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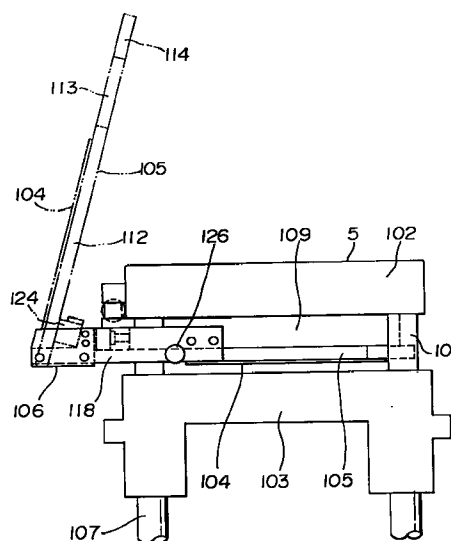
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(54) Die cutting device for a printing device

(57) A die cutting device for a printing device having an upper frame (102) movable up and down; an upper chase plate (105) disposed under said upper frame (102) and movable into and from underneath the latter along a line perpendicular to a direction of feeding a strip-shaped printed article (S2) made up of a release paper and a printing paper disposed thereon via an adhesive agent, said movement being guided at both side edges of upper chase plate (105) by a pair of rails (108, 108), movable up and down together with frame (102); a stationary lower frame (103) below said upper chase plate (105); a lower chase plate (129) disposed on lower frame (103), the article (S2) being intermittently moved through a space between upper frame (102) and lower frame (103); and a punching blade (104) for punching a printed frame of the article (S2), punching blade (104) being attached to a lower surface of upper chase plate (105), punching being carried out while feeding of the article (S2) is stopped, by moving downwards said upper frame (102), thereby cutting the printing paper and the adhesive agent layer.

Fig. 3



Description

BACKGROUND OF THE INVENTION

The present invention relates to a die-cutting device for a printing device, wherein the detachment of an upper chase plate can be performed safely and with ease in a die cutting device for punching labels, seals and the like in which a pattern or letters is suitably printed on paper or film by a duplicator of a printing device without cutting the peeling sheet.

Prior art

With respect to a printing device comprising a duplicator for performing intermittent printing onto a strip-shaped article subjected to printing supplied from a paper supply device using a printing impression roll which performs positive or reversed rotation when performing forward or backward movement in a direction perpendicular to a transmission direction of the strip-shaped article subjected to printing; a die cutting device for punching a strip-shaped printed article printed by the duplicator into a suitable shape; and a punched residue winding device for winding a punched residue after punching by the die cutting device; in the case of the duplicator, an application roller for applying ink during the forward step onto a printing impression face of the printing impression roll which performs positive or reversed rotation while performing forward or backward movement, and an application roller for applying ink during the backward step, are allowed to contact each of the individual ink rolls which rotate in the reverse direction with respect to the rotation direction of each of the application rollers, so as to adhere ink onto each of the application rollers; and in the conventional duplicator, for example, as shown in Figs. 2A, 2B, and 2C, a plurality of ink rolls are interposed between a bottling roll 46 for sending ink from an ink tank 45 and the application roller 48 for applying ink onto the printing impression roll 47.

By disposing such a plurality of ink rolls therebetween, the adhesion of ink onto the application roller for applying ink onto the printing impression roll has been equalized.

Additionally, in contrast, with respect to a duplicator in which a printing impression roll is allowed to perform positive or reversed rotation with forward or backward movement, and in which a printing paper sheet is intermittently supplied and stopped by a certain length in a direction perpendicular to the forward or backward movement direction to perform printing, a phenomenon has occurred in which the printing paper sheet deviates slightly during contact of the printing impression roll with the printing paper sheet.

The applicant has made various improvements for devices for adjusting such deviation of the printing paper sheet, and for example, has filed a patent application as Japanese Patent Application No. 59-162505.

This patent application applies to a duplicator having a reciprocating printing impression roll which is formed such that a rack mechanism is formed in parallel with the moving direction of a reciprocating printing impression roll, a gear is attached to one end of a rotation shaft of the printing impression roll, and the gear is allowed to engage with a rack of the rack mechanism; thereby the printing impression roll is allowed to perform positive or reversed rotation in accordance with the reciprocating movement; characterized in that an operation control mechanism is arranged for controlling operation of the above-mentioned printing impression roll; the operation control mechanism comprises a preceding positive or reversed rotation mechanism which permits rotation in which the positive or reversed rotation in accordance with the reciprocating movement of the above-mentioned printing impression roll is faster than the standard positive or reversed rotation when the engagement of the above-mentioned gear with the rack of the rack mechanism is the engagement of a standard gear with a standard rack engaging therewith, and a slip driven rotation mechanism which rotates the printing impression roll to slip the forced positive or reversed rotation to simulate the rotation due to the engagement of the above-mentioned gear with the rack of the rack mechanism to some extent when the printing impression roll is applied with forced positive or reversed rotation force to rotate faster than the standard positive or reversed rotation; the above-mentioned rack mechanism is formed such that a first rack and a second rack arranged in parallel are allowed to approach or contact so as to simultaneously engage the above-mentioned gear with the first rack and the second rack; tooth grooves of the first rack and the second rack are formed to have a groove width wider than that of the standard rack; the formation is made to suitably deviate phases of the tooth grooves of the first rack and the second rack; the formation is thereby made such that an engagement state of simultaneous engagement of the gear with the first rack and the second rack is controlled to give forced positive or reversed rotation so as to slightly precede the rotation in accordance with the reciprocating movement of the printing impression roll with respect to the above-mentioned standard positive or reversed rotation.

