttons to be used, reasonable tolerances being included, to permit slippage of the buttons in the slot without appreciable canting of the buttons.

The flange 20 includes a plurality of openings 23 formed by the radial arms 24 extending from the hub 25. The bottom wall 26 of the hopper assembly 12 follows the periphery of the spider at the lower end and is spaced apart therefrom to provide clearance. A shield 27 protects the upper portion of the hopper from the entry of buttons, egress to the spider being provided only through the openings 23.

The bottom wall 26 is concentric with the spider for a distance up to a past-dead-center position, at which portion it connects the hopper with the upper end of the button chute assembly C. For this purpose a throat or discharge opening 28 is formed through the bottom wall 26, the said throat being of a dimension corresponding with reasonable clearance to the cross-sectional dimension of the buttons to be used, due allowance and clearance being provided to permit passage of buttons regardless of their face orientation. The net effect of the hopper assembly heretofore described is to introduce to a channel within the chute assembly C, a continuous supply of buttons in edge-to-edge peripheral contact but in haphazard face orientation.

The aforesaid result is accomplished upon actuation of the motor assembly 19, which rotates the spider assembly 20 through the driving medium of the spring belt 18. The use of a spring belt, while not mandatory, is nontheless desirable since the comparatively low frictional drive provided by such belt permits slipping of the belt in case of a jam within the hopper assembly.

The charge of buttons is fed into the hopper portion 13 and the buttons are tumbled by the radial arms 24, certain of the said buttons, under the tumbling and classifying influence of the rotating arms, being aligned in a plane substantially parallel with the plane of the spider and, thus aligned dropping through openings 23 into the slot 21. Once aligned in the slot 21, certain of the buttons will be discharged, under the rolling influence of the spider, through the throat 28 and into the chute assembly C.

It is to be noted that in the event the chute assembly C is filled and buttons back up to the level of the discharge opening or throat, no jamming will take place, the slightly oversize relation of slot 21 to the buttons assuring the tumbling of buttons past the throat.

While we have described and illustrated the invention in conjunction with a button hopper assembly of the rotating spider type, it should be understood that any classifying expedient whereby buttons from a bulk supply may be introduced into a button chute in edge-to-edge peripheral contact may be substituted for the spider classifier herein illustrated and described, without departing from the spirit of the invention.

The chute assembly C comprises an extended back wall 30, a front wall 31 (see FIGURE 1) separated by spacer blocks 32, 33 forming the top and bottom walls, respectively, of the inner guide channel 34. Portions of the front wall 31 defining the channel 34 may be cut away as at 35 (see FIGURE 1) to permit visual access to the channel.

As may best be seen by reference to FIGURES 3 and 4 the flow of buttons down the inclined chute is initially interrupted by the stop pin 40 normally extending into the channel 34 through the cutaway portion 35 of the front wall 31 of the chute. The pin 40 is extended from forward arm 41 of the escapement lever 42, which lever is pivotally mounted to the chute C on the stud 43 extending outwardly from the chute. The rearward arm 44 of the lever 42 is provided with an abutment shoe 45, normally seated within the recess 46 formed in the front and lower walls 31 and 33, respectively, of the chute (see FIGURE 3). A depending guide finger 47 is freely pivotally mounted to the rearward arm 44 of the lever 42, the lever 42 being normally biased to lie in blocking position of the chute by a butterfly spring 42*a* which is coiled at a central portion about the post 42*b* of the chute, one end 42*c* of the said spring lying against the arm 40 and the opposed end 42*d* being secured to the chute adjacent the pivot 43.

At a point of the chute between the pin 40 and the shoe abutment 45, the back wall 30 is cut away or otherwise formed to define a trap or recess portion 50, having in the illustrated embodiment (see FIGURES 5 and 6), a right angular leading shoulder portion 51 and a more gradually inclined trailing portion 52. The front wall 31, at a point opposed to the recess 50 is provided with a flange 53 having a threaded aperture 54, through which the complementally threaded sensing finger 55 is threaded to project a pre-selected distance toward the recess or trap 50. A lock nut 56 is provided to prevent variations once the position of the finger 55 is adjusted.

The trap portion 50 is further provided with an ejector exit portion 57, formed by an interruption in the upper wall 32, the said exit portion lying in leading position in said chute with respect to the finger 55. The exit 57 forms an extension of the channel 58 formed by the walls defining the exit chute C'. The chute C' is provided at its upper end 59 with a curved discharge throat 60, which throat is directed to a position above the bulk button supply of the hopper, so that buuttons discharged through the chute C' are rejoined with the buttons in the bulk portion 13 of the hopper.

