July 8, 1947. C. J. HUEBER 2,423,705

MEANS FOR RETAINING AN INDEX CARD AND PRINTING PLATE ON A CARRIER

Filed Aug. 24, 1942 3 Sheets-Sheet 1

FIG. 1.

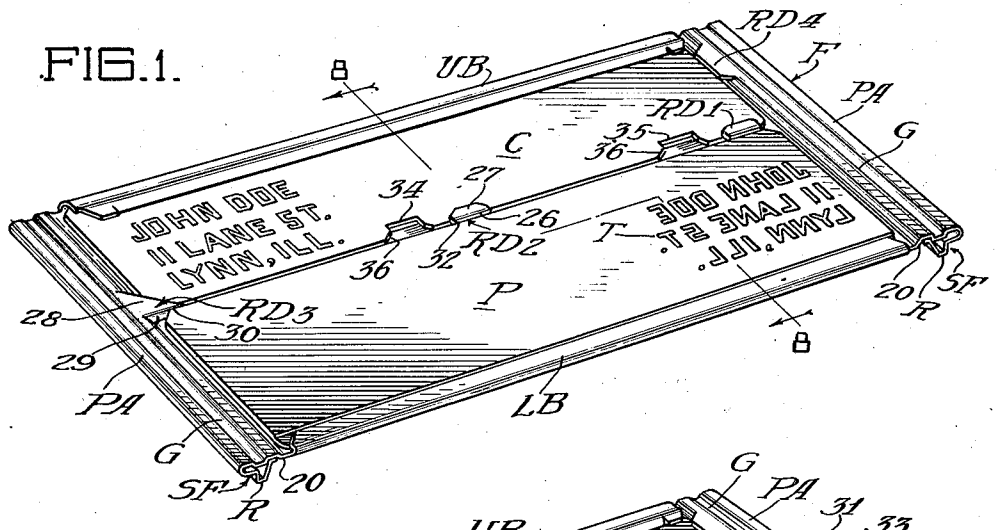


FIG. 2.

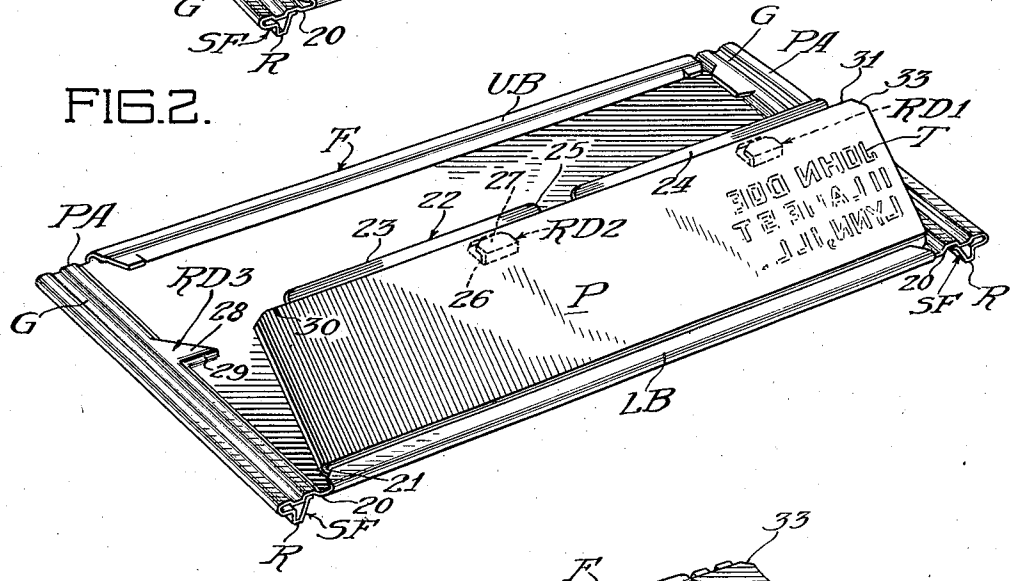
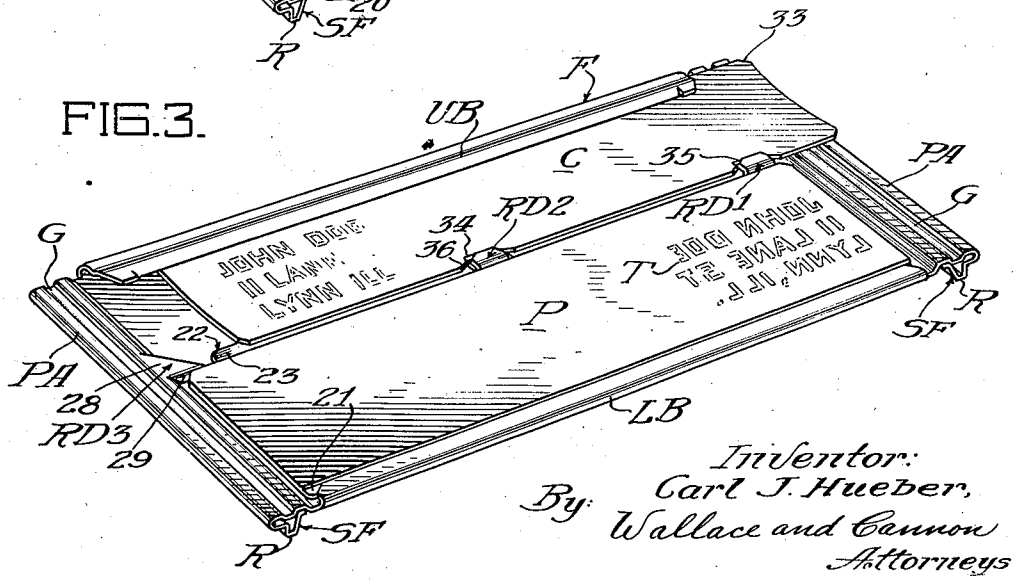


FIG. 3.



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FIG. 4.

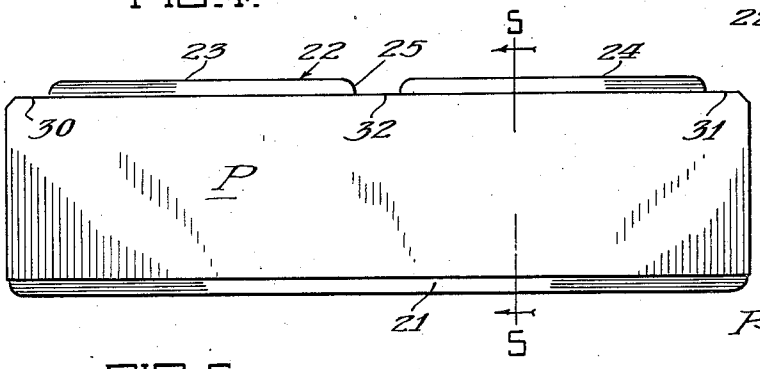


FIG. 5.