Furthermore, the present state of the art in the printing device with respect to the control of a printing state of the strip-shaped printed article and a downstream processing state by the downstream step processing device is such that trial printing is performed several times, a skilled person observes it visually so as to judge whether the error is within an acceptable range or exceeds the range, and correction is made by manual work in accordance with the perception of the skilled person.

Additionally, a die cutting device in such a printing device is formed to have a sliding mechanism for detaching its upper chase plate in which, between an upper frame and a lower frame of the die cut of the printing device, items such as labels, seals and the like are

inserted into the upper chase plate made of thick steel attached with a punching blade at its lower face in a detachable manner via suitable rails at both sides in a manner simply capable of free insertion and detachment in forward and rearward directions, and when the punching blade is exchanged or the punching blade is inspected, the upper chase plate is slid forwardly to once remove the upper chase plate from the rails, and thereafter the upper chase plate is turned.

In addition, a printing production device for labels and the like is provided for various markets in which a strip-shaped printed article on which a pattern or letters is continuously and suitably printed by a duplicator, is suitably and continuously punched by a die cutting device at a portion containing the pattern or letters as a predetermined product in the next step, and such a printing production device for labels and the like is necessarily added and provided with a punched residue winding device after punching the product with respect to the strip-shaped printed article as having a reeling device for automatically winding the continuous punched residue generated during the operation period.

Such a punched residue winding device has a general structure in which the continuous punched residue, after suitably and continuously punching a predetermined product from the strip-shaped printed article by means of the die cutting device, is simply and automatically wound by means of the reeling device.

However, in the conventional duplicator, with respect to its ink supply mechanism, a plurality of ink rolls is interposed between the bottling roll for supplying ink and the application roller for applying ink onto the printing impression roll, and it has therefore taken a long time to allow ink to arrive at the printing impression roll from the ink tank.

In addition, a plurality of ink rolls rotate, so that ink adhered to each of the rolls has scattered. At the same time, a plurality of ink rolls are in rotating abutment, so that each of the ink rolls has been easily heated.

Furthermore, because of the presence of a plurality of ink rolls therebetween, a plurality of ink rolls should be exchanged when the color of the ink is changed, and it has taken a long time to do the exchanging work or washing work for the roll.

In addition, in the patent application in relation to the above-mentioned Japanese Patent Application No. 59-162505, although the deviation of the printing paper sheet generated during the contact of the impression face of the printing impression roll with the printing paper sheet can be adjusted, it has been impossible to adjust the deviation of the printing paper sheet generated during the reciprocating movement on the printing paper sheet after the contact of the printing impression roll with the printing paper sheet.

This deviation of the printing paper sheet occurs due to frictional resistance during reciprocating movement with the contact of the printing impression roll with the printing paper sheet, and due to the fact that the printing paper sheet is not accurately supplied and

arranged at a specified place on a base stand and the like.

As a result, for example, when a printed portion is punched by a press machine or the like after the completion of printing during the production of labels and the like, the print position deviates from a predetermined position, so that problems have occurred in which the pattern of a label or the like cannot be accurately punched during the punching process.

In addition, in order to avoid such a situation, a lock bolt which fixes the printing impression roll and its gear is loosened, and the change of the phase of the printing impression roll must be set by manual rotation; the adjustment of the contact face between the impression face of the printing impression roll and the printing paper sheet has therefore been extremely troublesome.

Furthermore printing operation should be interrupted one by one so as to perform such an adjustment, and this has consumed time in the printing operation.

On the other hand, with respect to the printing device, in relation to the control of the printing state of the strip-shaped printed article and the downstream processing state by the downstream step processing device, a long time is required for correction, even in the case of being performed by a skilled person, or the correction cannot be made accurately due to dependency on the perception of the operator, or the labor costs become high because of the requirement of a skilled person; therefore, it has been regarded as completely impossible to contemplate lowering the cost of printing, which has been a large problem in printing work.

In addition, with respect to the die cutting device, due to a combination of the facts that the punching blade is attached to the lower face of the upper chase plate and the upper chase plate is made of thick steel, the upper chase plate is extremely heavy, and it is therefore troublesome to exchange the punching blade or inspect the punching blade, and there is a fear of accidental dropping, which is extremely dangerous.

Furthermore, in the case of the structure of the abovementioned punched residue winding device, the continuous punched residue is highly likely to be cut, and the punched residue itself is a strip-shaped article after the punching of the product, so that it is cut during winding, or it is almost impossible to tightly wind, and the continuous punched residue cannot be wound in a regular manner, resulting in occurrence of various inconveniences.