The lower wall 33 of the chute C is likewise interrupted to form an opening 61, lying in corresponding position in the lower wall to the position in the upper wall occupied by the ejector exit 57. An ejector slide 62 is slidably guided in the opening 61 to be shiftable into the trap 50 to a point just beyond the lowermost portion of the upper wall 32 and into the exit 57 (see FIGURE 4). In the outward position of the slide 62, the top 63 of the slide forms a continuation of the lower wall of the button guide channel 34. The slide 62 is provided with a central slot or cutout 64, which slot or cutout is slidably guided by the stud 43, the outer extremities 64*a*, 64*b* of the slot serving cooperatively with the stud 43 to limit the inward and outward reciprocal movement of the ejector slide, the slide 62 normally lying in extended position (see FIGURE 3) by reason of the biasing influence of the hairpin spring 65, having its arms 66, 67, secured, respectively, about the stud 43 and to the ejector 62.

The button orienting parts above described are actuated by a motor mechanism which, in the illustrated embodiment of the invention, is the same motor mechanism used to drive the spider assembly.

On a bracket 70, bolted or otherwise secured to the chute C, rocker arm 71 is pivotally mounted on the trunnion 72 secured to the bracket. Rearward branch 73 of the arm 71 is formed with a pair of parallel slots 74, 75. A bearing or follower block 76 (see the dotted lines, FIGURES 1, 3 and 4) is adjustably secured to the inner face of the arm 73 by means of headed bolts 77, 78 extending through the slots 74, 75.

The motor assembly 19 is provided with a pulley 19*a* carrying on its outer face 19*b* two eccentric pins 79 which rotate with the motor, the pins 79 being positioned to strike the follower or block 76, thereby pivoting the rocker arm 71 about the pivot 72, the throw or arcuate movement imparted to the arm 71 being controllable by adjusting the block 76 forwardly or rearwardly within the limits provided by the slots 74 and 75.

The rocker arm is biased to returned position (FIG-

URES 1 and 3) initially by the hairpin spring 65 acting through the ejector slide 62. A leaf spring 80 is affixed at one end 81 to a bracket 82, bolted or otherwise secured to the forward branch 83 of the rocker arm 71. The other end 84 of the spring 80 is curved and positioned in close adjacency above the pin 85 extending outwardly from the forward branch 83 of the rocker arm 71. Adjacent the outer end 86 of the forward branch 83 of the rocker arm, a lug 87 is extended normal to the plane of the said arm. The lug is centrally bored with an oversize hole 88, within which hole the depending finger 47 rides with substantial clearance. As best seen from FIGURES 1 and 3, the finger 47 is of a length to extend beyond the lowermost portion of the rocker arm and through the lug 87. A coil spring 89 is sleeved over the finger 47, the pivot 90 and the portions of the lug 87 surrounding the hole 88 serving to prevent endwise removal of the spring 89 from the finger 47.

The spring 89 reacting against butterfly spring 42*a* serves to bias the rocker arm 71 to the fully descended position, the initial downward movement of the branch 83 of the rocker arm having been effected by the combined spring actions of the springs 89, 65 and 42*a*.

In operation, the hopper assembly previously described discharges sequentially buttons through the throat portion 28 into the upper end of the chute assembly C. The inner dimension of the chute assembly C is such as to preserve buttons in the edge-to-edge peripheral alignment in which such buttons were discharged into the chute C from the throat portion 28 of the hopper.

As best seen from FIGURES 3 and 4, the rocker arm 71 is reciprocally pivoted about the stud 72 by the interaction of the rotating eccentric pins 79 mounted on the motor assembly pulley 19*a* with the follower block 76 secured to the rearward arm 73 of the said lever 71. The throw or angular movement imparted to the arm 71 is controllable by adjustment of the block 76 through the medium of headed bolts 77, 78 and slots 74, 75, forward or rearward movement of the follower portion 76 serving to vary the contact points with the eccentric pins 79, thereby accomplishing the aforementioned result.