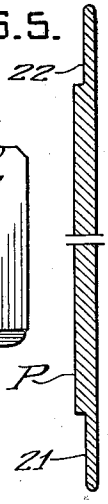


FIG. 8.

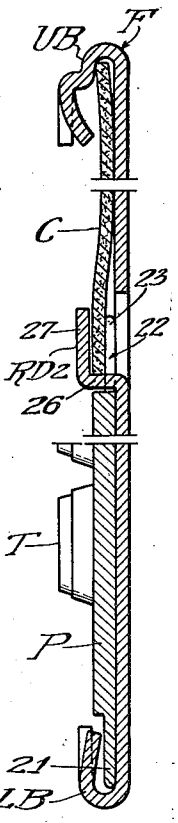


FIG. 6.

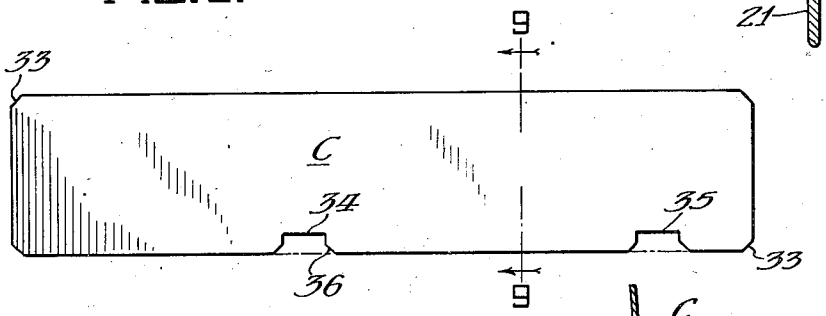


FIG. 9.

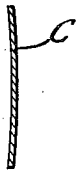
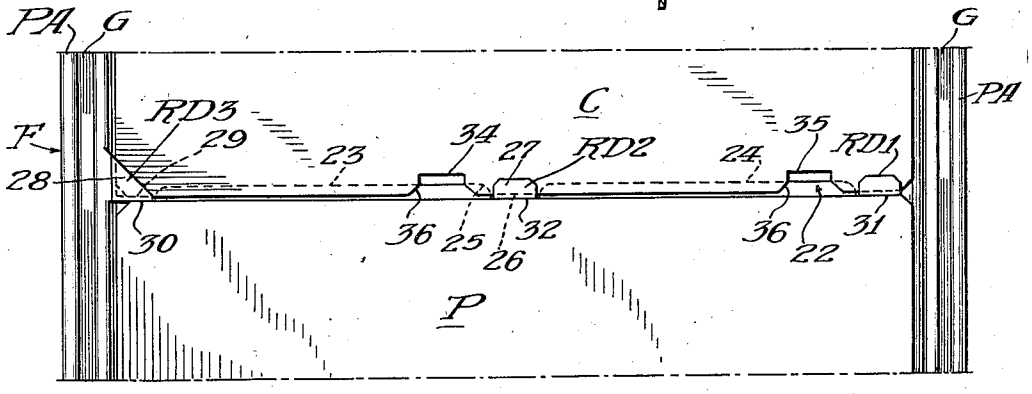


FIG. 7.



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July 8, 1947. C. J. HUEBER 2,423,705

MEANS FOR RETAINING AN INDEX CARD AND PRINTING PLATE ON A CARRIER

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FIG.10.

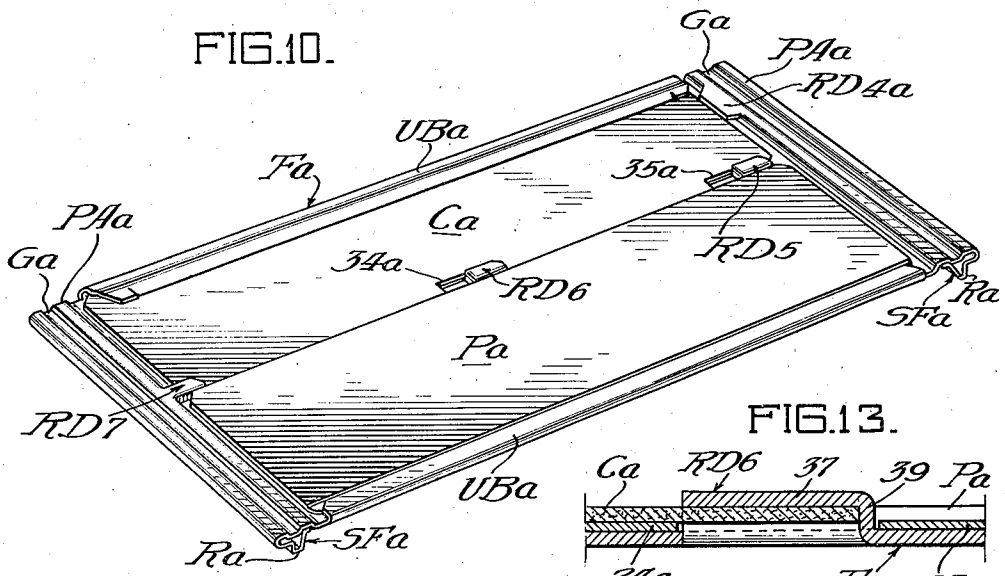


FIG.13.

FIG.11.

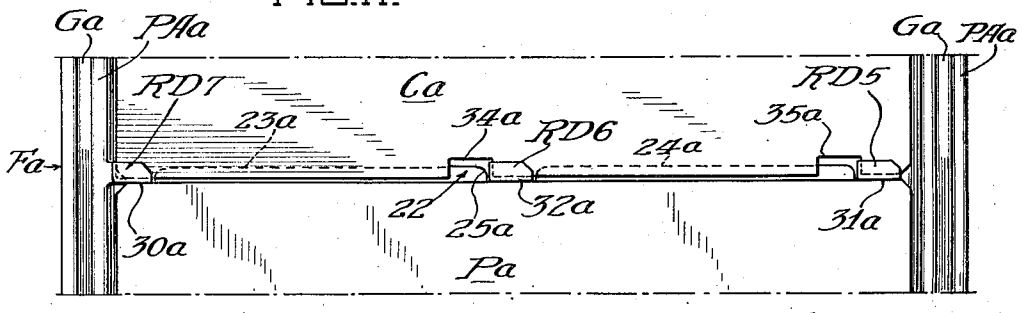


FIG.12.

