

June 30, 1953

L. BAKER

2,643,786

APPARATUS FOR MOUNTING INSERTS IN CARDS

Filed Nov. 2, 1949

5 Sheets-Sheet 1

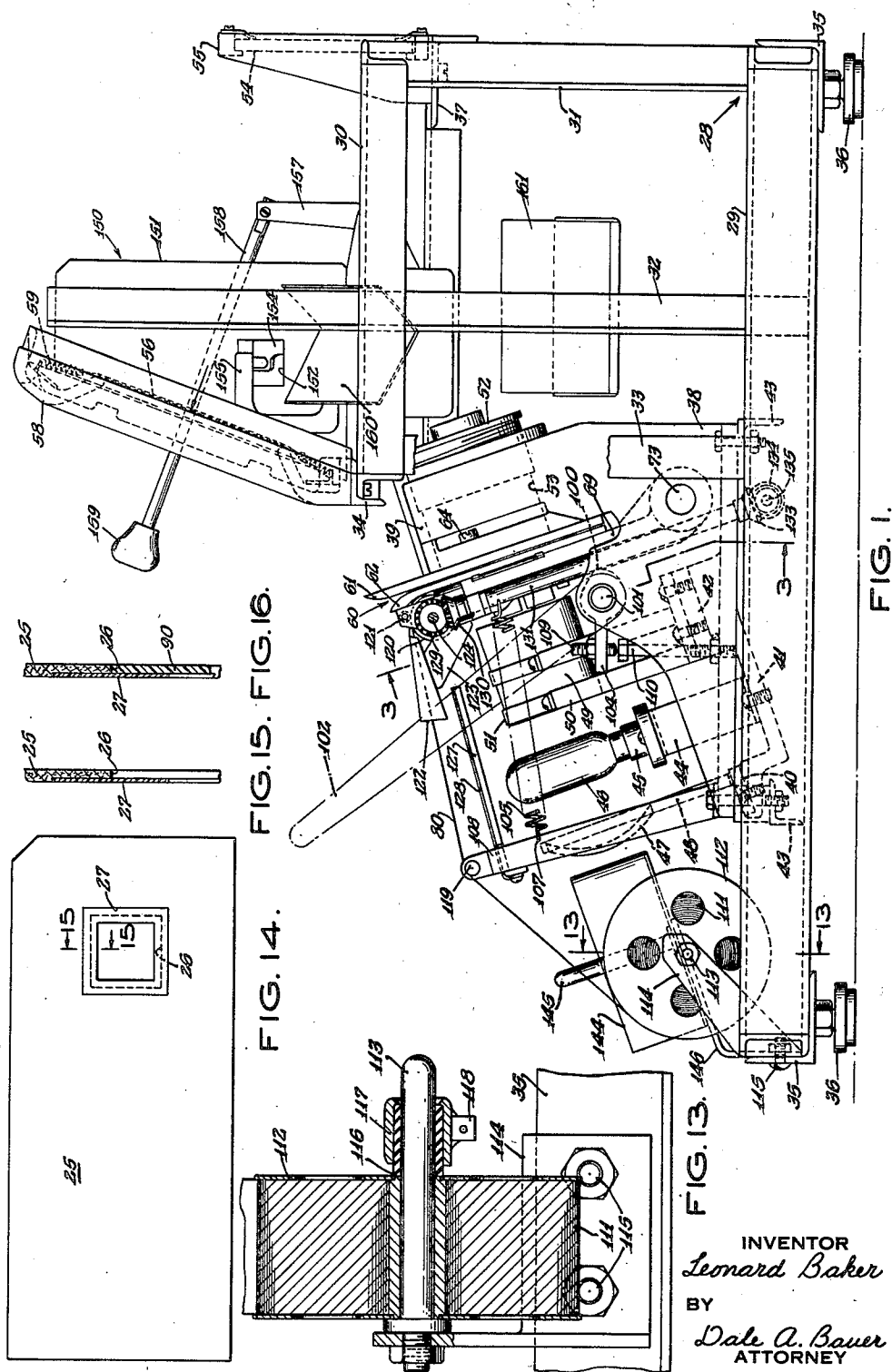


Fig. 1.

June 30, 1953

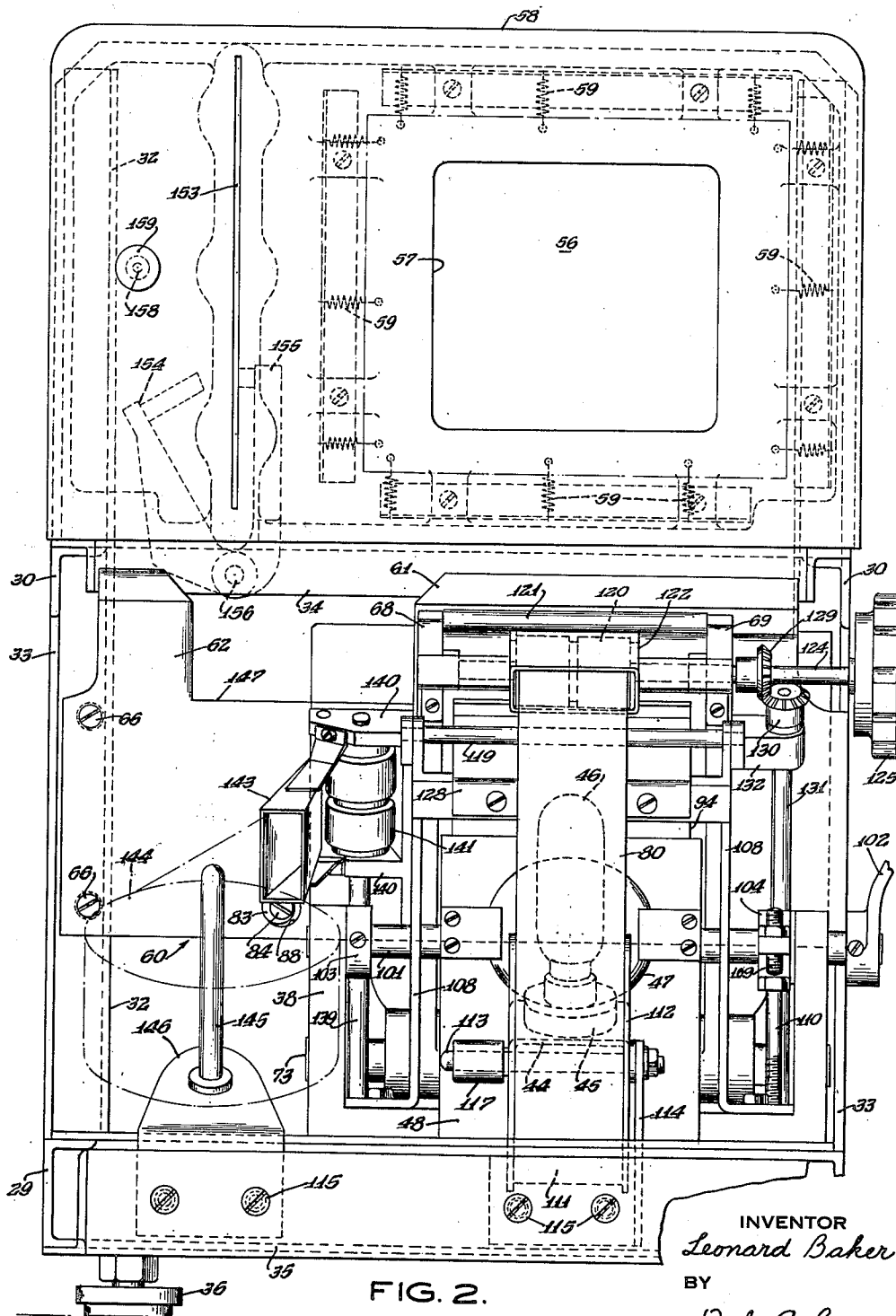
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5 Sheets-Sheet 3

