

July 31, 1934.

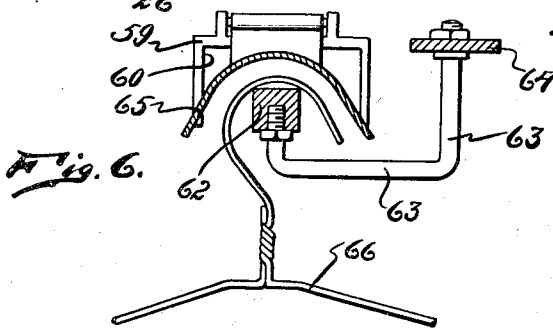
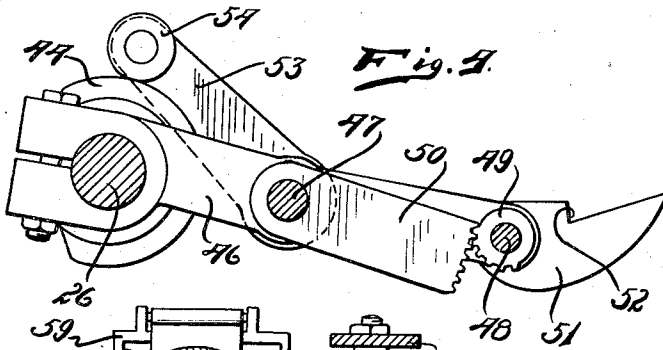
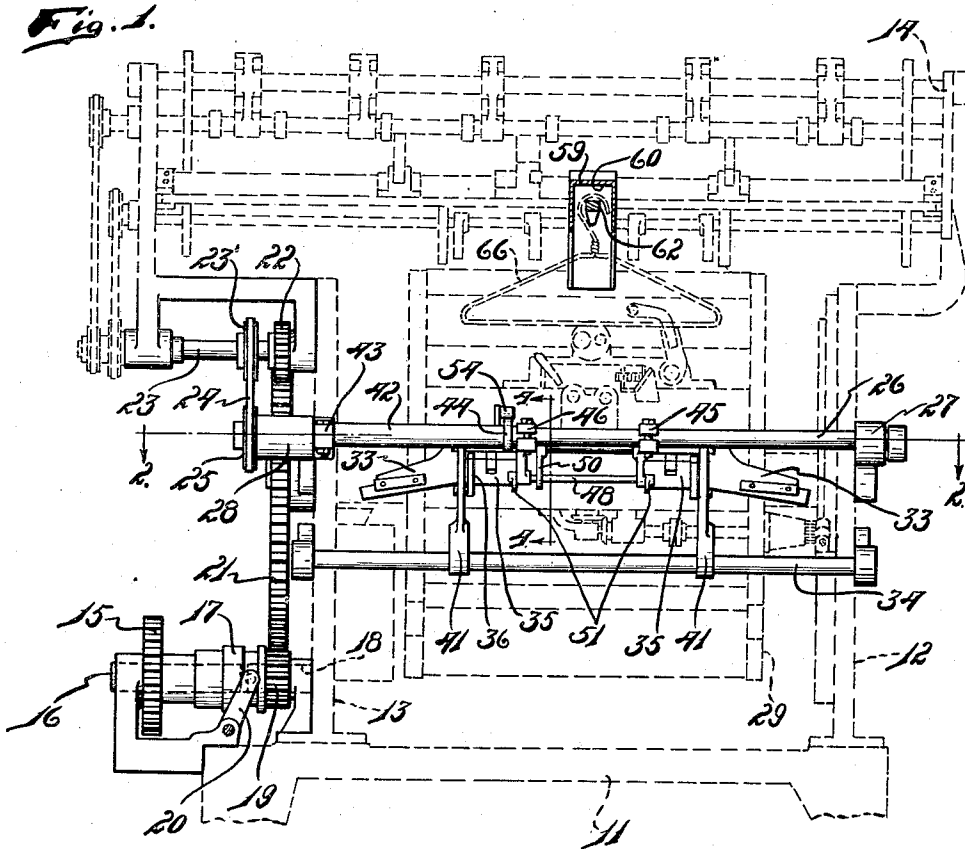
J. H. MOORE

1,968,305

DISCHARGING MECHANISM ON FORMING MACHINES

Filed Feb. 29, 1932

2 Sheets-Sheet 1



INVENTOR.
JOHN H. MOORE
BY *Thomas J. Connelley*
ATTORNEY.

July 31, 1934.