SUMMARY OF THE INVENTION

Thus, the present invention has been created, having as its object a die cutting device for a printing device wherein, the exchange of the punching blade and the inspection of the punching blade can be performed by means of extremely easy operation, so as to provide an upper chase plate sliding mechanism which is extremely safe with no fear of accidental dropping.

According to the present invention there is provided a die cutting device for a printing device having an upper frame which is movable up and down; an upper chase plate which is disposed under said upper frame so as to be movable into and from underneath said upper frame along a line perpendicular to a direction of feeding a strip-shaped printed article which is made up of a release paper and a printing paper disposed on top of the release paper via an adhesive agent, said movement being guided at both side edges of said upper chase plate by a pair of rails which are provided so as to be movable up and down together with said upper frame ; a stationary lower frame below said upper chase plate ; a lower chase plate which is disposed on said lower frame, wherein the strip-shaped printed article is intermittently moved through a space between said upper frame and said lower frame ; and a punching blade for punching a printed frame of the strip-shaped printed article, said punching blade being attached to a lower surface of said upper chase plate, said punching being carried out while the feeding of the strip-shaped printed article is stopped, by moving downwards said upper frame, thereby cutting the printing paper and the adhesive agent layer. The invention is characterized in that, in combination :

a stopper is provided in a manner projecting on right and left sides of an end portion of said upper chase plate ;

a pair of guide members are provided in front of said rails, each of said guide members having a sliding receiving portion which slidably supports, by its side edge, said upper chase plate, and a sliding groove portion which extends in a direction of movement of said upper chase plate to allow for movement of said stopper ;

a stopper receiving plate is provided in a front end of said sliding groove portion to stop the movement of said stopper by abutment therewith; and

a magnet holder is provided on an upper portion of said guide member to support a rear surface of said upper chase plate when said upper chase plate is swung about said stopper, which is in abutment with said stopper receiving plate, into a posture at which the lower surface to which said punching blade is attached faces substantially upwards.

Preferably, the die cutting device further comprises a rotatable plate which is provided below said upper frame so as to be rotatable relative to said upper frame, and wherein said rails and said guide members are mounted on said rotatable plate with a distance between each of the respective pairs.

In the die cutting device in the printing device according to the present invention, when the punching blade is exchanged or the punching blade is inspected, unlike the prior art in which the upper chase plate is slid forward to once remove the upper chase plate from the rail so as to turn the upper chase plate, the upper chase

plate is instead slid forward via the guide members at both sides so as to turn the upper chase plate upward.

In addition, when the punching blade is exchanged or the punching blade is inspected, each of the stoppers at both sides of the rearward end of the upper chase plate is slid forward along the sliding groove portion of the sliding receiving plate of each of the guide members so as to stop each stopper of the upper chase plate with the stopper receiving means at the forward end of the sliding receiving plate of each of the guide members, and the upper chase plate is turned upwardly with each stopper as the center so as to hold both side portions at the upper face of the upper chase plate with the holding means at the upper face at the rearward portion of the sliding receiving plate of each of the guide members.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an illustrative front view of one example of the present invention.

Fig. 2A is a side view showing an installation example of rolls in a conventional duplicator.

Fig. 2B is a side view showing an installation example of rolls in a conventional duplicator.

Fig. 2C is a side view showing an installation example of rolls in a conventional duplicator.

Fig. 3 is a side view showing one example of the present invention.

Fig. 4 is a front view showing one example of the present invention.

Fig. 5 is a plan view with partial omission showing one example of the present invention.

Fig. 6 is an enlarged perspective view of a left guide member of the present invention.

PREFERRED EMBODIMENTS OF THE INVENTION

An example of the present invention will be explained hereinafter on the basis of the drawings.

As shown in Fig. 1, a printing device 1 according to the present invention comprises a duplicator 3 which performs intermittent printing onto a strip-shaped article subjected to printing S1 supplied from a paper supply device 2 using a printing impression roll which performs positive or reversed rotation while performing forward or backward movement in a direction perpendicular to a sending direction of the strip-shaped article subjected to printing S1, an image processing mechanism 7 which detects and corrects deviation of a printing position of a printed article and the like, a laminating mechanism 4 which laminates a transparent adhesive film onto a print face of the printed strip-shaped printed article S2, a die cutting device 5 which punches the strip-shaped printed article S2 printed by the duplicator 3 into a suitable shape, a punched residue winding device 6 which winds a punched residue A after punching by the die cutting device 5, and a product winding device 8 which winds the punched product. In the figures in this case, it is not shown that in the rearward direction of the duplicator 3,

a drying mechanism is arranged for drying ink printed by the duplicator 3.

With respect to the above-mentioned die cutting device 5, in relation to the upper chase plate sliding mechanism thereof, as shown in Fig. 3 to Fig. 6, between an upper frame 102 and a lower frame 103 of the die cutting device 5 is inserted an upper chase plate 105 made of steel having a punching blade 104 attached to its lower face in a detachable manner through a pair of right and left guide members 106 at both sides in a manner capable of free insertion and detachment in forward and rearward directions and capable of freely turning upward.