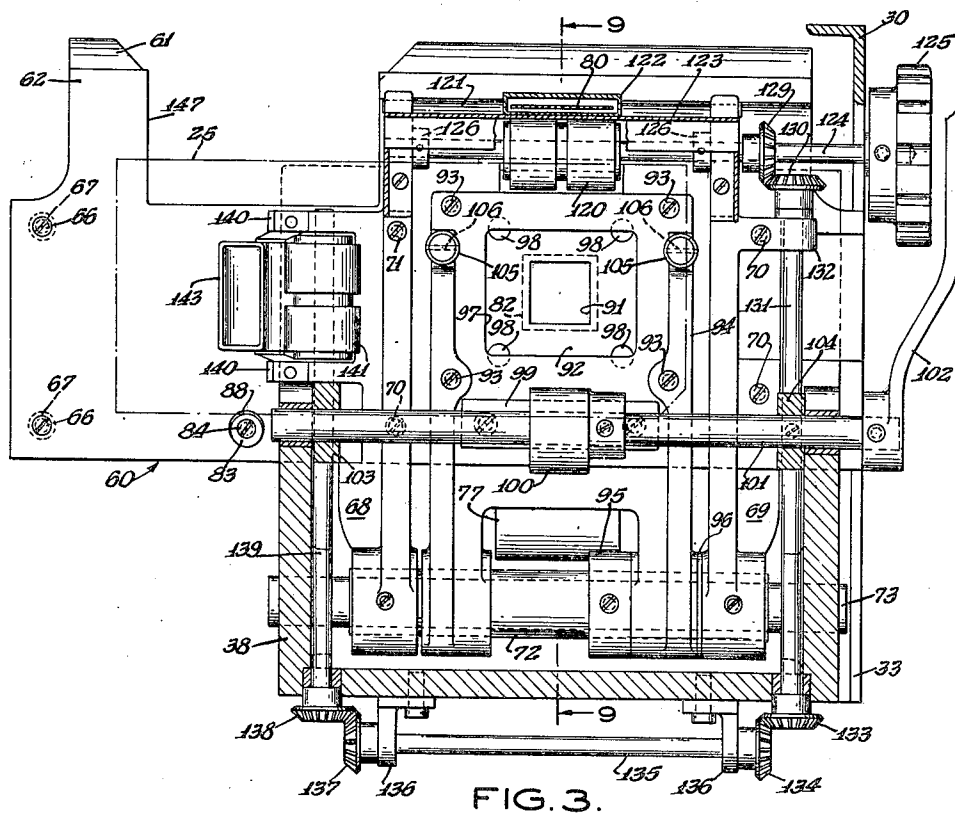


FIG. 3.

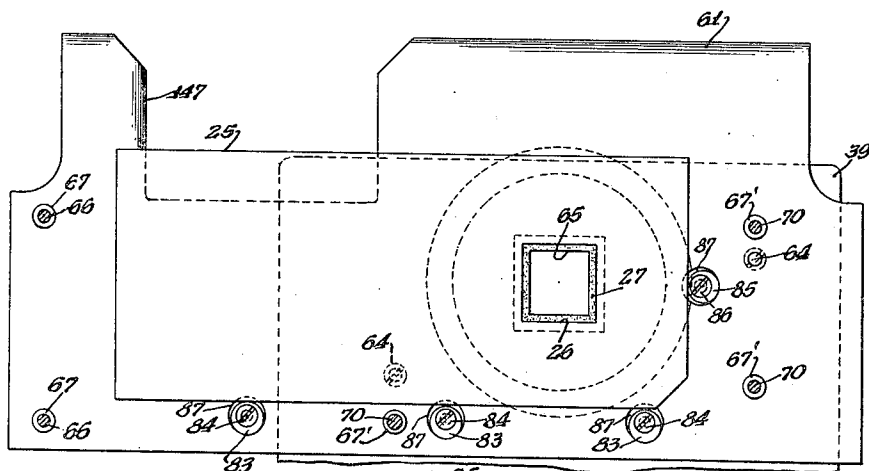


FIG. 6.

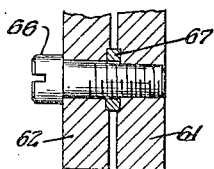


FIG. 7.

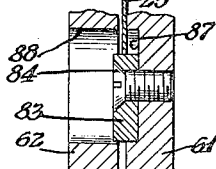


FIG. 8.