Buttons descending down the chute in haphazard face orientation will be stopped by either the blocking pin 40 or by the ejector slide 62. The pin 40, extending from escapement lever 42, is normally reciprocated into and out of blocking position of the chute under the influence of the rocker arm 71 which biases on its upward stroke, the spring 89 against the pivotal spring detent 90, the spring 89 serving to force the detent 90 upwardly about the pivot point 43 while flexing the butterfly spring 42*a* to remove the pin 40 from the chute, the energy stored in the spring 42*a* serving to shift the pin 40 back into blocking position of the chute when the rocker arm is released by disengagement of the pins 79 from the follower block 76. Normal oscillation of the pin 40 into and out of blocking position of the chute is suspended when buttons in the chute are positioned adjacent the abutment shoe 45 (see FIGURE 1). In such case, the pin 40 is maintained in blocking position of the upper chute notwithstanding the action of the rocker arm. The reciprocating rocker arm serves to project the slide 62 into and out of the opening 61, the stud 85 acting through the cushioning lever spring 80 in the projecting cycle of the ejector slide 62, and the hairpin spring 65 serving to return the ejector slide 62 to the unprojected position.

As seen from FIGURE 3, a button descending the uppermost end of the chute C is normally prevented from descending further by the blocking pin 40. As the rocker arm 71 is shifted by eccentric pins 79 to the position shown in FIGURE 4, the ejector slide is projected into the chute into blocking position thereof and the pin 40 is simultaneously withdrawn from blocking position of the chute. As the eccentrics 79 swing past the block or follower 76, the rocker arm is released and returned to the position shown in FIGURE 3 under the heretofore described biasing influence of the springs 89, 42*a*, 65, the last named springs also acting to withdraw the ejector slide 62. It will be readily understood from the description of the synchronous action of the pin 40 and ejector slide 62 that buttons are permitted one at a time to fall or roll within the chute C to a point beyond the blocking pin 40, the pin returning in time to prevent more than one button from descending down the chute. As seen best from FIGURES 3 and 4, this synchronous action which prevents more than one button from passing beyond the point 40 is accomplished by preferably locating the pin 40 a spaced distance from the ejector slide 62 of about the diameter of one button.

As seen from FIGURES 3 and 4, button *a* having passed the pin 40 is, upon withdrawal of the ejector slide 62, permitted to roll to the trap or recess 50. If the button *a* is in selected face orientation, as shown in FIGURE 6, it will be angularly canted and, under the influence of gravity, will slide beneath the space defined by the shoulder 51 and the end of the descending finger 55, through the trap portion 50, to a trailing position with respect to the trap in the chute C. If, however, the button is in a non-selected face configuration, as illustrated in FIGURE 5, the button will become blocked between the shoulder 51 and the sensing finger 55 and passage to a trailing position of the trap will be prevented. Buttons thus blocked against the finger 55 and cleared from the trap portion by the reciprocating action of the slide or ejector 62 which, as illustrated in FIGURE 4, forces such non-oriented button upwardly through the exit portion 57 in the upper wall 32 of the chute C. A spring detent 91 positioned adjacent the exit 57 is biased out of blocking position of the said exit by the leading edge of the button under the upward forcing influence of the slide 62, the spring detent, upon withdrawal of the slide 91, returning behind the upwardly forced button to the position shown in FIGURE 4, thereby blocking the button from returning to the trap portion.

In the illustrated embodiment, the exit 57 communicates with an auxiliary chute C' adapted to return buttons forced into the chute C' to the bulk supply of buttons in the hopper. As seen from FIGURE 1, the curved throat portion 60 at the upper end 59 of the chute C' overlies the bulk button supply for the purpose aforesaid.

Since the buttons in the chute C' are, in fact, oriented but in obverse face relation to the buttons in the lower portion of the chute C, the oriented condition of such buttons may, in accordance with the spirit of the invention, be availed of in any of a number of applications wherein face orientation of the buttons is desirable, as, for instance, in sewing.

As previously mentioned briefly in the description of the operation of the escapement lever 42, the button orienting device is provided with an anti-jamming control effective when buttons become backed up in the trailing position adjacent the trap portion 50, as shown in FIGURE 1, to prevent further buttons from being released by the pin 40, to the trap portion 50 until such surplus supply of trailing positioned buttons is used up. This anti-jamming feature is supplied by the abutment shoe 45 which forms a part of the escapement lever 42. As best seen in FIGURE 3, the button *b* lying in the position adjacent the abutment shoe 45, will, upon actuation of the rocker arm, be wedged by the shoe 45 against the upper wall 32 of the chute C, thereby preventing the arm 41 carrying the pin 40 from descending to the normal, unblocking position of the chute C. When oriented backed up buttons are fed to the presser foot of a sewing machine or otherwise used, button *b* will be permitted to descend the chute in its regular order, thus freeing the shoe 45 and permitting normal operation of the orienting device.