That is, the upper frame 102 and the lower frame 103 of the above-mentioned die cutting device 5 are arranged at a suitable interval in upper and lower directions through support columns 107 at four corner portions, and at a downward side of the upper frame 102 is supported an oscillating plate 109 having rails 108 with a cross-section having substantially an L shape at lower faces at both side portions respectively in a manner capable of free tilting in the right and left directions through an oscillating adjustment bolt 110 at the forward end portion, and between both rails 108 at the downward side of the oscillating plate 109 is inserted the upper chase plate 105 in a manner capable of free insertion and detachment in the forward and rearward directions.

This upper chase plate 105 is formed such that the punching blade 104 is attached in a detachable manner at the lower face of an upper chase plate main body 112 having sliding portions 111 at the lower faces of both side end portions being inclined from the vicinity of the lower faces of both side ends toward the upward direction of the lower faces of both side ends respectively, a handle portion 113 is provided with projections at the central portion in the front end widthwise direction of the upper chase plate main body 112, and a handle 114 having a substantial C shape is provided at the front face of the handle portion 113, a lock portion 115 is provided in a concave manner at the right side face at the front end portion of the upper chase plate main body 112, and stoppers 116 are provided projecting toward the side direction at portions subjected to slight cut-out at both sides of the rear end portions of the upper chase plate main body 112.

In addition, each of the above-mentioned guide members 106 has a sliding receiving portion 119 for sliding the sliding portion 111 of the above-mentioned upper chase plate 105 being inclined at the upper face at the inside portion from the vicinity of the upper face of the inside end toward the lower direction of the upper face of the inside end at the inside of the front end portion of a guide member main body 118 having a cut-out portion 117 for escape of the above-mentioned support column 107 in the vicinity of the inside face at the rear end portion, and a sliding receiving plate 121 having a sliding groove portion 120 for sliding each of the above-mentioned stoppers 116 is provided at the lower portion

of the sliding receiving portion 119, and a stopper receiving plate 122 is provided at the front end of the sliding receiving plate 121 as a stopper receiving means for stopping each of the above-mentioned stoppers 116. Furthermore, the construction is made such that respectively as a holding means for turning and holding the abovementioned upper chase plate 105, a magnet holder 124 provided with a magnetic change-over lever 123 is magnetically attached in a detachable manner at the upper face at the rear portion of the sliding receiving plate 121 through a support plate 125 at the rearward side so as to project slightly inwardly from the inside end of the sliding receiving plate 121, and at the outside face at the rear end portion of the right side guide member main body 118 is provided a lock screw 126 for abutting against the lock portion 115 of the above-mentioned upper chase plate 105 at its forward end so as to lock sliding.

Between the above-mentioned left side guide member 106 and the right side guide member 106 arranged at both sides between the upper frame ; 102 and the lower frame 103 of the die cutting device 5 is inserted the above-mentioned upper chase plate 105 in a manner capable of free insertion and detachment in the forward and rearward directions while allowing the sliding groove portion 120 of each sliding receiving plate 121 through each stopper 116 at both sides of the rear end portion of the upper chase plate main body 112 and allowing the sliding receiving portion 119 of each sliding receiving plate 121 through the sliding portion 111 of the upper chase plate main body 112, and between the left side guide member 106 and the right side guide member 106 is inserted the upper chase plate 105 in a manner capable of freely turning upward such that each stopper 116 at both sides of the rear end portion of the upper chase plate main body 112 stops at the stopper receiving plate 122 as the stopper receiving means at the front end of each sliding receiving plate 121 so as to allow both side portions at the upper face of the upper chase plate main body 112 to be held at the front face of the magnet holder 124 as the holding means at the upper face of the rear portion of each sliding receiving plate 121.

In the meantime, as the stopper receiving means for stopping each stopper 116 of the above-mentioned upper chase plate 105, explanation and illustration in the figures are given such that the stopper receiving plate 122 is provided as another body at the front end of the sliding receiving plate 121; however, there is no limitation thereto, and it is also possible that a stopper receiving portion is integrally provided at the front end of the sliding receiving plate 121. In addition, as the holding means for turning and holding the above-mentioned upper chase plate 105, explanation and illustration in the figures are given such that the magnet holder 124 provided with the magnetic change-over lever 123 is magnetically attached to the upper face at the rear portion of the sliding receiving plate 121 in a detachable manner through the support plate 125 at the rearward

side so as to project slightly toward the inside with respect to the inside end of the sliding receiving plate 121; however, there is no limitation thereto, and it is also possible that a holding plate provided with a holding tab capable of free tilting movement for holding with tilting after the turning of the upper chase plate 105 be provided to project slightly inwardly with respect to the inside end of the sliding receiving plate 121.

In addition, explanation and illustration in the figures are given such that the guide member 106 is fixed to the main body of the die cutting device 5; however, there is no limitation thereto, and it is also possible that the guide member 106 itself is provided with a groove portion for sliding and a sliding stopper receiving means, which is combined with the upper chase plate 105 so as to make it possible to perform sliding in two stages. In this case, in a state in which the upper chase plate 105 and the guide member 106 are installed on the main body of the die cutting device 5, the guide member 106 is located on the inside further inwardly than shown in the figure, so that the projecting portion is reduced, which provides safety advantages during the operation.

