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MACHINE FOR ARRANGING AND GROUPING HAIRPINS

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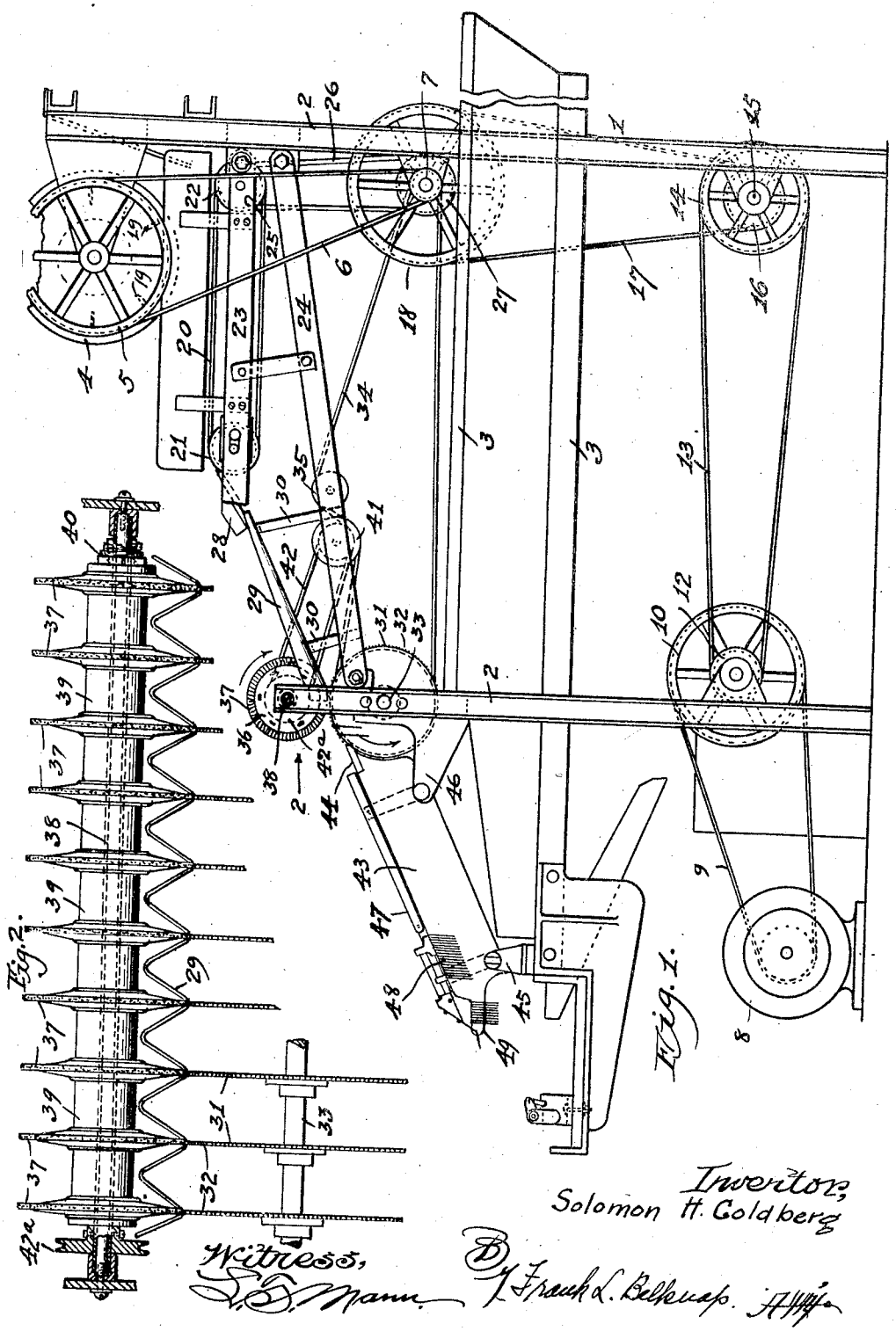


Fig. 1.

Fig. 2.

Witness,
S. S. Mann

Inventor,
Solomon H. Goldberg
By Frank L. Belknap.
Attys

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SOLOMON H. GOLDBERG, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE HUMP HAIRPIN MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF WEST VIRGINIA.

MACHINE FOR ARRANGING AND GROUPING HAIRPINS.

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This invention relates to improvements in a machine for arranging hairpins and refers more particularly to the positioning of a number of discs over a corrugated sheet whereby the hairpins are arranged upon a series of carrier members and pass to a counting mechanism.