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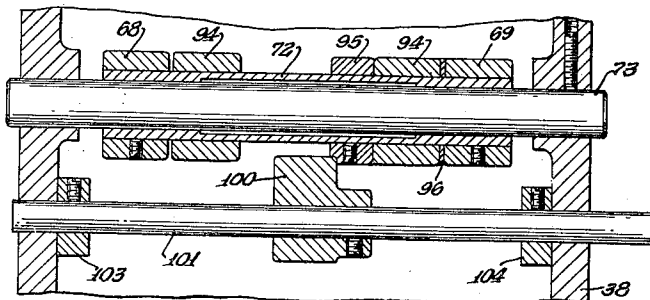
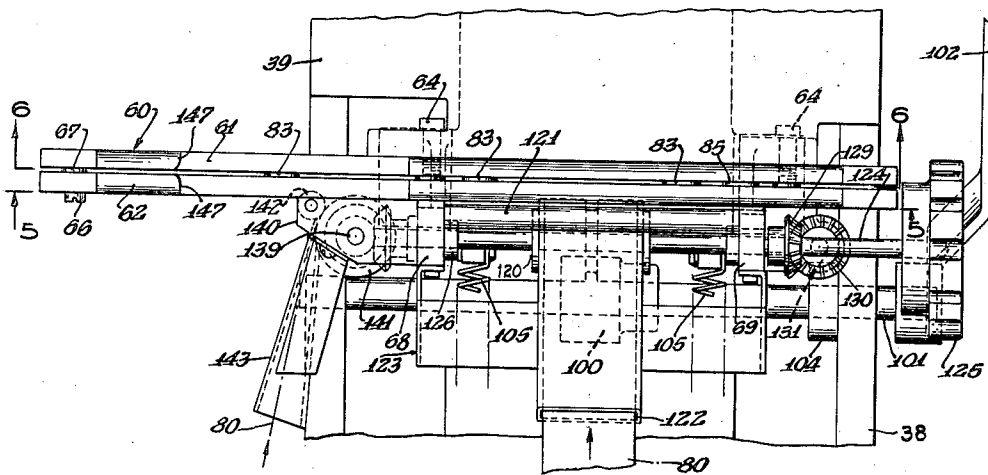
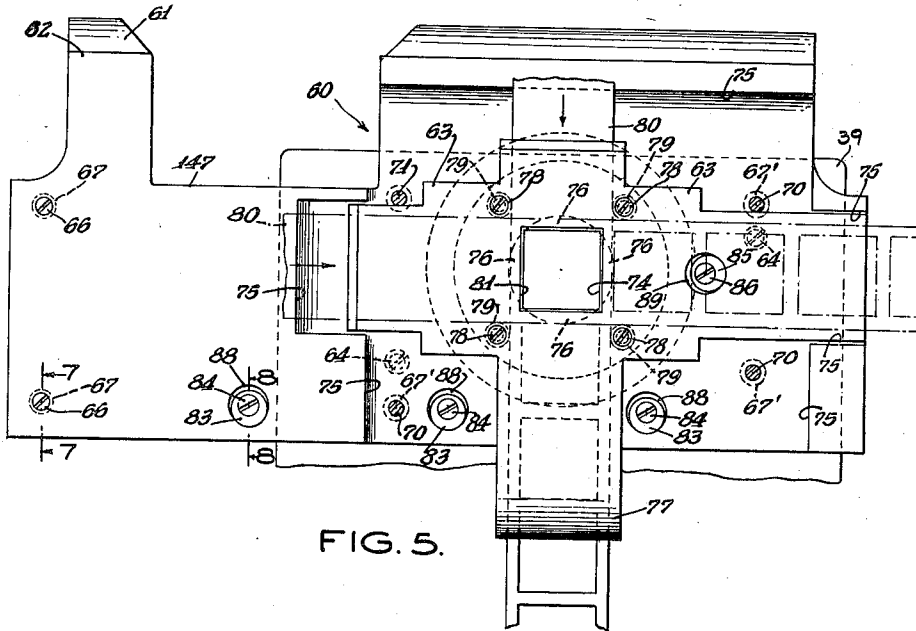
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5 Sheets-Sheet 4



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APPARATUS FOR MOUNTING INSERTS IN CARDS

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5 Sheets-Sheet 5

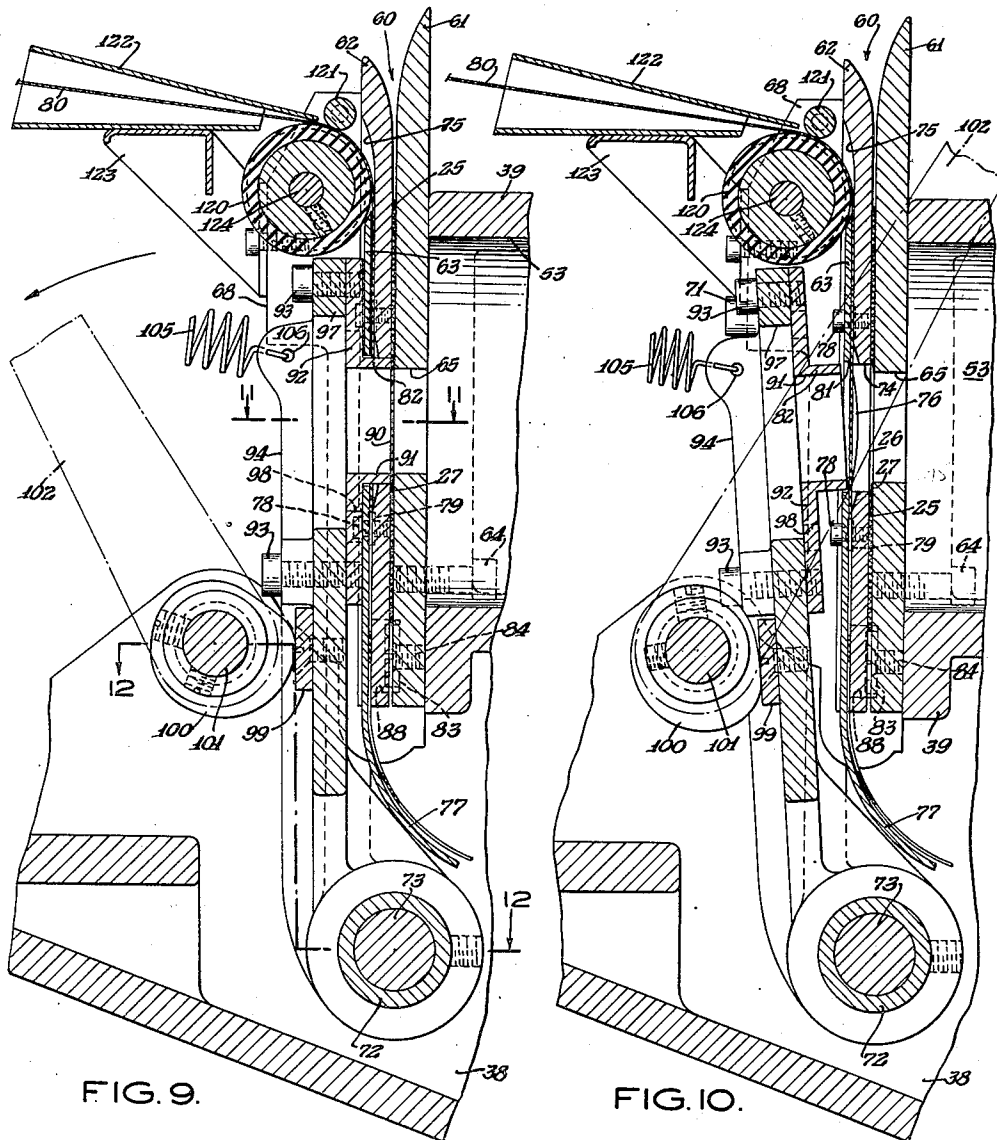


FIG. 9.