A lateral estimation adjusting bolt 127 having its forward end engaged with the front face of the above-mentioned oscillating plate 109 is provided in a manner capable of free movement in the front and rear directions at the upper face of the front portion of the handle portion 113 of the above-mentioned upper chase plate 105 through a lateral estimation adapter 128. In addition, a lower chase plate 129 is provided at the upper face of the lower frame 103 opposing the above-mentioned upper chase plate 105 with each other.

Next, with respect to the printing device 1, the construction is such that the strip-shaped article subjected to printing S1 which is an adhesive paper or the like having an adhesive layer at the back face of a substrate such as paper, a film or the like being constituted by protecting its lower face with peeling paper having a peeling treatment face, is sent from the paper supply device 2, the label printing of a pattern or letters is performed by the intermittent duplicator 3 having the above-mentioned reciprocating printing impression to form the strip-shaped printed article S2, and then laminating processing is optionally applied to the surface of the printed strip-shaped printed article S2 by means of the laminating device 4, and then labels as the product are continuously punched by means of the die cutting device 5.

Downstream of the die cutting device 5 it is possible to add a punched residue winding device 6 having a reeling device for reeling the continuous punched residue A after punching labels from the strip-shaped printed article S2. The product after the removal of the punched residue A is wound by the product winding device 8, or individually cut just before this device 8.

Of course, the present invention is not limited to the above-mentioned example.

The present invention constituted as described above lies primarily in the die cutting device 5 for punching the strip-shaped printed article S2 printed by a duplicator 3 into a suitable shape.

As described above, the upper chase plate sliding mechanism of the die cutting device 5 of the present invention is formed such that the upper chase plate 105 having its lower face detachably attached with the punching blade 104 is inserted between the upper frame 102 and the lower frame 103 of the die cutting device 5 of the duplicator for labels, seals and the like via the guide members 106 at both sides in a manner capable of free insertion and drawing in the forward and rearward directions and capable of free turning upwardly, so that when the punching blade 104 is exchanged or the punching blade 104 is inspected, unlike in the prior art in which the upper chase plate is slid forwardly to once remove the upper chase plate from the rail and thereafter the upper chase plate is turned, but by means of the extremely easy operation in which the upper chase plate 105 is only allowed to slide forwardly through the guide members 106 at both sides to turn the upper chase plate 105 upwardly, the exchange of the punching blade 104 and the inspection of the punching blade 104 can be performed safely, and there is no fear of accidental dropping as in the prior art.

In addition, with respect to each of the guide members 106, the sliding receiving plate 121 having the sliding groove portion 120 at the inside face for sliding each of stoppers 116 provided projecting laterally at both sides of the rearward end of the upper chase plate 105 respectively is provided at the inside of the forward end portion of the guide member main body 118, the stopper receiving means for stopping each of the above-mentioned stoppers 116 is provided at the forward end of the sliding receiving plate 121, and the holding means for holding the upper chase plate 105 to turn is provided at the upper face at the rearward portion of the sliding receiving plate 121 respectively, and thereby when the punching blade 104 is exchanged or when the punching blade 104 is inspected, each of the stoppers 116 at both sides of the rear end portion of the upper chase plate 105 is allowed to slide forward along the sliding groove portion 120 of the sliding receiving plate 121 of each of the guide members 106 so as to stop each of the stoppers 116 of the upper chase plate 105 at the stopper receiving means at the front end of the sliding receiving plate 121 of each of the guide members 106, and the upper chase plate 105 is turned upwardly using each of the stoppers 116 as the center, so as to make it possible to hold both sides at the upper face of the upper chase plate 105 by the holding means at the upper face of the rear portion of the sliding receiving plate 121 of each of the guide members 106, so that the exchange of the punching blade 104 and the inspection of the punching blade 104 can be certainly carried out by very easy operation, which is very desirable from the standpoint of safety.

Thus, according to this invention, there are provided various excellent effects such that with the die cutting device, it is possible to perform the exchange of the punching blade and the inspection of the punching blade by an extremely easy operation, so as to provide an extremely safe upper chase plate sliding mechanism with no fear of accidental dropping.

Claims

1. A die cutting device for a printing device having an upper frame (102) which is movable up and down; an upper chase plate (105) which is disposed under said upper frame (102) so as to be movable into and from underneath said upper frame (102) along a line perpendicular to a direction of feeding a strip-shaped printed article (S2) which is made up of a release paper and a printing paper disposed on top of the release paper via an adhesive agent, said movement being guided at both side edges of said upper chase plate (105) by a pair of rails (108, 108) which are provided so as to be movable up and down together with said upper frame (102); a stationary lower frame (103) below said upper chase plate (105); a lower chase plate (129) which is disposed on said lower frame (103), wherein the strip-shaped printed article (S2) is intermittently moved through a space between said upper frame (102) and said lower frame (103); and a punching blade (104) for punching a printed frame of the strip-shaped printed article (S2), said punching blade (104) being attached to a lower surface of said upper chase plate (105), said punching being carried out while the feeding of the strip-shaped printed article (S2) is stopped, by moving downwards said upper frame (102), thereby cutting the printing paper and the adhesive agent layer; **characterized in that, in combination :**

a stopper (116) is provided in a manner projecting on right and left sides of an end portion of said upper chase plate (105);