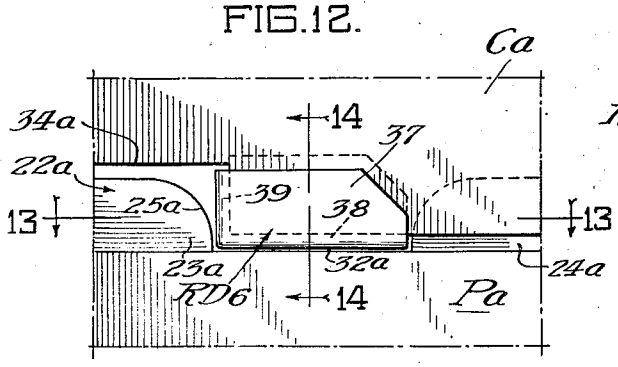
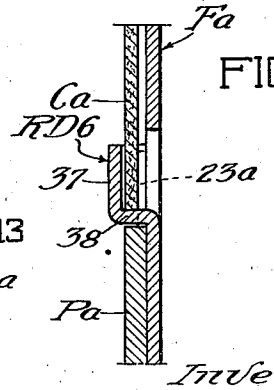


FIG.14.



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Patented July 8, 1947 2,423,705

UNITED STATES PATENT OFFICE

2,423,705

MEANS FOR RETAINING AN INDEX CARD AND PRINTING PLATE ON A CARRIER

Carl J. Hueber, Euclid, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware

Application August 24, 1942, Serial No. 455,901

12 Claims. (Cl. 101—369)

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This invention relates to printing devices that embody carriers for printing plates and desirably index cards, such cards bearing impressions from at least selected of the type characters provided on the printing plates, and this invention primarily has to do with such carriers and the retention of the printing plates and the index cards thereon.

Printing devices of the character to which this invention pertains, and of which each embodies a carrier on which one or more printing plates may be releasably retained, have customarily been so arranged that each such carrier embodied one or more depressible portions located on the carrier in position to cooperate with an adjacent part of at least one printing plate mounted on the carrier to thereby be effective to prevent movement of such plate or plates relative to the carrier in at least one direction. Each such portion on a carrier of the aforesaid character has been so arranged that it could be depressed out of cooperating relation with the adjacent part of a printing plate to thereby enable such plate to be moved relative to the carrier to be removed therefrom, such a portion also usually having been depressible to enable insertion of a printing plate or plates into the carrier and into position to cooperate with such depressible portion to thereby be retained on the carrier as aforesaid.

Moreover, it has been customary to insert substantially rectangular printing plates onto the substantially rectangular carriers therefor in a longitudinal direction and usually the plates have been inserted from one or the other of the shorter sides of the carrier in such a way that it has been necessary to slide the entire length of the plate across a marginal portion of the carrier in the course of inserting the plate onto the carrier or, also, to effect removal of the plate from the carrier.

Thus among the important objects of my invention are to enable a printing plate to be inserted into a carrier adapted to receive the same by merely inserting a portion of the plate into a retaining means on the carrier adapted to cooperate with a marginal portion of the plate and thereafter bringing adjacent faces of the plate and carrier into engagement one with the other, and a related object is to enable retention of a printing plate so installed on a carrier and removal of such a plate from the carrier without resorting to depressible portions of the nature to which resort has heretofore been had in printing devices of the character to which this invention pertains.

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While printing devices of the character to which this invention pertains, as these have been arranged heretofore, have usually embodied at least one index card, the arrangements were usually such that the plates and cards were retained on the carriers independently of each other, and one common arrangement for this purpose has been to utilize oppositely projecting retaining devices, usually in the form of lips, disposed in the carrier intermediate an index card and an adjacent printing plate, the lips projecting in one direction extending over a marginal portion of the index card and the lips projecting in the opposite direction extending over a marginal portion of the adjacent printing plate. However, it is among other of the important objects of this invention to extend retaining devices formed on the carrier over but one of the juxtaposed marginal portions of an index card and printing plate and to arrange the other of the marginal portions to clear at least one of such retaining devices when laid in face to face engagement with the carrier so as to thereby enable the marginal portion over which the retaining devices are so extended to overlie the other of the marginal portions and thereby be effective to hold the underlying marginal portion against the adjacent face of the carrier, and an object ancillary to this is to so relate a retaining device and marginal portions, as aforesaid, adapted to clear the same as to thereby prevent objectionable relative movement between such retaining device and therefore the carrier, and such marginal portion in at least a selected direction.

Further important objects of this invention are to enable expeditious insertion of index cards of the aforesaid character onto printing device carriers of the character to which this invention pertains; to enable the use of accurately outlined index cards such as, for example, die-cut index cards; and to enable such cards to be inserted onto carriers without objectionably flexing the same during insertion thereof onto the carriers.

With respect to the just set forth objects of my invention, index cards have heretofore in many instances been cut from a web withdrawn from a roll and which is of a width equal to the desired length of the cards. In such circumstances, particularly where the web has been coiled into the roll for a relatively protracted period, the cards so cut therefrom are often of concavo-convex configuration across the shorter dimension thereof and in instances where an impression is made on the convex face of such a card and it is inserted into the carrier in a con-

ventional manner, the shorter edges of the card, particularly in the medial portions thereof, may sometimes be so spaced from the adjacent face of the carrier that another printing device or the like passed over the face of the printing device including such a card may catch on such end portions of the card and damage the same.

It will therefore be seen that in those instances where index cards are cut from a web withdrawn from a roll that it will be advantageous to insure that impressions will be made on the concave face of the cards. This may be realized by imparting a distinctive outline to the cards so as to thereby indicate, for example, on which of the faces of the cards an impression is to be made and thereby insure that the impressions will be made on the concave faces of the cards. When the impressions are made on the concave faces of cards, as aforesaid, and these are installed in a carrier adapted to receive the same, the convex faces of the cards will be disposed toward the adjacent face of the carrier and the marginal portions along the longer edges of the cards will tend to be spaced from the adjacent face of the carrier. It is, however, these marginal portions of the cards that underlie retaining devices for the cards provided on the carriers and therefore such retaining devices may be effective to properly hold the cards against the adjacent face of the carrier so as to thereby avoid having edges of the cards so exposed that parts may catch thereon as, for example, when one printing device is moved over the face of another, and this also places the cards under tension and promotes effective retention thereof on the carriers therefor.

Therefore, to enable the foregoing utilization of index cards to be realized is yet another important object of this invention and objects ancillary to this are to impart a distinctive outline to an index card which will be effective to indicate the face of the card on which an impression should be made; to sever cards from a sheet of material by die-cutting or like operation so as to thereby facilitate imparting a distinctive outline or configuration thereto; and to cut index cards from a sheet of material in such manner that the grain of the material, as it appears in the cards, will be extended in the direction affording reenforcement for the cards in the direction in which such reenforcement is most needed.