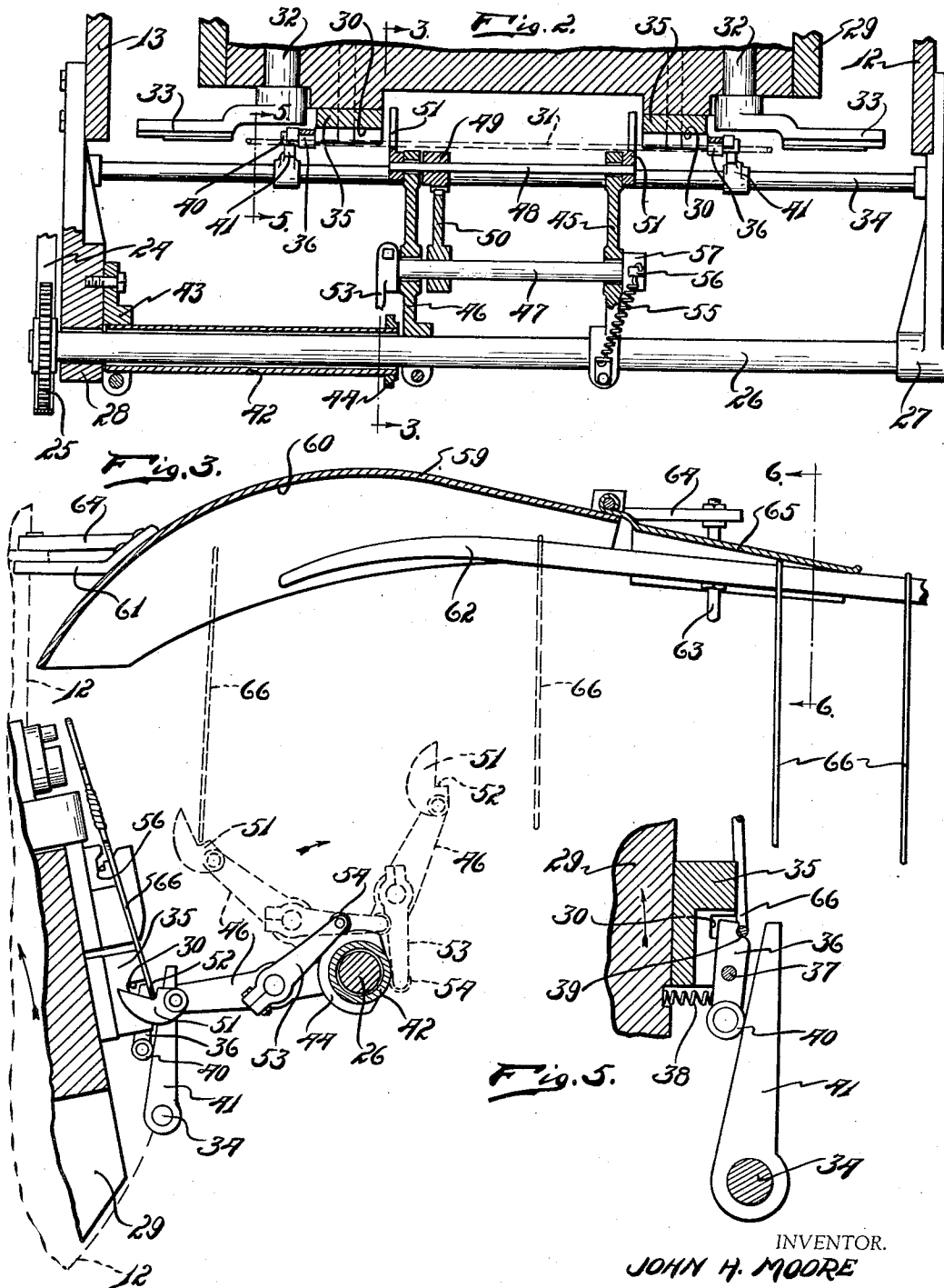
J. H. MOORE

1,968,305

DISCHARGING MECHANISM ON FORMING MACHINES

Filed Feb. 29, 1932

2 Sheets-Sheet 2



INVENTOR.
JOHN H. MOORE

BY
Thos. Donnelly
ATTORNEY.

UNITED STATES PATENT OFFICE

1,968,305

DISCHARGING MECHANISM ON FORMING MACHINES

John H. Moore, Detroit, Mich., assignor, by mesne assignments, to Andrew Ruen Hanger Co. Inc., a corporation of Michigan

Application February 29, 1932, Serial No. 595,691

7 Claims. (Cl. 140—71)

My invention relates to a new and useful improvement in a release and discharging mechanism for forming machines, and adapted particularly for use on garment hanger forming machines. The present invention forms in part, a continuation of, and in part, an improvement on my co-pending application, Serial No. 432,322 now matured into Patent No. 1,888,803 issued November 22, 1932.

It is an object of the present invention to provide in a forming machine of this class a mechanism, which will release the formed article and discharge it from the forming machine without interrupting the operation of the forming machine.

