May 21, 1935. D. L. JORDAN 2,002,147

APPARATUS FOR ARRANGING AND FEEDING IRREGULAR SHAPED ARTICLES

Filed May 21, 1934 2 Sheets-Sheet 1

Fig. 1.

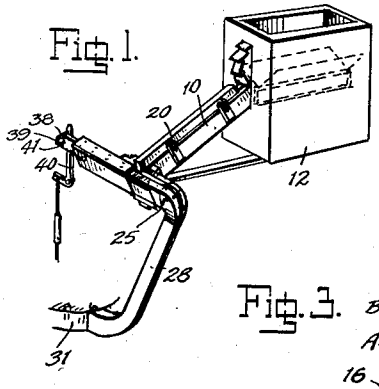


Fig. 2.

Fig. 3.

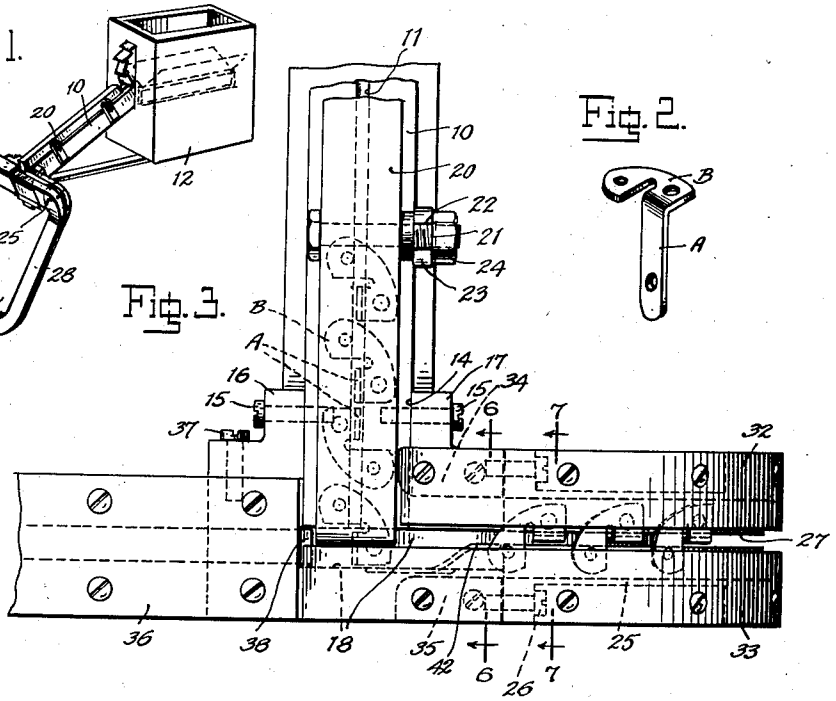
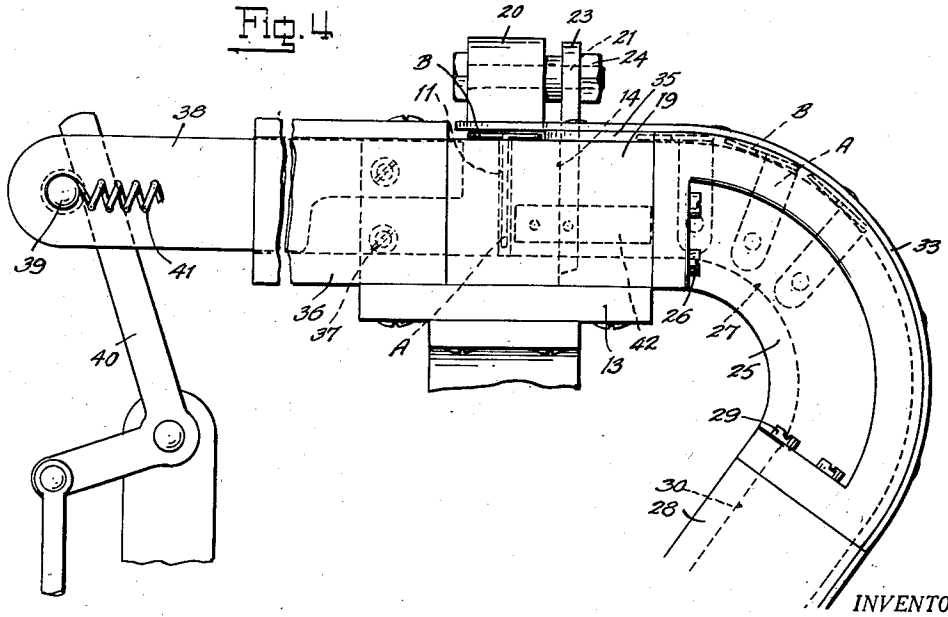


Fig. 4.