a pair of guide members (106) are provided in front of said rails (108, 108), each of said guide members (106) having a sliding receiving portion (119) which slidably supports, by its side edge, said upper chase plate (105), and a sliding groove portion (120) which extends in a direction of movement of said upper chase plate (105) to allow for movement of said stopper (116);

a stopper receiving plate (122) is provided in a front end of said sliding groove portion (120) to stop the movement of said stopper (116) by abutment therewith; and

a magnet holder (124) is provided on an upper portion of said guide member (106) to support a rear surface of said upper chase plate (105) when said upper chase plate (105) is swung

about said stopper (116), which is in abutment with said stopper receiving plate (122), into a posture at which the lower surface to which said punching blade (104) is attached faces substantially upwards.

2. A die-cutting device according to claim 1, further comprising a rotatable plate (109) which is provided below said upper frame (102) so as to be rotatable relative to said upper frame (102), and wherein said rails (108, 108) and said guide members (106) are mounted on said rotatable plate (109) with a distance between each of the respective pairs.

Fig. 1

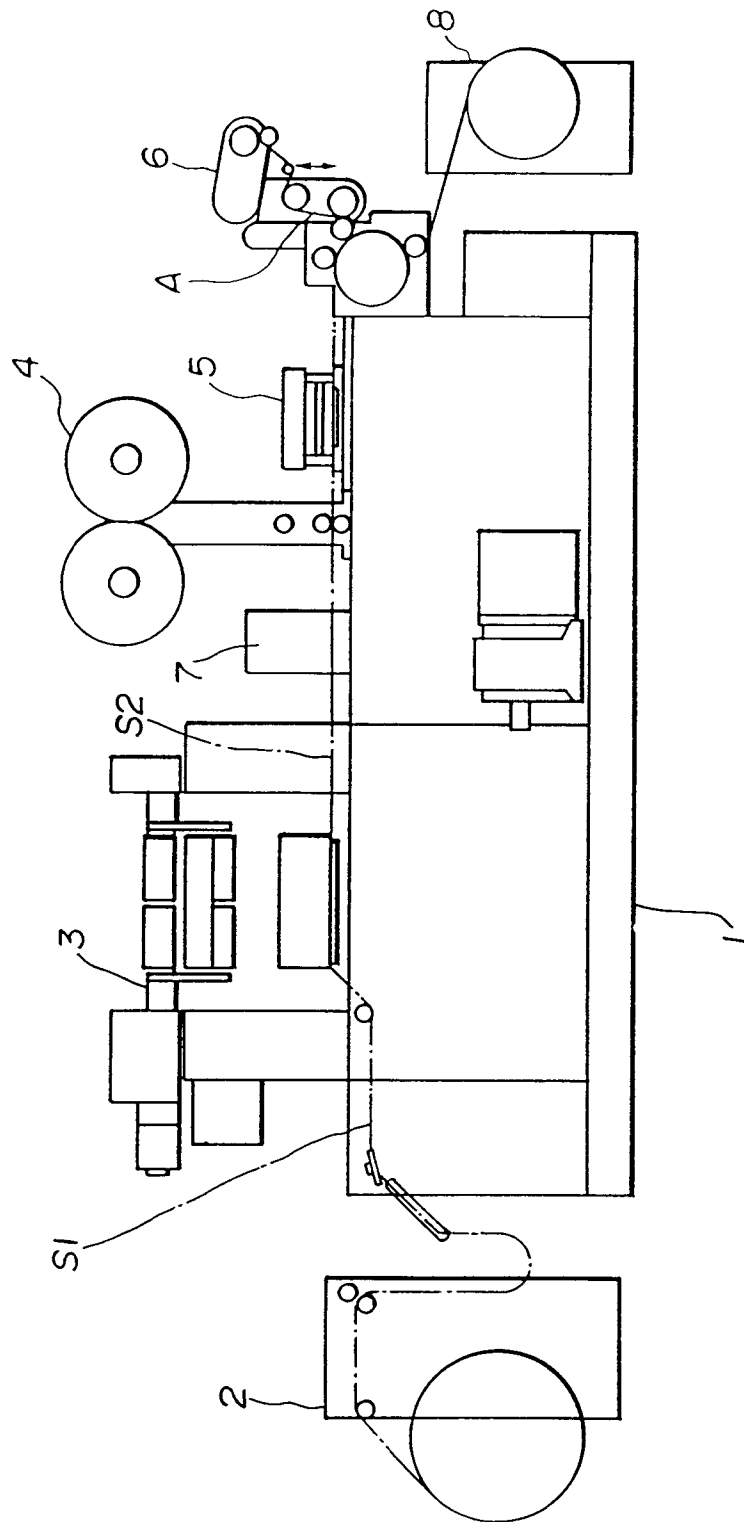


Fig. 2 (C)