It is another object of the present invention to provide in a forming machine of this class a structure whereby the formed article may be discharged from the machine and automatically placed upon a supporting rack.

Another object of the invention is the provision in a forming machine of this class of discharge mechanism so constructed and arranged as to be durable and efficient in use, automatic in operation, compact, economical to manufacture, and simple in structure.

Other objects will appear hereinafter.

The invention consists in the combination and arrangement of parts hereinafter described and claimed.

The invention will be best understood by a reference to the accompanying drawings which form a part of this specification, and in which,

Fig. 1 is a front elevational view of a garment hanger forming machine embodying the invention.

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a fragmentary central sectional view of the invention showing the receiving rack partly in side elevation and partly in section, taken on line 3—3 of Fig. 2.

Fig. 4 is a fragmentary sectional view taken on line 4—4 of Fig. 1.

Fig. 5 is a fragmentary sectional view taken on line 5—5 of Fig. 2.

Fig. 6 is a sectional view taken on line 6—6 of Fig. 3.

As shown in the drawings the invention is mounted upon a supporting bed 11 upwardly from which project the standards 12 and 13 supporting the hopper 14. A gear 15 which is adapted to be driven by suitable source of power is fixedly mounted on the shaft 16, which is connected through the clutch 17 to the shaft 18, on which

the gear 19 is fixedly mounted. The clutch is operated by the yoke 20. The gear 19 meshes with the gear 21 which in turn meshes with a gear 22 fixedly mounted on the shaft 23. A gear 23' is fixedly mounted on the shaft 23 and connected by the chain belt 24 to the gear 25 which is fixedly mounted on the shaft 26, which shaft is journaled in bearings 27 and 28 mounted on the standards 12 and 13 respectively. A rotatable carrier 29 is used in conjunction with the invention, this carrier 29 being mounted rotatably on the standards 12 and 13 and driven by the gear 21. The carrier carries a plurality of forming and twisting mechanisms, which cooperate with, while not forming a part of the structure which constitutes the present invention. On the carrier 29 which rotates in the direction indicated by the arrows in Fig. 5 and Fig. 3 is mounted a block 35 in which is formed a wire receiving slot 30 into which the wire passes or is fed from the hopper 14 by suitable feeding mechanism. In Fig. 2 I have indicated rockable shafts 32 which carry forming arms 33 adapted to bend the strand of wire 31 around the forming blocks 35. As the wire 31 enters the slot 30 it is securely clamped in position so that movement in the slots during the forming operation performed by forming arms 33 is prevented. In the fabrication of a garment hanger it is customary to twist the ends of the wire to form a twisted neck and mechanism for accomplishing this consists partly of a member having a slot 56 formed therein. In order to elevate the finished article so as to disengage it from the slot 56 and to remove the finished article from the slots 30, I have provided the releasing and discharging mechanism, which forms the subject matter of the present invention.

Swingably mounted intermediate its ends on each of the blocks 35 with a pin 37 is a releasing bar 36 having on one end a notch 39, and provided on its opposite end with a roller 40 which is normally held in position to engage the cam presser bar 41 by the spring 38. This presser bar 41 is stationary and mounted on the shaft or rod 34. The rod 34 is so located that as the drum 29 is rotated, the roller 40 will engage the presser bar 41 immediately upon the finish of the forming operation, so that the lower end of the garment hanger 66, which engages in the slot 30 will be pressed outwardly into the position shown in Fig. 5.

Embracing the shaft 26 is a sleeve or bushing 42, which is held stationary by means of the clamp 43. This clamp 43 permits of a means for

securely fastening the bushing or sleeve 42 against rotation, and at the same time affords an easy means for adjusting the bushing or sleeve 42 circumferentially of the shaft 26. Carried on the end of the bushing or sleeve 42 is a cam disk 44.