This application is an improvement on a parent application Serial No. 276,009, filed February 10, 1919.

The machine materially decreases the manual labor and cost of manually handling quantities of hairpins to arrange them in upright position so that they can be quickly and easily packaged.

Figure 1 is a side elevation of the machine.

Fig. 2 is a detail of the arranging discs looking in the direction shown by the arrow 2 in Fig. 1.

Referring to the drawings—1 designates a frame comprising uprights 2 and supporting bars 3 in which the mechanism is mounted. The rotatably mounted drum 4 is driven by a pulley 5 and belt 6 from the shaft 7. This shaft may be driven from any source of power, but in the accompanying illustration it is driven from the motor 8 through the belt 9, pulley 10, pulley 12, belt 13, pulley 14, shaft 15, pulley 16, belt 17 and pulley 18. The drum 4 receives hairpins or other articles through an enlarged hollow bearing in the opposite end of the drum from that shown in Fig. 1. The articles are deposited in the rotating drum and caused to escape therefrom through apertures in the circumference of the drum. The separation in the drum is effected by pins 19 secured to the outer shell and projecting inwardly. The hairpins or other articles are deposited from the drum upon a belt 20 mounted upon suitable rollers 21 and 22. The rollers are rotatably mounted on bars 23, the latter being secured to the uprights 2 and side bars 24. The belt is driven by a pulley 25, a belt 26 and a pulley 27 on the shaft 7. The chute 28 delivers the hairpins or other articles to a stationary inclined corrugated plate 29 secured to the bars 24 by means of the arms 30. The corrugations or raised portions of the plate 29 are of increasing depth and width from the top to the bottom and serve to guide the hairpins or other articles lengthwise to the selecting mechanism, that is, the legs of the pins straddle the raised corrugations and are fed on to the selecting mechanism with the prongs or pointed ends foremost. The selecting mechanism comprises a series of discs 31 having notches 32 rotatably mounted on the shaft 33. These discs are driven from a pulley on the shaft 7 by means of the belt 34 over the idler pulley 35 mounted on the cross bars 24. Directly above these discs and contacting therewith are positioned a series of circular brushes 36 having fibre bristles 37 mounted on their outer circumference. These brushes are mounted upon a shaft 38 and are held in proper position by spacer spools 39 positioned between the discs. A lock nut 40 holds the assembly in rigid position on the shaft 38. The shaft on which the disc brushes are mounted is rotated by a belt drive from an idler pulley 41 driven from the belt 34 and driving shaft 38 through the belt 42 running over the pulleys 41 and 42a. The disc brushes contacting the circumferences of their respective discs sweep the hairpins over the discs and down on to inclined plates 43. Fingers 44 serve to remove the hairpins from the disc 31 and deliver them properly to the inclined plates and thence to the counting mechanism.

The plates 43 are secured to the brackets 45 and 46 and have retaining bars 47 to insure the perfect alinement of the pins. The pins on sliding down the inclined plates 43 strike against the stop pins and are collected to a predetermined amount, as shown at 48 where they are automatically tripped on to a discharge arm 49 and thence tripped therefrom to be later packaged.

The novelty of the invention lies wholly in the brushing of the pins regularly over the discs. Heretofore, in the arranging mechanism the pins have been allowed to collect upon the discs and rotate with the discs, the separation and arranging of the pins being accomplished by the notches 32. Where a number of pins simultaneously are deposited upon the disc they are not properly fed on to the edges of the inclined plates as it would not properly separate the pins in their rotation. To rectify this accumulation of pins upon any one of the

discs, the positioning of the brushes directly over the discs accomplishes a uniform feed of the pins over the disc and a separation of the individual pins. When a number are simultaneously fed upon the discs the brushing action of the rotating fibre brushes separates the pins and feeds them regularly and uniformly on to the inclined plates.

After the pins have been removed from the discharge arm they are automatically directed to a packaging mechanism (not shown).

I claim as my invention:

1. A hairpin arranging device, comprising a separating drum, a feed conveyor onto which the separated pins are deposited, inclined feeding means, rotating feed discs and rotating brushing means contacting the discs for passing the pins to the inclined feeding means.

2. A hairpin arranging device, comprising a separating drum, a feed conveyor on to which the separated pins are deposited, rotating feed discs and a corrugated chute for dividing and distributing the pins to the separate discs, inclined slides and rotating disc brushes contacting the feed discs for passing the pins to the slides.

SOLOMON H. GOLDBERG.