INVENTOR.
DANIEL L. JORDAN.
BY Thos. Watters.
ATTORNEY.

May 21, 1935. D. L. JORDAN 2,002,147

APPARATUS FOR ARRANGING AND FEEDING IRREGULAR SHAPED ARTICLES

Filed May 21, 1934 2 Sheets-Sheet 2

Fig. 5.

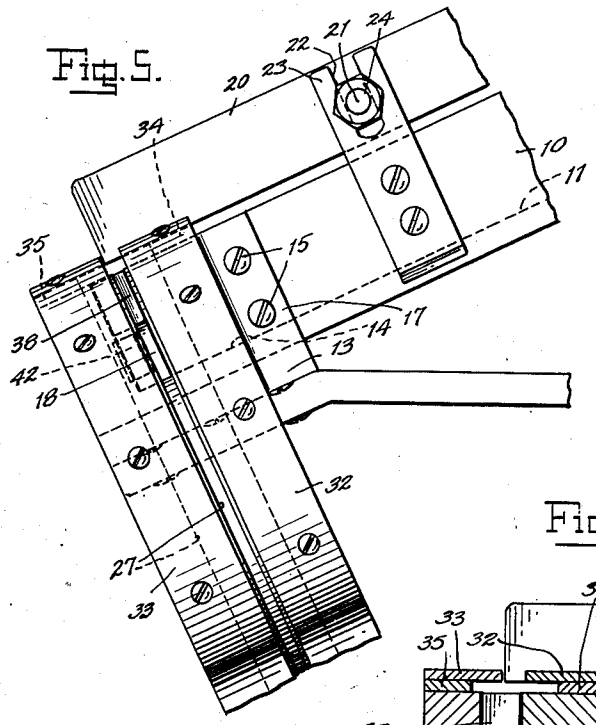


Fig. 6.

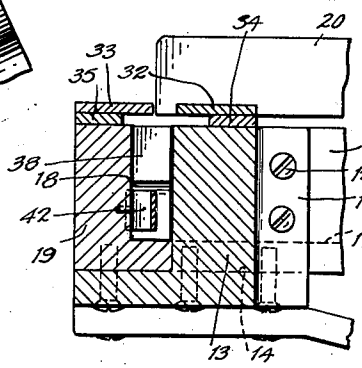


Fig. 7.

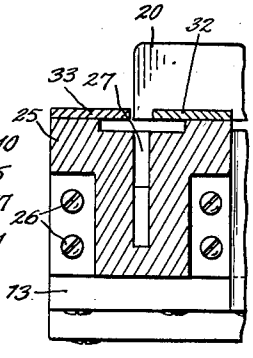


Fig. 8.

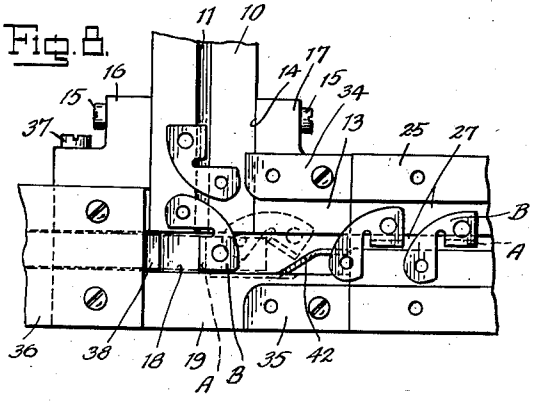
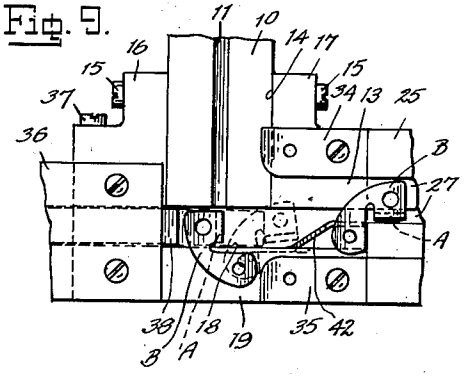


Fig. 9.



INVENTOR.
DANIEL L. JORDAN.
BY
ATTORNEY.