Other and more specific objects of this invention are to afford a retention on a printing device carrier for one marginal portion of a printing plate and to arrange retaining devices in spaced relation with such retention so as to thereby define an area on a printing device carrier in which a printing plate of predetermined size may be neatly and properly received; to so relate retaining devices of the aforesaid character and the marginal portion of the plate adapted to be juxtaposed thereto, when the plate is inserted onto the carrier, as to enable interfitting of the plate and retaining devices so as to thereby prevent objectionable relative movement between the plate and the retaining devices and carrier in at least a selected direction; to form retaining devices of the aforesaid character in such a manner as to enable extension thereof over a marginal portion of an index card; and to extend a portion of a printing plate related to retaining devices of the aforesaid character beneath the marginal portion of an index card inserted into the retaining devices whereby such marginal portion of the index card in cooperation with the relation between the printing plate and the aforesaid retaining devices and the retention afforded for the marginal portion of the plate opposite that related as aforesaid to the retaining devices will be effective to prevent undesired displacement of a printing plate from the carrier into which it is inserted.

Yet further objects are to provide a retention on a printing device carrier adapted for cooperation with a marginal portion of an index card and to arrange retaining devices, adapted for cooperation with the opposite marginal portion of the card, in spaced relation with such retention and in spaced apart relation one with the other so as to thereby enable correspondingly spaced notches in said opposite marginal portion of the card to be passed over the retaining devices whereby when the card is moved relative to the retaining devices, to thereby dispose the notches out of alignment with the retaining devices, the card is effectively secured against undesired displacement thereof from the carrier; to so form at least selected of the retaining devices that at least a part of such devices will be effective to limit movement of the index card relative to such devices in at least one direction; and to so form at least selected of such retaining devices as to facilitate removal of an index card from a printing device carrier of the aforesaid character.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the accompanying drawings which, by way of illustration, show preferred embodiments and the principles thereof and what I now consider to be the best mode in which I have contemplated applying these principles. Other embodiments of the invention embodying the same or equivalent principles may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

In the drawings,

Fig. 1 is a perspective view of a printing device embodying my invention;

Figs. 2 and 3 are perspective views illustrating the manner in which the printing plate and index card are installed on the printing device carrier illustrated in Fig. 1;

Fig. 4 is an elevational view of the printing plate shown in Fig. 1;

Fig. 5 is a transverse sectional view of the plate taken substantially on the line 5—5 on Fig. 4 and which is drawn to an enlarged scale;

Fig. 6 is an elevational view of the index card shown in Fig. 1;

Fig. 7 is an elevational view of the intermediate part of the printing device shown in Fig. 1;

Fig. 8 is a transverse sectional view taken substantially on the line 8—8 on Fig. 1;

Fig. 9 is a transverse sectional view of the index card and taken substantially on the line 9—9 on Fig. 6;

Fig. 10 is a perspective view of a printing device embodying a modified form of my invention;

Fig. 11 is an elevational view of the intermediate portion of the printing device shown in Fig. 10;

Fig. 12 is a detail view drawn to an enlarged scale and showing one of the retaining devices illustrated in Fig. 10 and in relation thereof to the plate and index card shown in Fig. 10; and

Figs. 13 and 14 are respectively sectional views taken substantially and respectively on the lines 13—13 and 14—14 on Fig. 12, these views being drawn to the same scale as Fig. 12.

The printing device illustrated in the accompanying drawings embodies a carrier or frame F for a printing plate P and an index card C. The frame F is generally of the character shown and described in my copending application Serial No. 450,320, filed July 9, 1942, and is formed from a substantially rectangular sheet metal blank in, for example, the manner disclosed in Berthelsen Patent No. 2,070,573, patented February 16, 1937. It will be understood, however, that the frame so illustrated may be produced in other ways without departing from the ambit of the present invention.

The shorter marginal edges of the frame F are folded to provide spacing flanges SF that are located on the rear face of the frame or carrier F and which include rails R that extend in parallel relation one with the other and which are disposed in spaced apart relation with the rear face of the frame. The marginal portions of the frame on the face thereof and in alignment with the spacing flanges SF provide panels PA in which grooves G are formed that are complementary to the rails as R so that when the rails as R on one printing device carrier are disposed in the grooves G of an underlying carrier, undesired lateral separation between such printing device carriers is prevented. Such interfitting of rails as R in grooves as G facilitates stacking of the printing devices one upon the other and the handling of such stacked printing devices particularly when such devices are to be introduced into a machine such as that shown and described in my Patent No. 2,070,549, patented February 9, 1937, which machine is illustrative of machines in which the printing devices of the present invention may be advantageously employed.

The portion of the frame F intermediate the panels PA is depressed beneath the common plane in which the exposed faces of such panels are disposed, such intermediate portion of the frame being connected to the adjacent marginal portions of the panels PA by inclined parts 20. The free marginal portion of the depressed portion along one edge of the aforesaid depressed portion of the frame F is folded onto the face thereof to provide the upper bead UB that is adapted to overlie one marginal portion of the index card C inserted onto the frame F. A bead LB is formed along the opposite edge of the frame F by folding the marginal portion of the frame aligned with the bead UB over onto the face of the frame so as to thereby provide a channel in which one marginal portion of a plate as P inserted onto the frame is to be disposed.

The printing plate P shown in the accompanying drawing is generally of the character shown and described in the copending application of Carl J. Hueber and William J. Hampton, Serial No. 450,318, filed July 9, 1942, but if desired this printing plate may be of the character shown and described in the copending application of Wilmer H. Nau, Serial No. 454,679, filed August 13, 1942. A printing plate of the aforesaid character is composed of a body of sheet material such as sheet steel or zinc, for example, which is capable of being embossed in standard embossing machines known in the art. Such material must not have a thickness materially in excess of .030 inch. Such a plate has flanges as 21 and 22 formed along opposite marginal portions thereof as, for example, by a rolling, coining or extruding operation and in the present instance the flange 21 is continuous and extends substantially from end to end and along one of the longer marginal edges of the substantially rectangular plate P. The flange 22 includes two sections 23 and 24 which respectively terminate in spaced relation with the opposite shorter edges of the plate P and the adjacent ends of the sections 23 and 24 are spaced apart to define a notch 25.

