

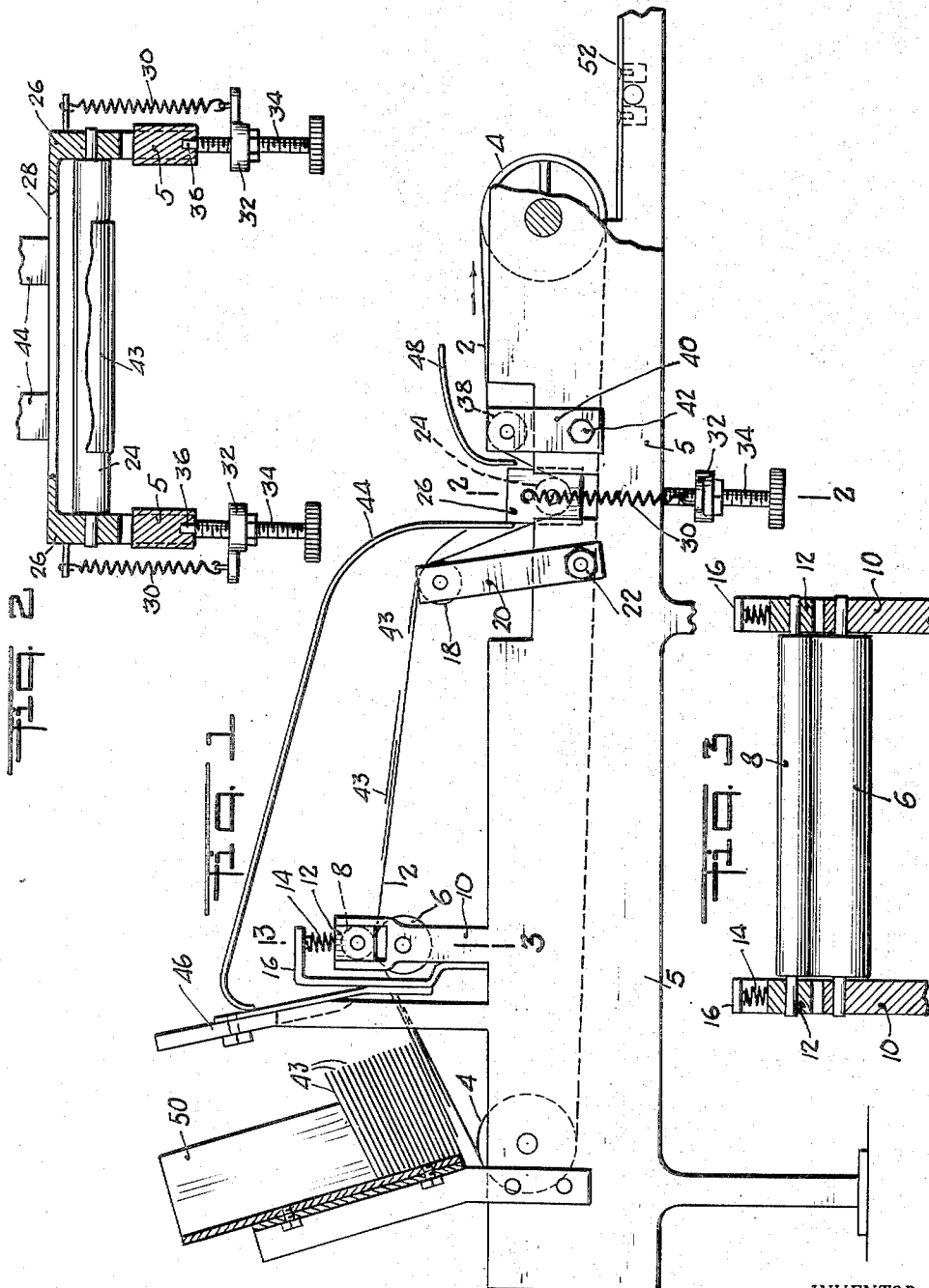
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MACHINE FOR DECURLING LABELS

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MACHINE FOR DECURLING LABELS

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1 Claim. (Cl. 92—70)

1

Paper labels for packages of stick chewing gum and other small packages have a tendency to flex or curl in one direction after printing, and it has been a serious problem to flatten or decurl the labels in order that they may be properly acted upon by the feeding and other label-engaging devices of the machines that are employed to apply the labels about the packages.

The principal object of the present invention is to provide a machine which is simple in construction and efficient in operation for flattening or decurling labels of the kind described.

The invention is illustrated, by way of example, in the accompanying drawings, in which:

Figure 1 is a side view, partly diagrammatical, of my improved machine in its preferred form; and

Figs. 2 and 3 are transverse sectional views, partly in elevation, taken substantially on the lines 2—2 and 3—3 of Fig. 1, respectively.

The machine illustrated in the drawings comprises a conveyor belt 2 which passes over pulleys 4 and that are mounted to turn in bearings on the machine frame 5, the rear pulley being driven so as to drive the belt in the direction of the arrows.