Patented May 21, 1935 2,002,147

UNITED STATES PATENT OFFICE

2,002,147

APPARATUS FOR ARRANGING AND FEEDING IRREGULAR SHAPED ARTICLES

Daniel L. Jordan, Bridgeport, Conn., assignor to Clark Metal Products, Inc., Bridgeport, Conn., a corporation of Connecticut

Application May 21, 1934, Serial No. 726,761

5 Claims. (Cl. 193—43)

The present invention relates to an apparatus for arranging and feeding irregular shaped articles, particularly articles which are not flat, as for instance the formed up plug and binding post member of an electrical plug device, an object being to provide such an apparatus into which a large quantity of the articles may be placed and which will then arrange and feed them in a predetermined position, this position being, for instance, one in which the articles may be fed into a dial type machine for the purpose of a forming or assembling operation on the articles, as for instance the attachment thereto of a binding post screw. To this end it is particularly proposed to provide a machine having a slideway to which the articles are fed promiscuously, that is with either end foremost, a second slide-way in which they are fed in pre-arranged uniform position, and means between the two slide-ways for automatically feeding them in said pre-arranged position irrespective of the position in which they emerge from the first slide-way.

With the above and other objects in view an embodiment of the invention is shown in the accompanying drawings, and this embodiment will be hereinafter more fully described with reference thereto and the invention will be finally pointed out in the claims.

In the drawings:

Fig. 1 is a perspective view of an apparatus according to my invention, and showing the same in relation to a feeding hopper and a dial press.

Fig. 2 is a perspective view of the article adapted to be fed therein.

Fig. 3 is a plan view of the apparatus.

Fig. 4 is a front elevation.

Fig. 5 is a side elevation, the same being shown in its normal inclined position.

Fig. 6 is a sectional view, taken along the line 6—6 of Fig. 3.

Fig. 7 is a sectional view, taken along the line 7—7 of Fig. 3.

Fig. 8 is a plan view of the apparatus, with the cover plates removed, and showing the manner of feeding the articles when in one position.

Fig. 9 is a similar view, and showing the manner of feeding the articles when in another position.

Similar reference characters indicate corresponding parts throughout the several figures of the drawings.

Referring to the drawings, the apparatus according to the exemplary illustrated embodiment of my invention, comprises an inclined slide-way 10 having a centrally disposed slot 11 therein, the upper end of the slide being engaged in the outlet opening of a hopper 12 which feeds the articles to the slide in either of the two positions indicated in dotted lines in Fig. 3, that is, with the prong or plug portion A of the article which engages the slot 11 either forwardly or rearwardly. The base of the article B engages flatly on the top of the slide and the articles move downwardly by gravity. The hopper may be of any suitable type, and if desired may be dispensed with and the articles placed in the slide 10 by hand. The lower end of the slide 10 is engaged in a block member 13 having a cut-out 14 to receive it, being secured thereto by screws 15 engaged in the upstanding portions 16 and 17 of the block at each side of the cut-out 14. The block has a passage 18 therein extending at right angles to the slot 11 and into which the articles move from the slide-way 10, the width of the passage being slightly wider than the width of the plug portion A of the article so that it can receive it cross-wise therein, as seen in Fig. 3.

The passage is preferably formed by a block member 19 of L-shape in cross-section secured to the base of the block member 13, as clearly shown in Fig. 6.

A cover bar 20 is mounted on the slide-way 10, being provided with threaded studs 21—21 projecting at one side which are engaged in slots 22—22 of brackets 23—23 secured to one side of the slide-way and adjustably secured therein by nuts 24—24. This bar 20 provides with the top of the slide-way 10 a horizontal slot for the bases B of the articles.

At one side of the block member 13 an arcuate slide member 25 is secured by screws 26 and is provided with a T-slot 27, the rearward wall of the upright portion of this slot being flush with the rearward wall of the passage 18. An inclined slide-member 28 is secured by screws 29 to the lower end of the arcuate slide member 25 and has a T-slot 30 in continuation of the slot 27 and which is adapted to convey the articles to the dial press 31 (Fig. 1) or other machine into which the articles are to be fed. A pair of cover strips 32 and 33 are secured to the slide members 25 and 28 to retain the articles in the T-slot, the inner edges of these strips being spaced apart to provide a slot through which the articles may be observed and engaged by a suitable tool in the event of jamming.

A pair of cam members 34 and 35 are secured upon the top surfaces of the respective block members 13 and 19 at each side of the passage 18 and at the right of the slide-way 10, the inner surfaces of these cam members being flush with the sides of the horizontal portion of the T-slot 27. The ends of the cover strips 32 and 33 extend over these cam members, the end of the strip 32 terminating adjacent the side of the cover bar 20, and the end of the cover strip 33 extending in front of the end of the cover bar.

