

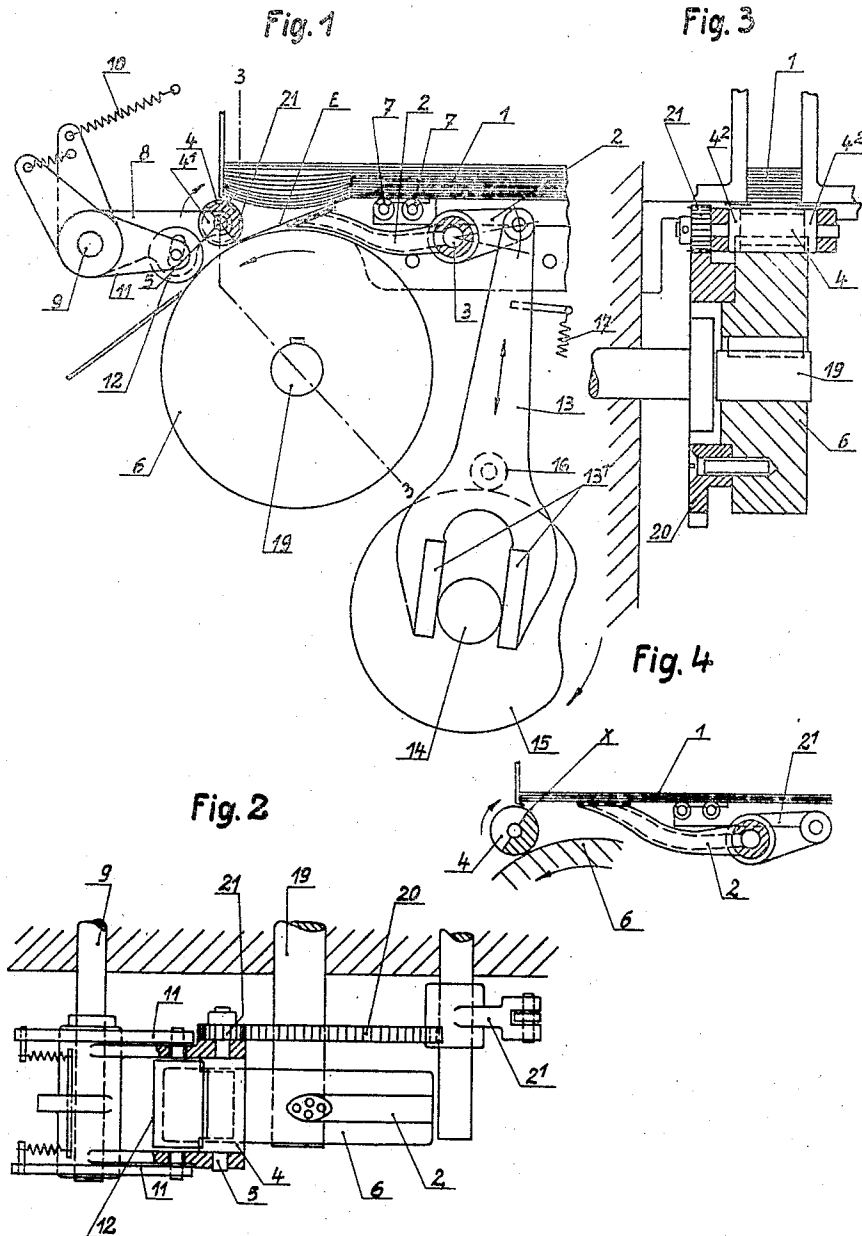
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DEVICE FOR DETACHING LABELS FROM A PILE

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DEVICE FOR DETACHING LABELS FROM A PILE

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This invention relates to a device for detaching the bottom label of a pile of labels by a gripper and transferring it to a pair of delivery rolls and more particularly to an arrangement wherein the bottom label is gripped at one end and fed to the delivery rollers while the other end still remains in the pile.

Heretofore a device of this kind has comprised controlled grippers in the form of a delivery roller mounted on a rocking member the arrangement being such that said delivery roller is pressed into contact with another roller at intervals only.

The present invention has for its object to provide a device in which all special control is dispensed with.

According to the invention the device comprises a carrier roller, which is in continuous engagement with a delivery roller and is disposed within reach of that end of the label which is bent down from the pile by means of grippers. The carrier roller is provided with a recess or gap in the periphery in such a manner that during the downward travel of the end of the label on to the delivery roller, the end can project through the recess until it comes in contact with the uninterrupted periphery of the roller when the end of the label is pressed down onto the delivery roller and gripped between the two rollers and thus drawn out of the pile.

In this arrangement the carrier roller may be kept in constant engagement with the delivery roller and accordingly caused to run at any desired speed, all special control means being dispensed with and the working speed is considerably increased.

The ends of the carrier roller are preferably left intact on the surface bearing against the delivery roller the recess being provided in the middle portion of said carrier roller.

To ensure the further transport of the label pushed forward by the carrier roller a solid presser roller is arranged immediately behind the latter in constant engagement with the delivery roller in such a manner that the end of the label is gripped by the solid roller before it has been released by the recess in the carrier roller.