The forward portion of the upper stretch of the conveyor belt 2 is inclined upwardly from the front pulley 4 and passes between rollers 6 and 8. The roller 6 is journaled in bearings in standards 10 on the machine frame, and the roller 8 is journaled in bearings in blocks 12 which are mounted to slide in guideways in the standards 10. The roller 8 is pressed downwardly by means of coiled springs 14 which are interposed between the top sides of the blocks 12 and bracket members 16 secured to the machine frame. From the rollers 6 and 8 the conveyor belt is inclined downwardly and rearwardly and passes over a guiding roller 18 which is journaled in bearings in bracket members 20 which are secured by bolts to the machine frame, one of the bolts being shown at 22. Upon loosening the bolts, the roller 18 may be adjusted about the axes of the bolts.

From the guide roll 18 the upper stretch of the belt passes downwardly beneath a roller 24, the ends of which are journaled in bearings in blocks 26 that are mounted to slide in guideways in the machine frame, the two blocks 26 being connected by a cross-bar 28. The roller 24 is pressed downwardly by means of coiled springs 30, the upper ends of which are secured to the blocks 26 and the lower ends of which are secured to lugs on collars 32. Screws 34 are screw-

2

threaded through the collars 32 and their upper ends are mounted to turn in sockets 36 in the machine frame 5. By turning the screws 34 the pressure of the roll 24 against the belt may be varied as desired.

From the pressure roller 24 the belt passes over a guide roller 38 which is journaled in bearings on standards 40, each of which is secured to the machine frame by a bolt 42. Upon loosening the bolts 42 the guide roll 38 may be adjusted about the axes of the bolts.

It will be noted that by adjusting the rolls 18 and 38 about the axes of the bolts 22 and 42, and by adjusting the tension of the pressure roll 24 the angular relation of the stretches of the belt extending between the pressure roller 24 and the guide rolls 18 and 38 may be varied as desired.

The labels 43 conveyed by the conveyor belt 2 are guided between the pressure roll 24 and the belt by means of guides 44, the forward ends of the guides extending in proximity to the bite of the pressure roll 24 on the belt 2. The other ends of the guides 44 are secured to a bracket 46.

As the labels leave the pressure roll 24 they are guided by means of one or more guide strips 48, so as to prevent them from being thrown from the belt when the belt is driven at high speed.

At the front of the machine there is a hopper or chute 50 through which labels may be delivered to the conveyor belt, and at the rear of the machine there is a table 52 for receiving the labels as they leave the rear end of the conveyor belt.

In the operation of the machine, the flexed or curled labels are supplied to the hopper and conveyor belt in a direction transverse of the curl in the labels and with the convex side of the labels uppermost. As the labels slide down the hopper 50 and into engagement with the conveyor belt they are carried by the conveyor belt between the rollers 6 and 8. It is unnecessary for the labels to pass separately between the rollers 6 and 8, and a number of them may pass between these rollers at the same time in more or less overlapping or shingled relation. The rollers 6 and 8 apply pressure to the labels which tends more or less to temporarily smooth or straighten them.

After leaving the rollers 6 and 8 the labels are conveyed by the belt over the guide roller 18, beneath the lower end of the guide strips 44, and beneath the pressure roller 24. As they pass be-

3

neath this pressure roller, they are firmly pressed against the conveyor belt, and as they leave the pressure roller and pass beneath the guides 48 and over the guide roller 38, they are flexed in more or less U-form in the opposite direction in which they were flexed or curled when they were initially supplied to the machine. From the guide roller 38 the labels pass over the end of the conveyor belt and are deposited upon the receiving table 52.

It has been found that with this construction, by varying the pressure of the pressure roller 24 and adjusting the relative positions of the rollers 18 and 38 so as to vary the degree of flexing of the labels as they pass beneath the pressure roller 24, the desired flattening or decurling of the labels may be effected and the labels delivered to the receiving table 52 in uniformly flattened condition irrespective of the curled condition of the labels initially supplied to the machine. I have found that the labels acted upon retain their flattened or decurled condition while in storage and until supplied to the wrapping machines.

It will be apparent that the machine is simple in construction, easily adjusted, and capable of a high rate of production.

As will be evident to those skilled in the art, my invention permits various modifications without departing from the spirit thereof or the scope of the appended claim.

4

What I claim is:

In a machine for decurling labels of the class described, an endless conveyor belt for the labels, means for driving the belt comprising pulleys over which the belt passes, guide rollers engaging the underside of one of the stretches of the belt, said guide rollers being spaced apart, a pressure roller spaced a distance below the level of the guide rollers and engaging the top side of said stretch of the belt intermediate said guide rollers, means for guiding labels carried by the belt so as to cause them to pass between the pressure roller and the belt, a support for the pressure roller having bearings in which the ends of the pressure roller are journaled, said support being mounted for vertical movement, means comprising springs connected with the support for yieldingly pressing said pressure roller downwardly to apply pressure to the labels as they pass between it and the belt, and means for adjusting the tension of said springs.

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The following references are of record in the file of this patent:

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