A feeding slide is provided at the end of the passage 18 opposed to the slide member 25, and comprises a slide-way block 36 secured to the

block member 13 by screws 37, and in which a plunger 38 is adapted to reciprocate, the outer end of this plunger having a pin 39 engaged by a bell-crank lever 40 and which pin is connected by a spring 41 to the block 36. The bell-crank may be operated by any suitable well-known means and is adapted to retract the plunger in one direction of movement and permit it to project under the action of the spring 41 in the other direction of movement, projection of the plunger causing the articles to be fed along the passage 18, as will presently more fully appear.

An angular guide spring 42 is secured in the forward wall of the passage 18, its inclined portion extending inwardly from said wall and its end portion being flush with the forward wall of the vertical portion of the T-slot 27.

The operation is as follows:—

The articles move by gravity along the slideway 10 and may be disposed therein in either one of two positions, that is with plug portion A either disposed forwardly or rearwardly. Considering first the case of the article with the plug portion forwardly, as shown in Fig. 8, where this article has moved from the end of the slot 11 into the passage 18, the rearwardly extending portion of the base B is engaged upon the horizontal surface above the passage 18, as seen in Fig 8. As the feeding plunger moves in the passage 18 the article is fed to the right and the end of the base portion B engages the cam member 34, so that the article is tilted as shown in dotted lines, and the plug portion is disposed forwardly as it slides along the guide spring 42 into the T-slot 27. In the case of the article being in the slot 11 with the plug portion rearwardly, as shown in Fig. 9, the forwardly extending portion of the base B will engage the horizontal surface below the passage 18, as seen in Fig. 9. As the plunger is projected to feed the article the latter will engage the cam member 35 and be tilted, as shown in dotted lines, to dispose the plug portion A forwardly in the passage. It will be seen that in either case the articles all will be fed in the T-slot 27 of the slide member 25 in the same position, irrespective of their position in the slide 10.

I have illustrated and described a preferred and satisfactory embodiment of the invention, but it will be obvious that changes may be made therein within the spirit and scope thereof, as defined in the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:—

1. A feeding apparatus for irregular shaped articles including a base and a non-centralized projection on said base, comprising a slideway having a slot in which said projection is adapted to move, a second slideway having a slot in which said projection is adapted to move, feed means between said slideways having a passage communicating with said slots, a feed member movable in said passage, adapted to feed said articles to said second slideway, and camming means in relation to said passage adapted to contact the base of said articles as they are moved in said passage to turn said articles into a predetermined position.

2. A feeding apparatus for irregular shaped articles including a base and a non-centralized projection on said base, said projection being longer in one cross-sectional dimension than the other, comprising a slideway having a slot in which said projection is adapted to move, a second slideway having a slot in which said projection is adapted to move, said slots each being slightly wider than the short cross-sectional dimension of said projection, feed means between said slideways having a passage communicating with said slots said passage being slightly wider than the long cross-sectional dimension of said projection, a feed member movable in said passage adapted to feed said articles to said second slideway, and camming means in relation to said passage adapted to contact the base of said articles as they are moved in said passage to turn said articles into a predetermined position.

3. A feeding apparatus for irregular shaped articles including a base and a non-centralized projection on said base, comprising an inclined slideway having a slot in which said projection is adapted to move, a second slideway disposed in right angular relation to said first slideway and having a slot in which said projection is adapted to move, feed means between said slideways having a passage disposed in right angular relation to said first slideway and in line with said second slideway and communicating with said slots, a feed member movable in said passage adapted to feed said articles to said second slideway, and camming means in relation to said passage adapted to contact the base of said articles as they are moved in said passage to turn said articles into a predetermined position.

4. A feeding apparatus for irregular shaped articles including a base and a non-centralized projection on said base, said base extending at each side of the central plane of said projection, comprising a slideway having a slot in which said projection is adapted to move, a second slideway having a slot in which said projection is adapted to move, feed means between said slideways having a passage communicating with said slots, a feed member movable in said passage adapted to feed said articles to said second slideway, and camming means at each side of said passage adapted to contact the base of said articles as they are moved in said passage to turn said articles into a predetermined position.

5. A feeding apparatus for irregular shaped articles including a base and a non-centralized projection on said base said projection being longer in one cross-sectional dimension than the other and said base extending at each side of the central plane of said projection, comprising a slide-way having a slot in which said projection is adapted to move, a second slide-way disposed in right angular relation to said first slide-way, having a slot in which said projection is adapted to move, said slots being slightly wider than the long cross-sectional dimension of said projection, feed means between said slide-ways having a passage communicating with said slots slightly wider than the long cross-sectional dimension of said projection disposed in right angular relation to said first slide-way and in line with said second slide-way, a feed member movable in said passage adapted to feed said articles to said second slideway, and camming means in relation to said passage adapted to contact the base of said articles as they are moved in said passage to turn said articles into a predetermined position.

DANIEL L. JORDAN.