To enable the invention to be fully understood it will now be described by reference to the accompanying drawing in which:—

Fig. 1 is a side elevation of a device constructed according to the invention, and

Fig. 2 is a plan view thereof, and

Fig. 3 is a vertical cross section along the line 3—3 of Fig. 1.

Fig. 4 is a view of a detail.

As shown one end of the bottom label E is drawn downwards from the pile 1 by means of the suction head 2, adapted to turn about the joint 3. This bottom label is gripped by a carrier roller 4 arranged at the end of the pile and mounted on the shaft 5. The carrier roller 4 is provided with a recess 4' which at the moment the end of the label swings downwards, is exactly in the position shown in Fig. 4. During the bending down of the end of the label by the suction head 2, the carrier roller 4 turns in the direction of the arrow shown in Fig. 1 and assists the downward bending of the end of the label by the corresponding edge of the recess. As soon as the solid portion of the carrier roller 4 (indicated by hatching in the cross section Fig. 1) comes in contact with the delivery roller 6, which turns in the direction indicated by the arrow, the bottom label is gripped by the two rollers 4 and 6 and drawn out of the pile. Two rollers 7 are provided for lessening the friction against the support of the pile. The shaft 5 of the carrier roller 4 is mounted on a rocking lever 8 adapted to turn on the pivot 9 and constantly held by the spring 10 so as to press against the delivery roller 6. The pivot 9 also carries the lever 11 supporting a presser roller 12 which, after the label has been pushed forward sufficiently by the carrier roller 4, grips the label and passes it on. The lever 11 is also engaged by a spring tending to swing it so as to press against the roller 6. It should also be mentioned that the recess 4' in the carrier roller 4 is formed in such a manner that two solid rims 4'' are left as can be seen, more particularly, in Fig. 3. When the recess 4' of the roller 4 faces the roller 6, these rims 4'' run in contact with this latter

roller and prevent the lever 8 from being swung too far by the spring 10.

The suction head 2 is controlled by means of a thrust rod 13, which engages the rear end 2' of the suction head 2, and by means of its forked lower end 13' engages the shaft 14 which carries a cam 15. This cam coacts with a roller 16 mounted on the thrust rod 13 and causes the suction head to approach the pile, inasmuch as the thrust rod 13 is allowed by the cam to come under the influence of the spring 17. As soon as the edge of the recess 4' in the carrier roller has reached the position shown in Fig. 4 in the course of its rotation, the suction head 2, which is under suction, is depressed by the action of the cam 15, thus causing the end of the label to lie on the roller 6 which then, with the joint action of the carrier roller 4, feeds it forward as shown in Fig. 1.

It should also be noted that a spur wheel 20 is mounted on the driving shaft 19 on which the roller 6 is mounted and gears with the pinion 21 on the shaft 5, so that the carrier roller 4 is positively actuated together with the delivery roller 6.

What I claim is:—

1. A device for transferring and feeding labels comprising in combination, a magazine adapted to contain a pile of said labels, a suction gripper adapted to operate on one end of the bottom label of said pile, a carrier roller with a central recess adjacent to the end of the pile on which the gripper operates, a delivery roller in contact with the carrier roller and a presser roller arranged behind the carrier roller and in contact with the delivery roller, said carrier roller and the presser roller being both mounted on levers on a common pivot, said levers being fitted with springs which press the said two rollers against the delivery roller.

2. A device for transferring and feeding labels comprising in combination a magazine adapted to contain a pile of said labels, a suction gripper pivotally mounted and adapted to operate on one end of the bottom label of the pile, a carrier roller with a peripheral recess adjacent to the end of the pile on which the gripper operates, a delivery roller in contact with the carrier roller, gearing between the two rollers whereby the delivery roller positively drives the carrier roller and a presser roller behind the carrier roller and in contact with the delivery roller, said carrier roller and said presser roller both being pivotally supported from a common pivot and means to press the said two rollers against the delivery roller.

3. A device for transferring and feeding labels comprising, a magazine adapted to contain a pile of said labels, suction means for moving one end of the bottom label of said pile a delivery roller onto which said moved end may be delivered, a carrier roller

mounted between the said delivery roller and said magazine, said carrier roller having a peripheral recess to permit free movement of said label end past said roller and onto said delivery roller, and a solid portion which when said carrier roller is rotated grips said label end between it and said delivery roller and draws said label from said pile, and a presser roller behind said carrier roller and in contact with said delivery roller, said carrier roller and said presser roller being pivotally supported from a common point and means for continuously urging said carrier and presser rollers against said delivery rollers.

4. A device for transferring and feeding labels comprising in combination a magazine adapted to contain a pile of labels, a suction gripper pivotally mounted and adapted to operate on one end of the bottom label of said pile, a carrier roller with a peripheral recess adjacent to the end of the pile on which the gripper operates, a delivery roller in contact with the carrier roller, means for positively driving said carrier roller from said delivery roller and a presser roller behind said carrier roller and in contact with said delivery roller, said carrier roller and said presser roller being pivotally supported from a common point.

In testimony whereof I affix my signature.

ERNST HERMANN JÄHNE.