Fixedly mounted on the shaft 26 and rotating therewith are the arms 45 and 46 which project radially outwardly therefrom. Projected through the arms 45 and 46, so as to be rockable is the shaft 47. A rod 48 is projected through the arms 45 and 46, this rod being also rockable. Fixedly mounted on the rod 48 is a collar 49 having teeth formed on one side as clearly appears in Fig. 4, adapted to mesh with the teeth formed on the end of the segment bar 50, which is fixedly mounted on the shaft 47. Fixedly mounted on the ends of the rod 48, and projecting outwardly therefrom, are the engagement fingers 51, each having a cut away portion to provide the shoulder 52. Fixedly mounted on the shaft 47 is one end of an arm 53, the other end of which carries a roller 54 riding on the periphery of the cam 44. The construction is such that as the drum 29 rotates and arrives at a predetermined position of its rotation, the roller 40 will engage the bar 41 so as to move the lower portion of the garment hanger 66 outwardly into the position shown in Fig. 5. The shaft 26 is rotated in unison with and is timed in accordance to the rotation of the drum 29 so that, as the roller 40 rocks the member 36 to move the lower part of the hanger 66 into the position shown in Fig. 5, the arms 45 and 46 will have moved into the position shown in full lines in Fig. 3; and segment bar 50 will have rocked to the position to bring, by a rocking of the rod 48, the fingers 41 into the position shown in full lines in Fig. 3 so that, the lower portion of the garment hanger will be engaged by the shoulder 52. As the movement continues the garment hanger will be raised upwardly by the engagement fingers 51 so as to clear the slot 56. As the rotation of the shaft 26 continues through a rocking of the shaft 47 because of the engagement of the roller 54 with the cam 44, the rod 48 will be rocked so as to swing the engagement fingers 51 rearwardly so that a hooking of the garment hanger 66 by the engagement fingers will not be effected; and a passage of the garment hanger upwardly through the throw exerted thereon by the arms 45 and 46 may be accomplished. The roller 54 is maintained pressed closely against the periphery of the cam 44 by the pressure exerted by the spring 55 which is connected to the lug 56 on the collar 57, which is fixedly mounted on the shaft 47.

As the arms 45 and 46 move upwardly, these arms travelling in the direction indicated by the arrow in Fig. 3, the engagement fingers 51 will carry the garment hanger upwardly and propel the same into the hood 59, provided with the wide compartment or receiving space 60. This hood is supported by suitable bracket 61 mounted on the frame or standards 12 and 13. Extending into the hood 59 is a supporting rail 62 over which the neck or head of the garment hanger will engage, this rail 62 being downwardly inclined from the hood so that the garment hangers will slide downwardly and pass below the swingable cover 65, which is designed to check the speed of the garment hangers passing downwardly on the supporting rail 62. This supporting rail is supported by suitable arm 63 carried by the bracket 64 which is attached to

the frame or standards 12 and 13. With a mechanism such as described I have provided a simple and effective means of transferring the garment hangers from the forming mechanism to a suitable supporting rail or rack, and a simple effective means for releasing the garment hangers or completed articles from the forming mechanism.

While I have illustrated and described the preferred form of construction, I do not wish to limit myself to the precise details of structure shown, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

1. In a wire forming machine of the class described having a wire receiving slot: a releasing bar rockably mounted for projection across said slot; and a presser bar adapted for engagement with one end of said releasing bar subsequent to the forming operation, and swinging said bar across said slot and release therefrom the material engaged therein.

2. In a wire forming machine of the class described having a material receiving slot formed therein: a rockably mounted releasing bar swingable across said slot; and a presser bar engageable with one end of said releasing bar, subsequent to the forming operation, for swinging the same across said slot for releasing the material therefrom; said releasing bar having at one end a notch formed therein for engagement of the material positioned in said slot.

3. In a wire forming machine of the class described having a material receiving slot therein for reception of material to be operated upon: a swingably mounted releasing bar having a notch formed in one end for engagement with the material in said slot and swingable at said notched end across said slot; a presser bar engageable with the opposite end of said releasing bar for swinging said releasing bar across said slot, subsequent to the forming operation.

4. In a wire forming machine of the class described having a slot for the reception of the material to be operated upon: a releasing bar swingably mounted intermediate its ends, and provided at one end with a notch for engagement with the material in said slot and swingable at said notched end across said slot for releasing the material therefrom; a roller carried on the opposite end of said releasing arm: and a presser bar engageable with said roller for moving said releasing bar at its notched end across said slot subsequent to the forming operation.

5. In a wire forming machine of the class described having a movable carrier for forming material to be operated upon to a predetermined shape: a rotating shaft; a pair of arms fixedly connected to and radiating outwardly from said shaft; engagement fingers carried by said arms and rockable thereon, and means for rocking said fingers to predetermined positions relatively to said arms at predetermined positions of rotation of said shaft.

6. In a garment hanger forming machine of the class described, a discharge mechanism comprising: a rotating shaft; a supporting member projecting outwardly from said shaft and fixed thereon; engagement fingers rockably mounted on said supporting member and engageable with material to be discharged; and means for rocking said fingers to predetermined positions rela-

tively to said shaft upon rotation of said shaft to predetermined positions.

beyond one end thereof; and means positioned adjacent said hood for engaging a garment hanger formed in said machine and discharging the same therefrom into said hood onto said rail.

7. In a garment hanger forming machine of the class described, a supporting rail for supporting garment hangers formed in said machine:
5 a hood extending over said rail and extending

JOHN H. MOORE.

80

10

85

15

90

20

95

25

100

30

105

35

110

40

115

45

120

50

125

55

130

60

135

65

140

70

145

75

150