As best shown in Fig. 5, corresponding faces of the flanges 21 and 22 are spaced beneath one of the opposite faces of the plate P, this being, in the present instance, the face of the printing plate on which type characters as T embossed thereon are adapted to appear in relief. Such disposition of corresponding faces of the flanges as 21 and 22 beneath a face of the plate enables retaining devices, adapted for cooperation with the marginal portions of the plate along which the flanges are formed, to be so arranged as not to project objectionably above the face of the plate beneath which such corresponding faces of the flanges are disposed so as to thereby enable impressions to be made from the relief faces of type characters as T embossed on the plate as P without the likelihood of impressions also being made from the retaining devices adapted for cooperation with the aforesaid marginal portions of the plate. Thus in the present instance, as can be seen by reference to Fig. 8, the bead LB projects but slightly above the exposed face of the plate as P and this, as stated, enables impressions to be made from type characters on the plate as P without the likelihood that impressions will be made from the exposed face of the bead LB.

By referring to Fig. 2 it will be seen that when a plate as P is to be installed on a frame or carrier as F, the flange as 21 thereon is at least partially inserted into the channel afforded by the lower bead LB, and when the flange is so inserted into this channel the shorter edges of the plate as P are respectively substantially aligned with the inclined parts 20 so that thereafter the plate as P may be laid onto the adjacent face of the frame or carrier F. The notch 25 and the termination of the flanged sections 23 and 24 in spaced relation with the shorter edges of the plate P enable the flange 22 to clear the retaining devices RD1, RD2 and RD3 provided on the carrier F and arranged for cooperation with the marginal edge of the index card C opposite that adapted to be disposed beneath the bead UB as, for example, in the manner shown in Fig. 8.

The retaining devices RD1 and RD2 are similarly formed and, as best shown in Fig. 8, these devices are afforded by severing a portion of the body of the frame or carrier F in such a manner that the portion so severed may be formed to afford an upstanding part 26, which projects in substantially right angular relation with the adjacent face of the frame or carrier F, and a lip 27 that extends from the upper end of the upstanding part 26 in spaced apart but in substantially parallel relation with the adjacent face of the frame or carrier. The retaining device RD3 includes a gusset plate 28 that extends inwardly from the panel PA at the left-hand end of the frame or carrier F, as it is viewed in Fig. 1, and this gusset plate terminates in an upstanding part 29 that extends in substantially right angular relation with the adjacent face of the frame or carrier F and which merges thereinto. The upstanding parts as 26 of the retain-

ing devices RD1 and RD2 and the upstanding part of the retaining device RD3 are aligned one with the other across the frame or carrier F and they are so spaced from the bead LB that the marginal portions 30 and 31 of the plate P, respectively extended intermediate the outer ends of the flange sections 23 and 24 and the respective shorter ends of the plate P, and the marginal portion 32, at the bottom of the notch 25, will respectively lie in juxtaposition to the upstanding parts 29 and 26 as aforesaid when the plate P is properly installed on the frame or carrier F with the flange 21 thereon disposed beneath the lip of the bead LB. When the plate P is so installed on the frame F, the retaining device RD2 is embraced in the notch 25 and the outer free ends of the flange sections 23 and 24 respectively cooperate with the adjacent parts of the retaining devices RD3 and RD1 and such relation among the retaining devices and the adjacent portions of the plate P is effective to prevent objectionable longitudinal and transverse movement of the plate on the carrier and relative to the bead LB.

Moreover, when a plate as P is installed on a frame as F in the manner just described, the bead LB overlies the flange as 21 on the plate as P and this is effective to prevent face-to-face separation of the plate and the frame at the lower edge of the plate as the same is viewed in Fig. 1. However, in order to insure against face-to-face separation between the plate and frame along the upper edge of the plate, the marginal portion of the index card as C opposite that adapted to be disposed beneath the bead UB is caused to overlie the flange sections 23 and 24 on the plate as P and, since this marginal portion of the card as C is disposed beneath the lips as 27 of the retaining devices as RD2 and RD1, as shown in Fig. 8, and the plate 28 of the retaining device RD3, both the plate and the card are effectively held against face-to-face separation, primarily because, as shown in Fig. 8, the flange sections as 23 underlie this marginal portion of the card.

The index card C, Figs. 1, 3, 6 and 9, is of the character that may be used to cooperate with flange sections as 23 and 24 in order to effectively retain the upper edge of a printing plate as P, Fig. 4, against face-to-face separation with respect to a frame on which it is mounted. The card C is of the character that is adapted to be cut from a sheet of material which advantageously may be in the form of a web withdrawn from a roll and where, as in the instance of the card C, Fig. 6, the corners are to be beveled, as indicated at 33, and notches as 34 and 35 are to be provided in the card as C, the card will be cut from such a web or strip or other suitable material by a die operation. In such instances where a card as C is cut from a web, the web will desirably be of slightly greater width than the desired length of the card, and such web will be advanced past the cutting die in such a way that a small section of the web will remain intermediate two adjacent die-cutting operations, for so to do insures that uniform straight edges will be afforded on the card as C. Furthermore, in many instances where notches as 34 and 35 are to be cut along one marginal edge of a card as C, it will be advantageous to bevel the free edges of such notches, as indicated at 36, for a reason that will be explained presently.

In instances where a printing device frame as F includes a combined stop and retaining device such as RD3 along the left-hand edge of the frame as the same is viewed in Fig. 1, an index card as C is to be inserted into the frame by being passed over the panel as PA along the right-hand side of the frame as the same is viewed in Fig. 1. Heretofore, as in the case of printing plates, it has been customary to insert index cards from one side of a frame and to slide the entire length of the index card across the marginal edge of a frame as a panel PA. However, where notches as 34 and 35 are provided in an index card as C, it is not necessary to slide the entire length of an index card across the marginal portion as the panel PA at the right-hand side as viewed in Fig. 1 for, as is shown in Fig. 3 one marginal portion of an index card as C may be inserted into the bead UB and in such longitudinal relation to the retaining devices as RD2 and RD1 as to respectively align the notches 34 and 35 with these respective retaining devices. It will therefore be understood that when notches 34 and 35 are provided in an index card as C, such notches are spaced one from the other in an amount corresponding to the spacing between retaining devices as RD2 and RD1 with which they are to cooperate as, for example, in the manner in which the notches 34 and 35 on the index card C cooperate with the retaining devices RD2 and RD1, respectively, as shown in Fig. 3. Where notches as 34 and 35 are to be so associated with retaining devices as RD2 and RD1, it is advantageous that the corners of such notches be beveled, as indicated at 36, for this facilitates properly relating the notches to the retaining devices and avoids damage to the cards.