FIG. 10.

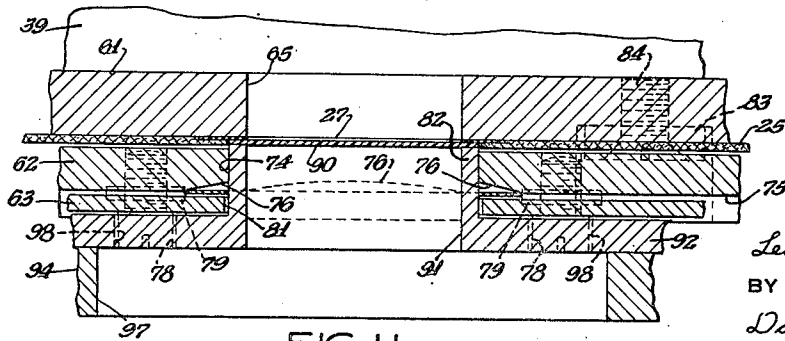


FIG. 11.

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2,643,786

APPARATUS FOR MOUNTING INSERTS IN CARDS

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Application November 2, 1949, Serial No. 125,017

11 Claims. (Cl. 216—25)

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This invention relates to apparatus for mounting record bearing sections, such as sections of micro-film, in apertured cards.

One of the objects of the present invention is to provide novel, simple, and effective apparatus for cutting or blanking sections of micro-film, etc. from a supply strip thereof, inserting said sections into apertures in cards, and applying the same to adhesive coated sheets or frames carried by said cards and extending over said apertures.

Another object of the invention is to provide novel apparatus of the above character wherein the film sections may be viewed for selection and/or positioning purposes prior to cutting or blanking of said sections from the supply strip thereof.

Another object is to provide mounting apparatus of the above character novelly constructed whereby the film strip may be selectively positioned vertically or horizontally so that the pictures or images on the film sections subsequently cut from said strip and mounted in the card apertures will appear in upright position.

A further object is to provide apparatus for the above purpose wherein the blanking of each section of film, etc. from the supply strip, the inserting of said section into the card aperture, and the application of the same to the adhesive coated frame are all performed in a novel manner by a punch in one operating stroke of the latter.

A still further object is to provide in mounting apparatus of the above character novel means for supporting and accurately locating the cards in section mounting position.

Still another object is to provide novel punch and die means for cutting or blanking sections of film, etc. from a supply strip thereof by a shearing action.

Another object is to provide novel means for blanking or cutting sections of film, etc. from a supply strip thereof, comprising a pivoted punch and a cooperating die so constructed that the action of said punch in cutting a section along spaced lines perpendicular to the pivotal axis of the punch is progressive from one extremity of said section to the other extremity thereof, and in cutting the section along spaced lines parallel to said axis is progressive from both outer extremities of said section inwardly toward the center of the section.

The above and further objects and novel features of the present invention will more fully appear from the following detailed description when the same is read in connection with the ac-

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companying drawings. It is to be expressly understood, however, that the drawings are for the purpose of illustration only and are not intended as a definition of the limits of the invention.

In the drawings, wherein like reference characters refer to like parts throughout the several views,

Fig. 1 is a side elevation view of one form of mounting apparatus constructed in accordance with the present invention, the casing normally enclosing a major portion of said apparatus being removed;

Fig. 2 is an enlarged end elevation view of said apparatus, looking from the left of Fig. 1;

Fig. 3 is an enlarged vertical transverse sectional view taken substantially on the line 3—3 of Fig. 1, said view being substantially on the same scale as Fig. 2, and showing in broken lines a card in film mounting position;

Fig. 4 is a detail top plan view of the structure shown in Fig. 3;

Fig. 5 is an elevation view of the plate assembly from the position indicated by the line 5—5 of Fig. 4, said view showing the film supply strip in full lines in the position it occupies when the vertical feed is employed, and in broken lines in the position it occupies when the horizontal feed is employed;

Fig. 6 is a vertical longitudinal sectional view taken substantially on the line 6—6 of Fig. 4, showing the anvil plate and the eccentric card locating stops carried thereby, and also a card in full lines in film mounting position;

Fig. 7 is a fragmentary vertical sectional view on the line 7—7 of Fig. 5;

Fig. 8 is a fragmentary vertical sectional view on the line 8—8 of Fig. 5;

Fig. 9 is an enlarged vertical sectional view on the line 9—9 of Fig. 3, showing the film punch in its actuated film mounting position;

Fig. 10 is a vertical sectional view similar to Fig. 9, but showing the film punch in its normal retracted position;

Fig. 11 is a fragmentary horizontal sectional view on the line 11—11 of Fig. 9, said view being on a still larger scale for purposes of clearer illustration;

Fig. 12 is a horizontal sectional view on the line 12—12 of Fig. 9;

Fig. 13 is an enlarged vertical sectional view on the line 13—13 of Fig. 1;

Fig. 14 is a face view of one form of card which is adapted to be handled in the apparatus;

Fig. 15 is an enlarged fragmentary vertical

sectional view on the line 15—15 of Fig. 14; and Fig. 16 is a fragmentary vertical sectional view similar to Fig. 15, but of the completed card with the film section mounted therein.

Referring now to the drawings, there is shown, by way of example, one form of mounting apparatus constructed in accordance with the present invention which is particularly, although not exclusively, adapted for mounting sections or frames of microfilm in apertured cards of the record type commonly employed in connection with known and existing record card tabulating and sorting systems and machines. Mounting of the film sections in said record cards facilitates classifying and sorting of said films as to subject matter in a manner well understood in the record card tabulating and sorting art, and filing and indexing of the same. It will be understood, however, that the present invention is not limited to the mounting of the film sections in the statistical or tabulating machine type of card since other forms of record or catalogue cards, as well as ordinary cards may be used for this purpose. Additionally, the present invention comprehends the use thereof for mounting other forms of record bearing transparencies, as well as photographs and other opaque and translucent sheets or inserts in apertured cards or card-like structures for various purposes.