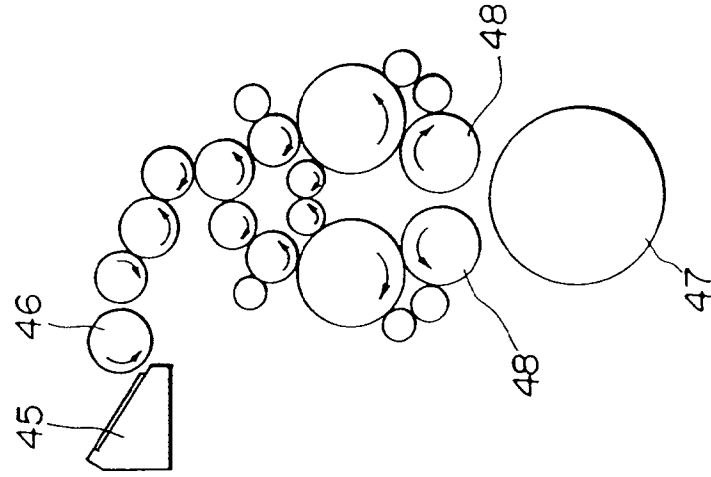


Fig. 2 (B)

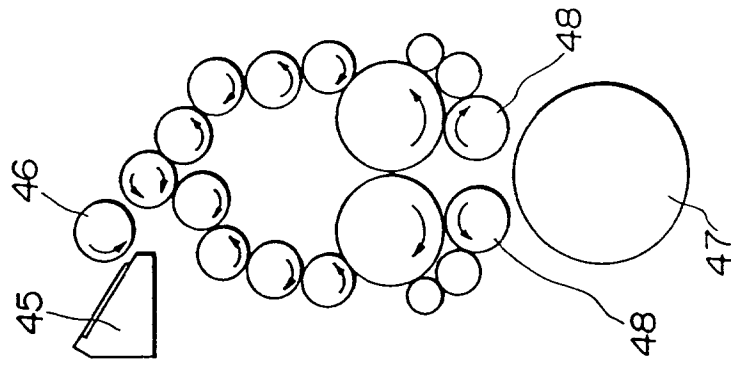


Fig. 2 (A)