However, once a marginal portion on a card as C has been inserted into a bead as UB and notches 34 and 35 have been associated with retaining devices as RD2 and RD1 in the manner shown in Fig. 3, the card as C may be readily disposed in its final position on the frame, shown in Fig. 1, merely by sliding the card toward the left as viewed in Figs. 1 and 3 until the leading edge thereof passes beneath a combined stop and retaining device as RD3. It will be understood that when the lower corner at the leading edge of a card as C passes beneath a retaining device as RD3, the plate as 28 of such a device will be effective to prevent the card from riding up an adjacent inclined part as 20 and that therefore the card will be effectively stopped in its proper position on the frame.

In order to insure against a card as C riding up the inclined part 20 adjacent to the right-hand end of the frame as it is viewed in Fig. 1, once the card is in proper position on the carrier, a retaining device as RD4 may be provided in the form of a lip struck from an inclined part as 20 and the adjacent part of the frame as F to extend in substantially parallel relation with and from the inner edge of a panel as PA. Desirably, such a lip or retaining device as RD4 will be slightly inclined upwardly toward the free edge thereof so as to insure that once an index card as C has been engaged with a combined stop and retaining device as RD3, the trailing edge of the card may be forced beyond the free edge of a retaining device as RD4 to thereafter be freed and then be passed beneath this device so as to thereby insure that the card as C will be securely held on the frame as F.

It will be understood that resort need not be had to a die-cut index card as C, Fig. 6, for, as indicated by the broken lines extended across

the open ends of the notches **34** and **35** in Fig. 6, a card of substantially rectangular outline and having sharp corners may be utilized in a frame as F. It will be necessary, however, to insert such a card into the frame as F by sliding the entire length of such a card over a panel as PA, and it is for this reason that it is advantageous to resort to a card as C at least having notches as **34** and **35** therein.

Thus in assembling a printing plate as P and a card as C onto a frame as F, it will be understood that type characters as T will usually first be embossed on the plate as P and an impression will be made from at least selected of such type characters onto the card as C. The first step in assembling such a printing plate and card onto a frame as F is illustrated in Fig. 2 and by referring thereto it will be seen that the flange as **21** on a plate as P is first inserted into a lower bead as LB with the plate arranged in angular relation with the adjacent face of the frame as F and desirably with the shorter edges of the plate as P respectively spaced inwardly from the inner edges of side marginal portions as the panel PA so that therefore longitudinally of the plate as P and the frame as F the plate will be in proper relation to the frame as F.

Moreover, when a plate as P is arranged as shown in Fig. 2, the notch **25** will be in alignment with a retaining device as RD2 and the outer ends of flange sections as **23** and **24** will be respectively spaced inwardly of the inner ends of the upstanding parts of retaining devices as RD3 and RD1. Therefore, once the plate as P has been arranged as shown in Fig. 2, it may thereafter be laid against the adjacent face of a frame as F to thereby be disposed in the position of the plate P shown in Figs. 1 and 3, at which time, as best shown in Fig. 7, the notch **25** will be embracing the retaining device as RD2 and the outer ends of the flange sections **23** and **24** will be respectively disposed to cooperate with the inner ends of the upstanding parts of retaining devices as RD3 and RD1. By reason of such relation of the notch **25** and the outer ends of the flange sections as **23** and **24** with the retaining devices, the plate as P is effectively held against longitudinal movement on the frame as F. Moreover, such relation between the marginal portion of the plate and the retaining devices prevents transverse movement of the plate on the carrier.

Face-to-face separation between the lower edges of the plate as P and the frame as F is effectively prevented when the plate is so installed on the frame, by reason of the fact that the lower bead as LB is overlying the marginal portion of the plate that is extended into this bead. Yet further, face-to-face separation between the upper marginal portion of the plate P and the frame is effectively prevented by reason of the fact that the flange **22** on the plate is disposed beneath the lower marginal portion of the card.

Thus once the plate P has been installed on the frame in the manner just described, the card C is arranged in the manner shown in Fig. 3 by first extending the upper marginal edge thereof into the bead as UB with the notches **34** and **35** respectively aligned with the retaining devices RD2 and RD1. At this time, as shown in Fig. 3, the lower marginal portion of the card will be overlying the flange **22** and hence when the card C is slid to the left, as viewed in Fig. 3, to move the notches **34** and **35**, respectively, out of alignment with the retaining devices RD2 and RD1 and into the position in which these notches are shown in Fig. 1, the card C is in proper position on the frame as F. Moreover, by reason of the extension of the horizontal portions of the retaining devices over the lower marginal portion of the card and the disposition of this marginal portion of the card over the flanges **22** on the plate as P, this plate as well as the card is effectively held in proper position on the frame or carrier F.

Reference has been made hereinabove to the cutting of cards as C from a web of sheet material withdrawn from a roll whereby a concavo-convex card is afforded and it has been explained that impressions are advantageously made on the concave face of such a card, a card of such concavo-convex configuration being shown in section in Fig. 9. It is the provision of a notch as **35** or other distinguishing outline in an index card as C that may be used to insure that an impression will be made on the concave face of such a concavo-convex card. Thus, for example, the notch **35** is provided in what should be the lower edge of the card and this notch is spaced from what should be the lower right-hand corner of the card when it is installed on the frame as F with the concave face thereof exposed.

Therefore, by forming the notch as **35** or the like in such a distinctive position in the card and by instructing the operator to dispose this distinguishing characteristic in a predetermined position, it may be insured that an impression will be made on the concave face of an index card as C. As a further example of this, if the card as C is arranged so as to have the convex face thereof disclosed, then the notch as **35** will appear in the lower left-hand corner of the card as it is viewed in Fig. 6, and this will indicate that the card is in improper position to receive an impression. It will therefore be seen that it is advantageous to provide a distinguishing characteristic in the card as, for example, a notch or the like near one of the corners thereof for this will enable the card to be faced in the desired direction when an impression is to be made thereon.

Even in an instance where an index card as C is cut from a flat sheet of material it will be advantageous to impart a distinguishing characteristic thereto as by imparting a particular outline such as is done when a notch as **35** is located in the manner above described, for in such circumstances the card may be cut from the flat sheet in such a manner as to have the grain of the sheet material, such as cardboard or the like, extended in the direction which will afford the most effective reenforcement in the card. Thus where the card is substantially rectangular in outline it is advantageous to cut the card from the sheet of material in such a way that the grain of the material will be extended in the direction that will most effectively resist flexing of the card longitudinally. Hence when the cards are die-cut the extent of the grain should be taken into consideration and a distinguishing characteristic may, therefore, be advantageously imparted thereto so as to thereby insure utilization of the extent of the grain of the paper, cardboard or the like in the manner which will most effectively reenforce the card.