For purposes of illustration only, there is shown in Figs. 14 and 15 one form of card, indicated at 25, which is of the statistical or tabulating machine type and which has been prepared for mounting of a section or frame of micro-film therein, said card being oblong in shape and formed of single ply cardboard or heavy relatively stiff paper material. Other thin transparent or translucent and opaque inserts may be mounted in the card in lieu of the micro-film. Card 25 is provided with a generally rectangular aperture 26 of an appropriate size to receive the film section or other insert therein, said aperture being located centrally between the upper and lower edges of the card and inwardly a corresponding distance from one side edge of said card. Adhesively secured to one face of card 25 and covering the aperture 26 therein is a thin generally rectangular frame or sheet 27 of transparent material, which is coated on the underside thereof with a slow acting inert adhesive and is utilized to firmly hold the film section or other insert to the card when said section or insert is inserted in the aperture 26 as hereinafter described. The frame 27 is disposed within a compressed portion of card 25 so that it does not project beyond the surface of said card, and said frame has a central portion thereof removed to leave a small marginal edge extending around and into the aperture 26 and to facilitate the transmission of light there-through.

As best shown in Fig. 1, the novel mounting apparatus comprises a skeleton framework, indicated generally at 28, which supports the various parts of said apparatus, including an outer casing (not shown). This framework 28 at each side of the apparatus is composed of two vertically spaced horizontal bars 29 and 30, and three longitudinally spaced vertical bars 31, 32 and 33 which are welded or otherwise suitably secured to said horizontal bars. The upper bars 30 are shorter than the lower bars 29 and extend from a point slightly forward of the longitudinal center of the apparatus to the front end of said apparatus, thereby forming in effect a stepped

framework for a purpose to appear hereafter. The bars 30 are connected together at the rear ends thereof by a cross bar 34 welded or otherwise suitably secured thereto. The lower bars 29 are connected together at the opposite ends thereof by cross bars 35 welded or otherwise suitably secured thereto, said cross bars being provided with adjustable rubber-tipped feet 36 which support the apparatus on a table, bench, or the like. The front vertical bars 31 are connected together adjacent the tops thereof by a cross bar 37 welded or otherwise suitably secured thereto.

Located within the framework 28 at one side 15 and toward the rear thereof is a main base bracket 38 having an upwardly projecting, transversely extending front wall portion 39 which is inclined rearwardly from the vertical, and longitudinally spaced base portions 40, 41 and 42 located rearwardly of the front wall portion 39 and which lie in planes disposed at ninety degrees or right angles to said wall portion. Bracket 38 is bolted or otherwise suitably secured at opposite ends thereof to cross bars 43 which are welded or otherwise suitably secured to the frame bars 29.

Located centrally on the base bracket 38 and bolted or otherwise suitably secured to the inclined portion 41 thereof is a bracket 44 (Figs. 1 and 2) to the upper end of which is bolted or otherwise suitably secured a socket 45 carrying an electrical projection lamp 46. This lamp 46 is connected with a suitable source of electrical current and illuminated under the control of suitable electrical switch means (not shown). Disposed directly in back of the lamp 46 is a concave reflector or mirror 47 suitably carried by a bracket 48 which is bolted or otherwise suitably secured to the inclined portion 40 of the base bracket 38. Disposed directly in front of the lamp 46 is a suitable condenser lens including a cylinder 49 (Fig. 1) which rests in semi-circular portions of a bracket 50 that is bolted or otherwise suitably secured to the inclined portion 42 of the base bracket 38. Lens cylinder 49 is adjustably clamped to bracket 50 by means of bands 51 which pass around the upper half of said cylinder and are suitably secured to the bracket 50. Spaced a suitable distance forwardly of condenser lens 49 and disposed in direct axial alignment with said lens is a suitable projecting lens including a cylinder 52 which is carried in a suitable opening 53 formed in and extending through the inclined wall portion 39 of the base bracket 38. The cylinder 52 is externally threaded and the outer end portion of the opening 53 is internally threaded to threadedly receive said cylinder whereby the latter may be conveniently and minutely adjusted in an axial direction relative to the base bracket 38 for film focusing purposes.

Located at the front of the framework 28 and in the path of the rays of light from the projecting lens 52 is a light reflecting element 54, such as a flat mirror, which is suitably mounted in vertical position in a bracket 55 which is bolted or otherwise suitably secured to the frame cross bar 37 (Fig. 1). The reflecting element 54 as so positioned is effective to receive the light rays from the projecting lens 52 and reflect the same rearwardly and upwardly onto a viewing screen 56 (Figs. 1 and 2) of suitable translucent material, such as cellulose acetate, paper, fabric, etc. The viewing screen 56 extends across

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an enlarged aperture 57 formed in a forwardly inclined hook-like frame 58 and is held to said frame by a plurality of small pull springs 59 having corresponding ends connected to said screen and opposite ends suitably connected to said frame. The hook-like frame 58 extends across the entire width of the apparatus and is bolted or otherwise suitably secured to the frame cross bar 34. By virtue of the mirror 54 and the relative location thereof, the effective optical distance between the projecting lens 52 and the screen 56 is so increased within the relatively small apparatus that the image or picture on the projected film will be magnified on said screen and, hence, may be easily and conveniently observed by the operator standing at the rear of said apparatus.

Located between the condenser lens 49 and the projecting lens 52 is a transversely extending plate assembly, indicated generally at 60 (Figs. 1, 5, 9 and 10), comprising an outer anvil plate 61, an intermediate die plate 62, and an inner stripper plate 63 arranged in spaced parallel face-to-face relation and disposed at right angles to the optical axis of the optical system comprising the lamp 46, the condenser lens 49, and the projecting lens 52. The anvil plate 61 extends substantially across the entire width of the framework 28 and is secured to the rear flat face of the wall portion 39 of the base bracket 38 by means of two or more bolts 64 (Figs. 1, 4 and 6) which extend through suitable clearance openings in said wall portion and are threaded into suitable threaded openings in said plate, the length of said bolts being such that they do not project beyond the rear surface of the plate. The anvil plate 61 is provided with an aperture 65 (Figs. 6, 9, 10 and 11) located in direct alignment with the lenses 49 and 52 to enable the light rays from the condenser lens 49 to pass through said plate. The aperture 65 is of the same shape and substantially the same size as the opening in the adhesive coated sheet 27 on the card 25 so that said sheet and particularly the marginal portions thereof extending into the card aperture 26 are wholly supported or backed by the anvil plate 61 when a card is in mounting position and a film section is mounted therein, as hereinafter described.