In FIGURES 10, 11 and 12 there is depicted a modified drive embodiment which provides for automatic jam clearing in case the ejector slide 62 becomes wedged at an

intermediate position with respect to the trap **50** and also protects against damage to the motor assembly in such event.

Notwithstanding the jam prevention mechanisms previously described, free reciprocation of the slide **62** may be impeded by grit or other detritus located in the slide area or by a button which fails to descend smoothly under the influence of gravity. Instances of impeded button descent have been encountered where due to atmospheric or other conditions electrostatic charges accumulate on the buttons of a magnitude to interfere with free gravitational sliding of the buttons with respect to the chute at an adequate speed to clear the slide **62**.

In the event that the ejector slide **62** becomes jammed in extended or partially extended position out of the trap **50**, the rocker arm **71** will be prevented from its full range of pivotal movement. Where the pins **79** are secured directly to the motor shaft pulley **19***a* (as is the case in the previously described embodiment) the motor will stall completely, with possible damage thereto, since pins **79** will not be permitted to ride over the block **76** by reason of the restricted pivotal movement of the rocker arm **71** aforesaid. In such case, the continued force applied by the motor through pins **79** to the block **76** will prevent the slide **62** from being retracted to permit clearing of the jam until power to the motor is shut off. The use of the drive mechanism embodiment illustrated in FIGURES 10–12 guards against stalling and resultant motor damage and also permits release of the ejector slide **62**.

In such embodiment, the motor shaft M is secured to pulley **19'** which drives the hopper assembly through belt **18**. A slip disk **19''** carrying pins **79'** is rotatably mounted relative to pulley **19'** by means of the flange **120** carrying headed bolts **121** anchored in complemental threaded apertures **122** formed in a boss **123** forming a trunnion for the bearing aperture **124** of the disk **19''**. The disk **19''** is provided with an annular groove **125** facing the pulley **19'**, the said pulley having an aperture **126** in registry with said groove. A detent member **127** projects through the aperture **126** and is biased into the groove **125** by leaf spring **128** affixed as by bolting or otherwise to the pulley **19'**. A variable tensioning bolt (not shown) bearing against the spring **128** may be provided where adjustable spring pressure is desired.

The groove **125** is formed with a cam tooth or seat **130** extending toward the pulley **19'** which tooth, with the detent **127** forms a driving connection between the pulley and slip disk **19''**.

In normal operation, driving reciprocal movement is imparted to the block **76** by the pins **79'** in the manner previously described. In the event of a jam of the slide **62**, which limits the rocking action of arm **71**, pin **79'** will stop against the block **76** but detent **127** will ride over the leading cam face **130***a* of tooth **130** thus releasing the disk **19''** from driving connection with the pulley **19'** and preventing stalling of the motor. When the detent **127** has passed beyond the tooth **130**, the jammed ejector slide will be freed for return to extended position outside the trap **50**, the springs **80**, **65** and **89** serving to retract the arm **71** and ejector slide **62** against the substantially freely movable disk **19''** permitting the jam to clear. After one rotation of the pulley **19'** with respect to the disk **19''** the detent **127** again engages face **130***a* of tooth **130** and driving operation of the orienting device will continue.

It will be understood that while we have described and applied a modified drive embodiment to the particular problem wherein jamming of the rocker arm **71** may be involved, it will be understood that the invention may have broader applicability in a similar relationship as outlined within the scope of the appended claims.

By providing a sensing finger **55** which is adjustable inwardly and outwardly toward and away from the recess portion **59**, the device may be adapted for use in orienting buttons of a wide variety of thicknesses.

It should be further understood that where the shape of the button requires, variations in the shoulder portions forming the recess **59** may be made to facilitate classification and orientation of such buttons.

The device herein described and claimed may be effectively employed to classify in face oriented position disk-like objects, such as buttons, having non-symmetrical faces, even though the end view silhouette of such buttons or other objects is symmetrical. Such device, by reason of the novel feed interrupting means herein disclosed, is made substantially free from tendencies toward jamming, skipping or other mechanical interruptions which might otherwise occur if further buttons were fed while still a button remained in blocked position within the orienting trap.