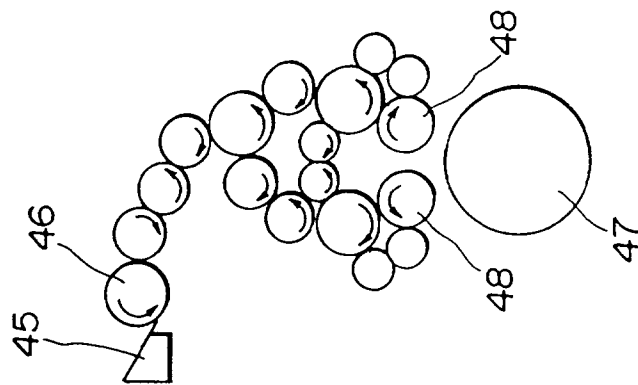


Fig. 3

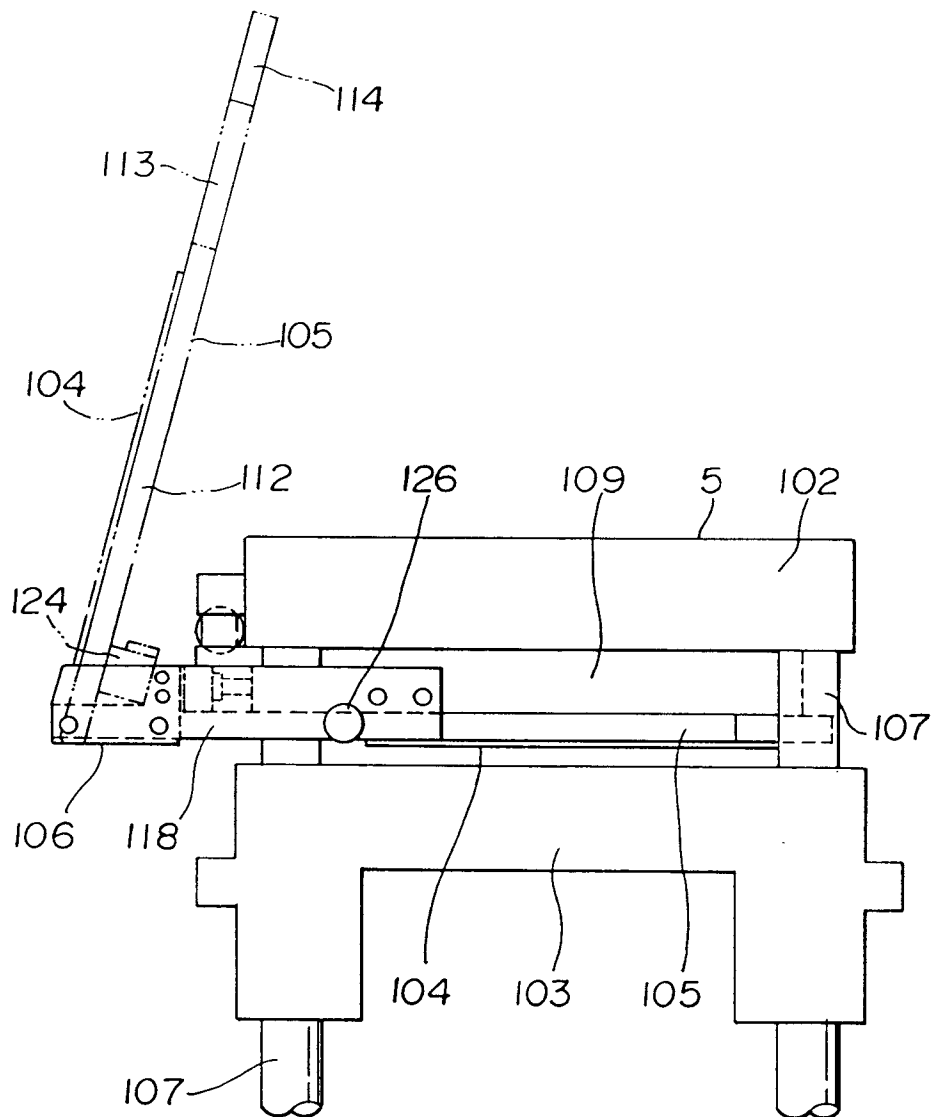


Fig. 4

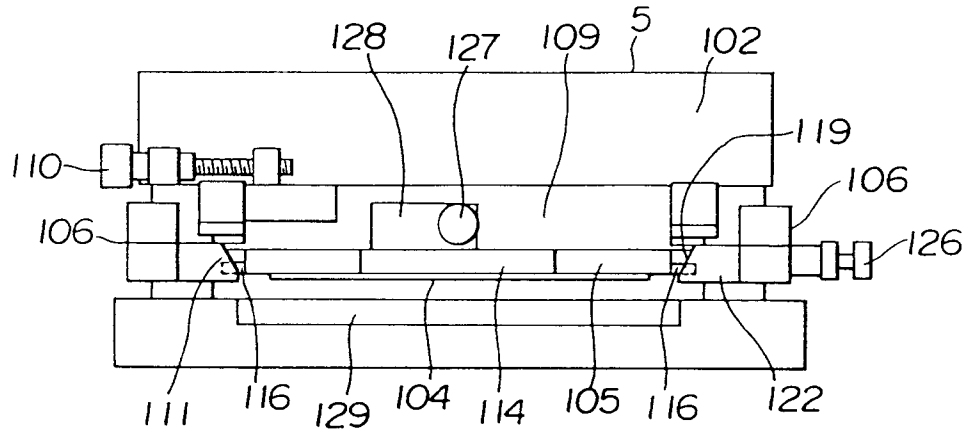


Fig. 5

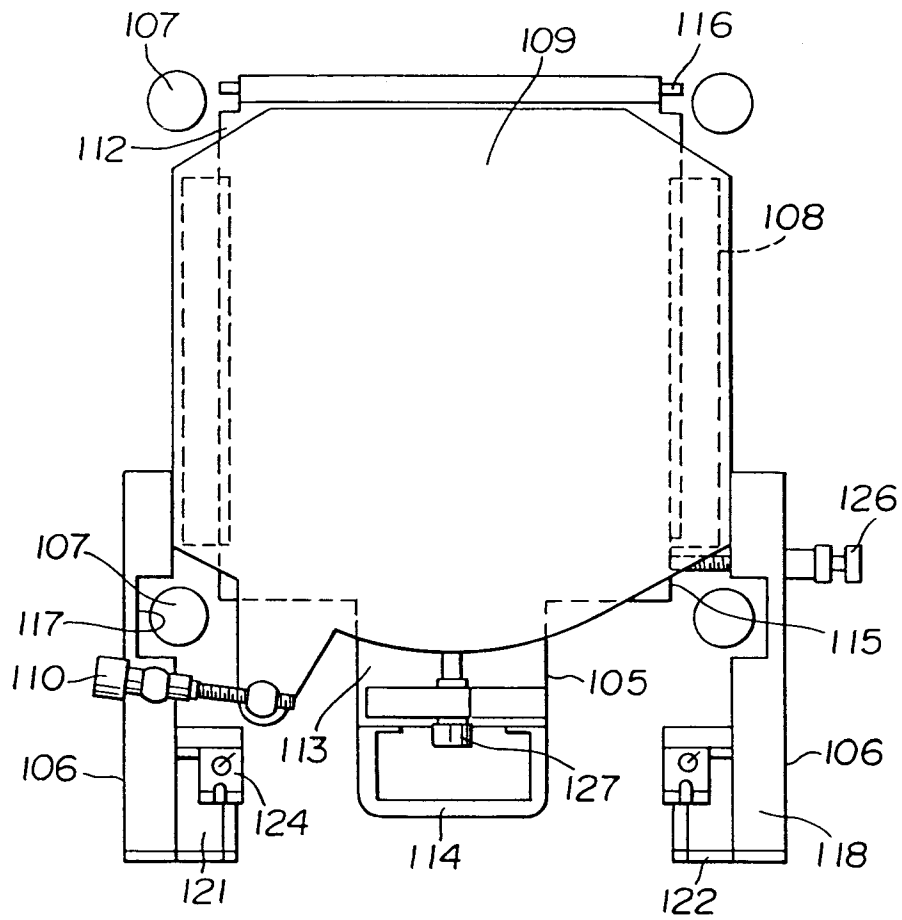


Fig. 6