The die plate 62 is as long as the anvil plate 61, but not as wide as the latter plate so that the upper ends of the plates are stepped to facilitate the insertion of a card 25 between said plates, the latter being also rounded at said ends for this purpose (Figs. 3 to 5, 9 and 10). The die plate 62 is secured at the right-hand end thereof, as viewed in Figs. 3, 4 and 5, to the anvil plate 61 in spaced relation by two screws 66 and annular spacers 67 (Figs. 5 and 7), the spacers being disposed between the plates and engaged over the screws which project through suitable clearance openings in the plate 62 and are threaded into suitable threaded openings in the plate 61. The space between the plates 61, 62 provided by the spacers 67 is slightly greater than the thickness of one card 25 so that the latter will slidably fit between said plates and will be held by the latter in a flat unbowed condition. The die plate 62 is further secured to the anvil plate 61 and to two transversely spaced vertically extending arms 68 and 69 by three screws 70 and a fourth screw 71. One of the screws 70 projects through suitable clearance openings in the arm 68 and plate 62 and is threaded into a suitable threaded open-

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ing in the plate 61, and the other two screws 70 project through suitable clearance openings in the arm 69 and plate 62 and are threaded into suitable openings in the plate 61. The screws 70 are located outside of the film mounting position of the card 25 and have engaged thereover and disposed between the plates 61, 62 similar annular spacers 67' so that said plates are uniformly spaced as above described throughout the length thereof. The fourth screw 71 projects through a clearance opening only in the arm 68 and is threaded into a suitable threaded opening in the die plate 62, said screw being of a length such that it does not project beyond the card receiving surface of said plate and into the path of the card. The spacers 67 and 67' are preferably, but not necessarily, seated in shallow annular recesses in the plates 61 and 62 to facilitate assembling of said plates. The arms 68, 69 are equally spaced at opposite sides of the optical axis of the optical system and are fixed at their lower ends on a sleeve 72 which is telescoped over a short transverse shaft 73 that is non-rotatably fixed in the base bracket 38. Since the anvil plate 61 is secured to the base bracket 38 and the die plate 62 and arms 68, 69 are in turn secured to said anvil plate, said plates and arms are rigidly connected together as a unit.

The die plate 62 is provided with a die opening 74 (Figs. 5, 10 and 11) extending there-through and which is located in direct alignment with the lenses 49 and 52 and the opening 65 in the anvil plate 61. The die opening 74 is of the same shape, but slightly smaller than the aperture 26 in the card 25 so that the cut or died-out film section will enter said card aperture and fit therein without bowing or buckling. The front card receiving surface of the die plate 62 is flat. The rear surface of the die plate 62, however, is under-cut for a major portion thereof surrounding the die opening 74, as indicated at 75 (Figs. 5, 9 and 10), to decrease the thickness of said plate and thereby decrease the extent of movement of the film section to card mounting position. As shown in Figs. 5, 10 and 11, and indicated at 76, each of the four cutting edges of the die opening 74 is hollow-ground or convex in the plane surface of the plate 62 for a major portion of the length thereof about an axis extending at right angles to said edge, whereby a cutting edge is provided which has small straight lands at each end and which uniformly curves inwardly and downwardly from said lands toward and to the exact center of the edge for advantageous purposes to be hereinafter described.

The stripper plate 63 which, as shown in Fig. 5, has an irregular outline to clear the screws 70 and 71, and is formed with a depending forwardly curved portion 77 (Figs. 9 and 10), is disposed within the under-cut portion 75 of the die plate 62 and is secured to the latter in spaced relation by four screws 78 arranged in a square pattern and four annular spacers 79. The spacers 79 are disposed between the plates 62 and 63 and engaged over the screws 78 which project through suitable clearance openings in plate 63 and are threaded into suitable threaded openings in the plate 62. The screws 78 are of a length such that they do not project beyond the card receiving surface of plate 62 into the path of the card. The space between the plates 62, 63 provided by the spacers 79 is slightly greater than the thick-

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ness of the film supply strip 80 to allow free sliding movement of said strip between and relative to said plates. The screws 78 are so located with respect to the die opening 74 in plate 62 that the spacers 79 also serve to guide and accurately center the film strip over said opening in either vertical or horizontal position of said strip, as shown in Figs. 5 and 11. The spacers 79 are preferably seated in shallow recesses in the plates 62, 63 to facilitate assembling and to eliminate all possibility of the film strip 80 catching between said spacers and said plates. The stripper plate 63 is provided with an aperture 81 which is located in direct alignment with the die opening 74 in plate 62 and is of the same shape, but slightly larger than said die opening to allow a punch 82, hereinafter described, to freely pass therethrough.

Located between the anvil plate 61 and die plate 62 and at spaced points along and adjacent the lower edge of plate 61 is a plurality of transversely spaced lower card stops 83 (Figs. 5, 6 and 8), three being shown, which serve to support the edgewise inserted card 25 by its lower or leading longitudinal edge, and to locate said card with its aperture 26 accurately centered vertically with respect to the die opening 74 in plate 62. These stops 83 are in the form of adjustable eccentric disks which are adjustably secured to the anvil plate 61 by flat-head machine screws 84 which extend through suitable clearance openings in said disks and are threaded into suitable threaded openings in the plate 61. Located inwardly from the right-hand end of the anvil plate 61 and between the latter and the die plate 62 is a lateral card stop 85 which serves to locate the inserted card 25 by one of its side edges so that the aperture 26 in said card is accurately centered laterally with respect to the die opening 74 in plate 62. This stop 85 is also in the form of an adjustable eccentric disk which is adjustably secured to the plate 61 by a flat-head machine screw 86 which extends through a suitable clearance opening in said disk and is threaded into a suitable threaded opening in said plate.

The individual adjustable eccentric form of stops 83, 85 enables accurate location of the cards 25 in film mounting position, and compensates for any irregularities in the location of said stops in the manufacture of the plate 61, as well as for any variations in the size of the card 25 and the location of the aperture 26 therein within the limits of adjustment of said stops, to obtain said accurate location of the cards in film mounting position. To facilitate assembling and to insure proper engagement of the cards with the stops 83, 85, said stops are seated in enlarged concentric shallow recesses 87 (Figs. 6 and 8) formed in the anvil plate 61, and they project beyond the card receiving surface of the die plate 62 through suitable enlarged concentric openings 88 (Figs. 5 and 8) formed in and extending through said latter plate. The openings 88 are further utilized to gain access to the screws 84, 86 and stops 83, 85 for adjusting the latter, and for this purpose the stripper plate 63 is also provided with an aligned similar opening 89 for the lateral stop 85 and screw 86.

The punch 82 (Figs. 3 and 9 to 11) cooperates with the die opening 74 in the plate 62 and with the anvil plate 61 in the blanking or dieing out of the sections or frames 90 from the film supply strip 80, and in the mounting of said sections in the cards 25. The punch 82 is disposed between the condenser lens 49 and the stripper plate 63

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and is hollow to permit the light rays from said lens to pass therethrough. The punch 82 is of a size and shape corresponding to the size and shape of the die opening 74 in the plate 62, and the axial opening 91 in said punch for passage of the light rays therethrough is of the same shape and size as the opening 65 in the anvil plate 61. The leading face of the punch 82 is ground flat and square with the axis of the opening 91 in said punch, thereby producing four straight cutting edges on the punch and providing full surface contact of said punch with the film section 90 when applying the latter to the adhesive sheet 27 on the card 25, as herein-after described.