The device herein described will be found ideally suited for face-orienting non-symmetrically faced sewing hole buttons preliminarily to feeding the same to the presser foot of a button sewing machine, orientation of said buttons occurring at a rate far in excess of the speed at which most sewing machine operators are capable of aligning the presser foot of a button sewing machine with a garment.

Having thus described the invention and illustrated its use what we claim as new and desire to secure by Letters Patent is:

1. A face orienting device for non-symmetrical faced buttons or the like comprising, in combination, a frame, an inclined chute supported by said frame and arranged to guide and advance under the influence of gravity, face unoriented buttons disposed within said chute in peripheral edge-to-edge contact, a selective trap portion interjacent said chute, said trap portion including stationary partial blocking means effective to pass buttons lying in selected face orientation and to tilt and block buttons not lying in selected face orientation, ejector means adjacent said trap portion arranged to be cyclically actuated to clear said trap portion of blocked buttons, and stop means in leading position in said chute with respect to said trap and arranged to be shifted to chute blocking position in synchronism with the cyclic movements of said ejector means.

2. A face orienting device for non-symmetrical faced buttons or the like comprising, in combination, a frame, a chute supported by said frame and arranged to guide face unoriented buttons disposed within said chute in peripheral edge-to-edge contact, a selective trap portion interjacent said chute, said trap portion including stationary partial blocking means effective to pass buttons lying in selected face orientation and to block buttons not lying in selected orientation, ejector means adapted to oscillate into and out of said trap portion arranged, on inward oscillations, to clear said trap portion of blocked buttons and stop means in leading position in said chute with respect to said trap and arranged to be shifted to blocking position of said chute when said ejector means is oscillated out of said trap portion.

3. A device in accordance with claim 2 wherein said ejector means includes a rearward portion and said chute is arranged to be blocked by said rearward portion when said ejector means lies in said trap and by said stop means when said ejector means is withdrawn from said trap.

4. A device in accordance with claim 3 wherein said stop means is located in leading position with respect to said ejector means a distance approximately equal to the diameter of one button.

5. A face orienting device for non-symmetrical faced buttons or the like comprising, in combination, a frame, a button supplying hopper mounted on said frame, a button chute communicating with said hopper and arranged to guide face unoriented buttons deposited in said chute from said hopper in peripheral edge-to-edge contact, a selective trap portion interjacent said chute, said

trap portion including partial blocking means effective to pass buttons lying in selected face orientation and to block buttons not lying in selected orientation, an ejector exit portion communicating with said trap, ejector means adjacent said trap and arranged to be cyclically actuated to clear buttons blocked in said trap by forcing the latter out said exit portion, an ejector chute forming a continuation of said ejector exit and positioned to receive buttons forced through said exit by said ejector, detent means in said ejector chute adjacent said exit and arranged to be shifted to unblocking position of said ejector chute as buttons are forced into said chute, and to return to blocking position behind said buttons as they enter said ejector chute, and stop means arranged to block said first named chute when said ejector means is shifted out of said trap portion.

6. A face orienting device for non-symmetrical faced buttons or the like comprising, in combination, a frame, a longitudinally inclined chute supported by said frame, said chute including extended top, bottom and side walls defining an extended inner channel of a cross-sectional dimension slidably to guide said buttons in peripheral edge-to-edge contact, a selective trap portion interjacent said chute comprising a laterally offset recess portion defined by a side wall of said chute, said trap including a stationary scanning finger extending from the side wall not having said recess toward said recess, the cross-sectional dimension defined by said trap and said finger being of a configuration to permit passage under the influence of gravity of buttons lying in selected face orientation and to block buttons not in selected face orientation, ejector means adjacent said trap portion arranged to be actuated cyclically to clear said trap portion of blocked buttons, the trailing edge of said ejector means blocking said chute against gravitational flow of buttons during a portion of said cyclical movement, and releasing a button during another portion of said movement.

7. A device in accordance with claim 6 wherein said scanning finger is adjustable toward and away from the walls defining said recess.