Moreover, in so far as a concavo-convex card is concerned, when such a card is inserted into retaining devices RD1, RD2 and RD3 and the bead UB, these retaining devices overlie opposite marginal portions of the card and when the card is of concavo-convex configuration and the convex face thereof is disposed toward the adjacent face

of the frame, then these opposite marginal portions thereof tend to extend upwardly but since it is these that pass into retaining devices as aforesaid, the card is somewhat placed under tension to thereby be effectively held on the frame. Moreover, such retaining devices hold the marginal portions of the card down in proper position on the frame as F so as to thereby avoid the likelihood of injury to these marginal portions.

In some instances it may be desirable to provide retaining devices of uniform configuration on a frame and to so arrange these retaining devices that each of the devices affords a stop to limit movement of the card in one direction longitudinally thereof on the frame. An arrangement of this character is illustrated in Figs. 10 to 14, inclusive, and the printing device there shown is similar to that illustrated in Fig. 1 and those portions which correspond to portions of the device shown in Fig. 1 are not described herein but reference characters are applied in Figs. 10 to 14, inclusive, to those parts which correspond to those shown in Fig. 1 except that the suffix *a* is added where these reference characters appear in Figs. 10 to 14.

Retaining devices as RD5, RD6 and RD7 are provided on the frame Fa illustrated in Figs. 10 to 14 and these retaining devices are similar in configuration. Thus the retaining device RD6 is illustrated in detail in Figs. 12, 13 and 14 and by referring thereto it will be seen that this retaining device is afforded by striking up an underlying portion of the material of the frame Fa to afford a panel 37 on each of the retaining devices that extends in parallel but spaced apart relation with the adjacent face of the frame Fa. Moreover, each such retaining device includes an upstanding wall as 38 which, as in the case of the wall as 26, Fig. 8, of the retaining devices as RD2 and RD1, is spaced from the bead LBa so as to cooperate with the upper marginal portion of the plate Pa. Furthermore, each retaining device also includes an upstanding wall 39 which is arranged at corresponding ends of the plates 37 and the upstanding parts as 38. The card as Ca has notches 34a and 35a formed therein which are spaced apart in an amount corresponding to the spacing apart of the retaining devices RD6 and RD5.

The plate Pa shown in Fig. 10 is installed on the frame Fa in the same manner as that in which the plate P is installed on the frame as F. Furthermore, initially the card as Ca is arranged in a position similar to the card C, Fig. 3, with the notches 34a and 35a respectively clearing the retaining devices RD6 and RD5. Thereafter, the card Ca is slid to the left as viewed in Fig. 10 to thereby move the notches 34a and 35a respectively out of alignment with the retaining devices RD6 and RD5. At this time the lower corner of the card Ca at the leading end thereof passes into the retaining devices RD7. The vertical portions as 39 on the retaining devices effectively limit sliding movement of the card Ca in one linear direction and a retaining device RD4a is effective to limit sliding movement of the card in the opposite linear direction. It will therefore be seen that once the card Ca is disposed in the position shown in Figs. 10 and 11, it is effectively held against displacement from the frame Fa. It will be understood that the lower marginal portion of the card Ca cooperates with a flange as 22 along the upper edge of the plate Pa for a purpose explained hereinabove.

It is also to be understood that the corners of the notches 34a and 35a might be beveled as are the corners of the notches 34 and 35, as indicated at 36. It will be further appreciated that the provision of the upstanding parts as 39 is effective to guide the edges of notches as 34a and 35a shown in spaced relation therewith in Figs. 10 and 11 up out of the frame when the card Ca is moved to the right as viewed, for example, in Fig. 10. Moreover, in some instances it may be advantageous to provide the upstanding parts as 39 at the right-hand end of retaining devices as RD6, as these are viewed in Figs. 10 and 11, rather than at the left-hand ends thereof as shown.

It will be understood from the foregoing description that I have provided a novel printing device carrier in which a plate and frame mutually contribute to retention of one and the other on the carrier, particularly by reason of the extension of retaining devices over the marginal portion of the card which extends over the adjacent marginal portion of the plate. Furthermore, by arranging, in the present instance, the marginal edge of the plate to clear such retaining devices, I am enabled to insure against undesired linear movement of the plate over the face of the carrier on which it is mounted.

It is to be understood that while I have shown a card embodying notches adapted to clear retaining devices therefor and have shown such card as being utilized to retain a marginal edge of a printing plate against face-to-face separation with respect to a frame on which it is mounted, such an arrangement may be advantageously used in connection with an index card that does not perform the aforesaid plate retaining function and so to do is to be understood to be within the ambit of my invention.

It will be appreciated from the foregoing description that the hereinabove described arrangement of a printing device enables the objects of this invention to be realized. However, while I have illustrated and described preferred embodiments of my invention, it is to be understood that these are capable of variation and modification and I therefore do not wish to be limited to the precise details set forth, but desire to avail myself of such changes and alterations as fall within the purview of the following claims.

I claim:

1. A printing device including a carrier, a printing plate and an index card mounted on said carrier in side-by-side relation with marginal portions thereof arranged in juxtaposed relation, retaining means on the carrier disposed between at least parts of said marginal portions, one of said marginal portions being cut away in at least a part thereof to clear said retaining means whereby parts thereof extend past said retaining means to underlie parts of the other of said marginal portions, said retaining means being extended over the marginal portion of which at least a part overlies at least the part of the marginal portion that extends past the retaining means, and means for securing the marginal portions of the index card and printing plate opposite the juxtaposed marginal portions thereof to said carrier.

2. A printing device including a carrier, a printing plate and an index card mounted on said carrier in side-by-side relation with marginal portions thereof arranged in juxtaposed relation at least one of said marginal portions having a part cut away to clear a retaining device, the

marginal portion of the plate that is juxtaposed to the marginal portion of the card having at least a part thereof extended under such marginal portion of the card, retaining means on said carrier disposed between such marginal portions effective to hold the marginal portion of the card against face-to-face separation with relation to the part of the plate and carrier disposed therebelow, and means for securing the marginal portions of the index card and printing plate opposite the juxtaposed marginal portions thereof to said carrier.

3. A printing device including a carrier, a printing plate and an index card mounted on said carrier in side-by-side relation with marginal portions thereof arranged in juxtaposed relation, retaining means on the carrier disposed between at least parts of said marginal portions, the marginal portion of the plate that is juxtaposed to the marginal portion of the card having at least a part thereof cut away to clear said retaining means whereby parts thereof extend past said retaining means to underlie parts of the juxtaposed margin of the cards, said retaining means being extended over said marginal portion of the card to thereby be effective to hold such marginal portion of the card against face-to-face separation with relation to the part of the plate disposed therebelow, and means for securing the marginal portions of the index card and printing plate opposite the juxtaposed marginal portions thereof to said carrier.