The punch 82 projects forwardly from an integral plate 92 (Figs. 3, 9 to 11) which is secured by means of bolts 93 to a relatively wide vertically extending arm 94 which is disposed between the arms 68 and 69 and is pivotally mounted at its lower end on the sleeve 72. The punch 82 is accurately aligned with the die opening 74 in plate 62 by a collar 95 adjustably fixed on the sleeve 72 and a shim 96 engaged over said sleeve and disposed between the arms 69 and 94. The arm 94 is formed with a window 97 to uncover the opening 91 in the punch 82 and punch plate 92 for the passage of the light rays therethrough. The punch plate 92 is further provided with four enlarged openings 98 to receive the heads of the stripper plate mounting screws 78 and thereby allow the punch 82 to move to its full forward film mounting position, as shown in Fig. 9.

Located centrally on the rear surface of arm 94 and bolted or otherwise suitably secured thereto is a hardened steel wear-resisting block 99 (Figs. 3, 9 and 10) which engages a cam 100 that is fixed on a short transverse shaft 101 and located centrally with respect to said block so that no twist or torque is applied to the arm 94 in the forward actuation of said arm and the punch 82 by said cam. Shaft 101 is journaled in suitable bearings provided in the base bracket 38 and has one end thereof projecting beyond the framework 28 and the casing (not shown) to which is secured a handle 102 for rotating said shaft and the cam 100. The shaft 101 is held against axial displacement in one direction by a collar 103 fixed on said shaft, and in the opposite direction by a stop-arm 104 also fixed on said shaft and hereinafter referred to (Figs. 1 to 3 and 12). The punch arm 94 is yieldingly urged rearwardly to its normal inoperative position, shown in Fig. 10, and the block 99 on said arm is held in engagement with the cam 100 by two coil extension springs 105 of equal tension and having corresponding ends thereof connected at 106 to opposite sides of the arm 94, and opposite ends connected at 107 (Fig. 1) to opposite sides of a vertically projecting rearwardly inclined bracket 108 (Figs. 1 and 2). This bracket 108 straddles the reflector bracket 48 and is bolted or otherwise suitably secured at its lower end to the base bracket 38.

It will thus appear that when the handle 102 is moved by the operator rearwardly or in a counter-clockwise direction, as viewed in Fig. 10, the punch 82, through like rotation of the cam 100 and engagement thereof with the block 99, will be swung forwardly or in a clockwise direction about its pivotal axis 72, from the position shown in Fig. 10, through the opening 81 in the stripper plate 63, through the die opening 74 in the die plate 62, and slightly beyond the latter plate to the position shown in Fig. 9.

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Under these conditions, a section or frame 90 will be cut or died-out from the film supply strip 80 disposed between the plates 62, 63, and moved through the die opening 74, beyond the plate 62, into the card aperture 26, and firmly pressed against the adhesive coated sheet 27 on the card 25, by the punch 82 in a single stroke of the latter.

The cam 100 is so formed and proportioned that the punch 82 will occupy the position shown in Fig. 9 and apply a pressure on the film section 90 just sufficient to cause the latter to firmly adhere to the adhesive sheet 27 on the card 25 when the peak of the high part of said cam is engaged with the block 99, said high part providing a short dwell and any further movement or overtravel of the cam will cause retraction of the punch. In this manner, excess pressure of the punch 82 on the film section 90 and possible damage to the film is avoided, and overstraining of the anvil plate 62, punch 82 and its various operating members is prevented.

In order to limit the movement of the handle 102 in the punch operating direction and to eliminate overtravel of the cam 100, the stop-arm 104 (Figs. 1 and 2) has threaded therein an adjustable stop-screw 109 which is arranged to engage an abutment 110 in the form of a bolt threaded into the base bracket 38. The stop-screw 109 is so adjusted that it will engage the abutment 110 just prior to movement of the high part of cam 100 out of engagement with the block 99. Although the dwell of the high part of cam 100 provides sufficient time for the punch 82 to apply and firmly press the film section 90 against the adhesive sheet 27 on the card 25, the described stop-means 109, 110 enables the operator to hold the punch in its film mounting position for any desired length of time.

When the cam 100 is rotated in a clockwise direction from the position shown in Fig. 9 to the position shown in Fig. 10 through return movement of the handle 102 by the operator, the cam block 99 abruptly moves into engagement with a flat low part of the cam 100, as shown in Fig. 10, under the action of the springs 105, whereupon the punch 82 is returned to its original position shown in said figure. This action of the cam block 99 is detected by the operator through the handle 102, whereupon the latter is released and is held in its released position by the frictional pressure of the cam block 99 on the cam 100. If desired, suitable stop-means associated with the shaft 101 or with the handle 102 may be employed to limit the return movement of said handle and hold it in position.

The leading end of the punch 82 is so located in a vertical plane with respect to the pivotal axis 72, 73, of said punch and said axis is so located in a vertical plane with respect to the card supporting surface of the anvil plate 61, that said end of the punch is parallel with said plate surface when the punch is in its full forward position shown in Fig. 9, whereby the marginal edges of the film section 90 will be firmly pressed against the adhesive sheet 27 at all points around the same.

It will be noted that by virtue of the hollow-ground cutting edges 76 on the die plate 62 the film sections 90 are cut from the supply strip 80 at all four sides by a shearing action which is augmented by the pivotal movement of the punch 82. In cutting a section from the supply strip with the pivoted punch, the shearing action begins at the opposite lower corners of said section and evenly progresses inwardly along the

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lower edge and upwardly along the side edges to the upper corners and inwardly along the upper edge. In shearing the sections from the supply strip only a very small area of the strip is acted on at any one moment, as compared to the usual punching action wherein the entire section is forced through a die opening by the punch and all the sides of said section are cut at one time. Shearing of the sections from the supply strip has the advantages in that it positively assures smooth clean-cut edges on the cut sections. The punch operates smoothly and with such ease that only a gradually increasing even pressure by the operator on the handle 102 is required to operate said punch to cut a section from the supply strip. The smooth action of the punch aids in controlling the movement of the cut sections through the die plate and into the apertures in the cards, whereby accurate mounting of said sections is assured.