8. A face orienting device for non-symmetrical buttons or the like comprising, in combination, a chute defined by extended top, bottom and side walls positioned to provide an extended inner channel of a cross-sectional dimension slidably to guide said buttons in peripheral edge-to-edge contact, a selective trap portion interjacent said chute comprising a laterally offset recess portion defined by the walls of said chute, a finger affixed to one of said walls and extending toward said recessed portion, said finger and the walls defining said recessed portion being effective to cant buttons angularly with respect to the longitudinal axis of said chute and to pass to a trailing position in said chute with respect to said trap portion, buttons lying in selected face orientation in said trap and to retain in said trap buttons lying in a non-selected face orientation, and clearing means adjacent said trap arranged simultaneously to remove buttons from said trap and to interrupt the flow of buttons to said trap.

9. A device in accordance with claim 8 wherein said finger is threaded to be adjustable toward and away from said recess.

10. A device in accordance with claim 9 and including a second chute communicating with said trap and arranged to receive buttons blocked in said trap.

11. A device in accordance with claim 10 and including a button supply hopper communicating with said chute and arranged to orient buttons in said chute in peripheral edge-to-edge contact, said second chute including a discharge throat communicating with said hopper whereby buttons in said second chute are redeposited in said hopper.

12. A face orienting device for non-symmetrical faced buttons or the like comprising, in combination, a frame, a chute supported by said frame and arranged to guide face unoriented buttons disposed within said chute in peripheral edge-to-edge contact, a selective trap portion interjacent said chute, said trap portion including partial blocking means effective to pass buttons lying in selected face orientation and to block buttons not lying in selected face orientation, said trap including an ejector exit portion adjacent said partial blocking means, ejector means mounted in said chute to be movable into and out of said trap portion arranged upon insertion into said trap to clear from said trap and through said ejector exit portion, buttons blocked in said trap and an escapement lever including a forward arm having stop means in leading position in said chute with respect to said trap and shiftable into and out of blocking position of said chute, a rearward arm including an abutment portion normally shiftable into said chute, and arranged to be blocked out of said chute by buttons in said chute adjacent said abutment portion, said stop means being maintained in blocking position of said chute when said abutment portion is blocked out of said chute.

13. A device in accordance with claim 1 wherein said stop means is provided with a branch arm disposed on said chute at a trailing position of said trap, said arm having an abutment portion normally shiftable into said chute but arranged to be blocked from shifting into said chute by buttons backed up in said chute to a point adjacent said abutment portion, said arm being arranged in the blocked position of said abutment portion to maintain said first stop means in blocking position of said chute.

14. A face orienting device for non-symmetrical faced buttons or the like comprising, in combination, a frame, a chute supported by said frame and arranged to guide face unoriented buttons disposed within said chute in peripheral edge-to-edge contact, a selective trap portion interjacent said chute, said trap portion including stationary partial blocking means effective to pass buttons lying in selected face orientation and to tilt and block buttons not lying in selected orientation and ejector means adjacent said trap portion arranged to be cyclically actuated to clear said trap portion of block buttons.

15. In a face orienting device for non-symmetrically faced buttons or the like including a button guide chute, a trap portion interjacent said chute and arranged to stop buttons lying in non-selected face orientation and an ejector arranged cyclically to clear said trap of non-selected buttons, drive means operatively associating said ejector with a motor comprising a spring biased member and a detent member in driving relationship to said spring biased member, one of said members arranged to be actuated by said motor and the other of said members being operatively associated with said ejector, and cam means carried by one of said members effective upon jamming of said ejector temporarily to release said members from driving connection with each other.

16. A face orienting device for non-symmetrically faced buttons or the like comprising, in combination, a frame, a chute supported by said frame and arranged to guide face unoriented buttons disposed within said chute in peripheral edge-to-edge contact, a selective trap portion interjacent said chute, said trap portion including partial blocking means effective to pass buttons lying in selected face orientation and to block buttons not lying in said selected orientation, ejector means adjacent said trap and shiftable into and out of said trap, stop means in leading position in said chute with respect to said trap and shiftable to chute blocking and unblocking position, and actuator means operably associated with said ejector and stop means, and effective to shift said ejector means into and out of said trap portion and synchronously to shift said stop means to blocking position of said chute when said ejector is shifted out of said trap portion, said actuator means comprising a motor, an eccentric driven by said motor, a rocker arm pivotally secured to said chute and having at one end a follower portion arranged to be engaged by said eccentric reciprocally to rock said arm

relative to said chute, and a driving connector interposed between said eccentric and said motor and including a spring biased member and a detent member in driving relationship to said spring biased member, and cam means carried by one of said members, said cam means being effective, upon jamming of said ejector, to disengage said detent member from said spring biased member to permit a range of substantially free relative movement of the said members.

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