4. A printing device including a carrier, retaining means along one edge of the carrier arranged for cooperation with a marginal portion of a printing plate adapted to be retained on the carrier, a retaining device formed on the carrier in spaced relation with the retaining means and including an upstanding part and a projecting part extended away from said plate, a printing plate having one marginal portion thereof disposed in said retaining means and having a recess in the opposite marginal portion in which said retaining device is received when said plate is in its operative position on said carrier, the retaining means and the upstanding part of said retaining device being effective to prevent undesired movement of said plate on said carrier in opposite linear directions, the upstanding part of said retaining device cooperating with the side edges of said recess to prevent undesired movement of said plate on said carrier in linear directions normal to the first named linear directions, and means cooperating with the projecting part on said retaining device and with said retaining means and with the marginal portion of the plate adjacent to said retaining device to prevent face-to-face separation between said plate and carrier.

5. A printing device including a carrier, retaining means along one edge of the carrier arranged for cooperation with a marginal portion of a printing plate adapted to be retained on the carrier, a retaining device formed on the carrier in spaced relation with the retaining means and including an upstanding part, a printing plate having one marginal portion thereof disposed in said retaining means and having a recess in the opposite marginal portion in which said retaining device is received when said plate is mounted on said carrier, the retaining means and the upstanding part of said retaining device being effective to prevent undesired movement of said plate on said carrier in opposite linear directions, the upstanding part of said retaining device cooperating with an edge of said recess to prevent undesired movement of said plate on said carrier in a linear direction normal to said linear directions, and an index card on said carrier having a portion thereof disposed beneath said retaining device and extended over the marginal portion of the plate in which said recess is formed and effective, in cooperation with said retaining means, to prevent face-to-face separation between said plate and carrier.

6. A printing device including a carrier, retaining means along one edge of the carrier arranged for cooperation with a marginal portion of a printing plate adapted to be retained on the carrier, a retaining device formed on the carrier in spaced relation with the retaining means and including an upstanding part, a printing plate having one marginal portion thereof disposed in said retaining means and having a flange along the opposite marginal edge thereof, said flange having a recess formed therein in which said retaining device is received when said plate is mounted on said carrier, the retaining means and the upstanding part of said retaining device being effective to prevent undesired movement of said plate on said carrier in opposite linear directions, the upstanding part of said retaining device cooperating with an edge of said recess to prevent undesired movement of said plate on said carrier in a linear direction normal to said linear directions, and means disposed beneath said retaining devices and extended over said flange and effective, in cooperation with said retaining means, to prevent face-to-face separation between said plate and carrier.

7. A printing device including a carrier, retaining means along one edge of the carrier arranged for cooperation with a marginal portion of a printing plate adapted to be retained on the carrier, a retaining device formed on the carrier in spaced relation with the retaining means and including an upstanding part, a printing plate having one marginal portion thereof disposed in said retaining means and having a flange along the opposite marginal edge thereof, said flange having a recess formed therein in which said retaining device is received when said plate is mounted on said carrier, the retaining means and the upstanding part of said retaining device being effective to prevent undesired movement of said plate on said carrier in opposite linear directions, the upstanding part of said retaining device cooperating with an edge of said recess to prevent undesired movement of said plate on said carrier in a linear direction normal to said linear directions, a second retaining means on said carrier, and an index card retained on said carrier by said second retaining means and said retaining device and having a marginal portion thereof disposed over said flange to thereby be effective in cooperation with the first-named retaining means to prevent face-to-face separation between said plate and carrier.

8. A printing device including a carrier, retaining means along one edge of the carrier arranged for cooperation with a marginal portion of a printing plate adapted to be retained on the carrier, a plurality of retaining devices on said carrier disposed in spaced relation with each other and said retaining means, a printing plate mounted on said carrier with one marginal portion thereof disposed in said retaining means and having a flange along the opposite marginal portion thereof, said flange having a plurality of recesses formed therein and disposed to respective-

ly receive said retaining devices when said plate is mounted on said carrier, said retaining devices cooperating with said retaining means to prevent undesired movement of said plate on said carrier in opposite linear directions, said retaining devices cooperating with edges of said recesses to prevent undesired linear movement of said plate on said carrier in directions normal to said opposite linear directions, and means cooperating with said retaining devices and said retaining means and with the marginal portion of the plate adjacent to said retaining device to prevent face-to-face separation between said plate and carrier.

9. A printing device including a carrier, retaining means along one edge of the carrier arranged for cooperation with a marginal portion of a printing plate adapted to be retained on the carrier, a plurality of retaining devices on said carrier disposed in spaced relation with each other and said retaining means, a printing plate mounted on said carrier with one marginal portion thereof disposed in said retaining means and having a flange along the opposite marginal portion thereof, said flange having a plurality of recesses formed therein and disposed to respectively receive said retaining devices when said plate is mounted on said carrier, said retaining devices cooperating with said retaining means to prevent undesired movement of said plate on said carrier in opposite linear directions, said retaining devices cooperating with edges of said recesses to prevent undesired linear movement of said plate on said carrier in directions normal to said opposite linear directions, and an index card on said carrier having a marginal portion thereof disposed beneath said retaining devices and over said flange and effective, in cooperation with said retaining means, to prevent face-to-face separation between said plate and carrier.

10. A printing device carrier adapted to hold a notched printing plate and a card in marginal overlapping relationship, said carrier having a retaining means formed along one marginal portion thereof, and fixed and non-depressible retaining devices formed on said carrier at positions along said marginal overlapping area and at points corresponding to notches in a printing plate and including upstanding portions spaced from said retaining means and adapted to cooperate therewith to prevent undesired movements in diverse opposite linear directions of a printing plate mounted on the carrier between said retaining means and the upstanding parts of said retaining devices, said retaining devices including parts disposed in spaced apart and substantially parallel relation with the adjacent face of the carrier and extended from the upstanding parts thereof in a direction away from said retaining means to thereby be effective to overlie a marginal portion of an index card mounted on the carrier.

11. A printing plate adapted to have type characters embossed thereon to appear in relief on one face thereof, comprising a ductile body of

embossable sheet material of not substantially more than .030 inch in thickness and a flange portion along one marginal portion of the plate having a thickness less than that of said body, a face thereof spaced beneath the face of the plate on which type characters embossed on the plate are to appear in relief, said flange having at least one recess formed in the free edge thereof.

12. A printing plate on which type characters may be embossed to appear in relief on one face and in intaglio on the opposite face thereof, comprising a body of embossable sheet material of not substantially more than .030 inch in thickness and a flange along at least one marginal edge of said plate and which includes substantially parallel faces of which one is disposed to be substantially flush with one of the opposite faces of said plate while the other of such faces is disposed to lie below the plane of the other of the opposite faces of the plate, said flange having a plurality of recesses formed in the free edge thereof.

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