It will also be noted that the relatively short lands at the ends of the hollow-ground cutting edges on the die plate 62 provide relatively short straight cutting edges which aid the punch in properly starting through the supply strip and in the formation of square corners on the cut sections. Cutting edges which are hollow-ground from end to end may, however, be employed in lieu of the cutting edges with the straight lands. Additionally, since the pivoted punch 82 effects a progressive shearing action in cutting the section along the opposite side edges thereof, the corresponding side cutting edges on the die plate 62 need not be hollow-ground, but hollow-grinding of said edges further eases the cutting action of the punch.

The novel apparatus thus far described, provides for selectively feeding the film supply strip 80 vertically or horizontally between the plates 62, 63 to cutting position, as shown in full lines and broken lines, respectively, in Fig. 5, so that the images or pictures on the sections 90 subsequently cut from said strip and mounted in the cards 25, as hereinbefore described, will always appear in the desired upright position. The vertical feed of the strip 80 will first be described and is accomplished by mechanism preferably constructed, mounted and operated as follows.

The film strip 80 is drawn from a supply roll 111 thereof which is wound on a reel 112 that is located at the rear of the apparatus and substantially in alignment with the optical system (Figs. 1 and 2). Reel 112 is rotatably carried by a laterally projecting pin 113 which is secured at one end thereof to a bracket 114 which, in turn, is removably secured, as by bolts 115, to the rear cross bar 35 of the framework 28 (Figs. 1, 2 and 13). Reel 112 is retained in proper axial position on pin 113 by a rubber or the like sleeve 116 which is removably engaged over the free end of said pin and frictionally grips the latter. Sleeve 116 is provided with a ring 117 having a projecting lug 118 to which may be attached a small chain or the like carried by the apparatus to prevent accidental loss of said sleeve.

The film strip 80 is drawn flatwise from the supply roll 111 upwardly and forwardly over a transversely extending idler roller 119 and threaded between cooperating transversely extending feed and pressure rollers 120 and 121, respectively, through a horizontally disposed funnel-shaped guide chute 122 (Figs. 1 to 4, 9 and 10). The idler roller 119 is journaled at its ends in suitable bearings provided in the bracket 108 at the rear of the base bracket 38. The guide

chute 122 is located centrally with respect to the die opening 74 in the plate 62 so that the strip 80 will be in accurate lateral register with said die opening when passed between the rollers 120 and 121 which are located in advance of the punch 82. The forward end of the guide chute 122 is located in close proximity to the bite of the rollers 120, 121 to properly direct the strip 80 between the same, and said guide chute is welded or otherwise suitably secured to a bracket 123 which is, in turn, bolted or otherwise suitably secured at its ends to the arms 68 and 69.

In order to provide increased feeding traction of the feed roller 120 on the film strip 80 and to avoid injuring said strip, said roller preferably consists of two narrow sleeves of soft rubber which are vulcanized or pressed in spaced relation on a metallic core (Figs. 3, 9 and 10). Other forms and types of feed rollers may, however, be employed to feed the strip. The feed roller 120 is fixed on a transversely extending shaft 124 which is journaled in suitable bearings provided in the arms 68, 69 adjacent the upper ends thereof. The feed roller 120 projects into the undercut portion 75 of the die plate 62 and is located centrally with respect to the guide chute 122 and the die opening 74 so that the strip 80 will properly enter between the plates 62, 63 and will always move along said plates in accurate lateral register with said die opening. The upper end of the plate 63 is disposed in close proximity to the feed roller 120 to further insure proper entry of the strip 80 between the plates 62, 63. One end of the feed roller shaft 124 projects beyond the casing (not shown) of the apparatus and has fixed thereon a knob 125 for turning said shaft and the feed roller 120. Axial displacement of the shaft 124 in opposite directions is prevented by collars 126 which are fixed on said shaft and engage the inner surfaces of the arms 68 and 69.

The companion pressure roller 121 is considerably smaller in diameter than the roller 120 and is located close to the die plate 62 to cause the film strip 80 to curve downwardly and follow the periphery of the roller 120. The roller 121 is journaled at its ends in suitable bearings provided in the arms 68 and 69 and is rotated by the roller 120 through frictional contact of the same therewith.

It will thus appear that when the film strip 80 is drawn from the supply reel 112 and initially threaded flatwise through the guide chute 122, the leading end of said strip will enter between the rollers 120, 121, and upon rotation of the roller 120 in the proper direction by means of the knob 125 the strip will travel downwardly around the roller 120 and pass between the plates 62, 63. Upon continued rotation of the roller 120, the strip 80 will be moved farther downwardly between and along the plates 62, 63, and will pass between the spacers 79 and across the die opening 74, as shown in full lines in Fig. 5, with the pictures or images on said strip accurately centered laterally with respect to said die opening. As the strip 80 thus passes over the die opening 74, light rays from the condenser lens 49 are projected through the hollow punch 82, said strip, said die opening and the opening 65 in the anvil plate 61 onto the mirror 54 and reflected by the latter onto the screen 56, whereupon the movement of the film strip and the successive pictures or images on said strip are visibly displayed on said screen. The op-

erator can thus observe the movement of the film strip, determine the location of the successive images or pictures on said strip with respect to the die opening 74, select desired images or pictures, stop the film strip when the image or picture is accurately centered vertically with respect to said die opening, and check the image or picture on the film section against the card in which it is to be mounted to see that the identifying data on said card corresponds to said image or picture.

It will be noted that the location of the rollers 120, 121 in advance of the punch 82 enables movement of the film strip 80 by said rollers back and forth to obtain accurate vertical centering of the picture or image with respect to the die opening 74, and further enables retraction of the strip by the rollers in the event of overtravel of any image or picture completely or partly beyond the die opening 74. In order to protect the film strip 80 from the heat generated by the illuminated lamp 46, a shield 127 (Fig. 1) of asbestos or the like insulating material is disposed between said lamp and the portion of the strip extending thereover. The shield 127 is suitably secured to the underside of a forwardly projecting plate 128 which is bolted or otherwise suitably secured at the rear thereof to the bracket 108. The apparatus is provided with the usual rotary blower fan (not shown) to direct a current of air past the lamp 46 for cooling purposes.

The horizontal feed of the film supply strip 80 will now be described and is effected by mechanism preferably constructed, mounted and operated as follows. Secured to the feed roller shaft 124 for rotation thereby and disposed exteriorly of the arm 69 is a bevel gear 129 which meshes with and drives a similar gear 130 that is secured to the upper end of a vertically extending shaft 131 the lower end of which projects through and beyond the base bracket 38 (Figs. 1, 2, and 3). Shaft 131 is journaled in suitable bearings provided in the bracket 38 and in a laterally projecting extension 132 of the arm 69. Secured to the lower projecting end of the shaft 131 is a bevel gear 133 which meshes with a similar gear 134 that is secured to one end of a shaft 135 which extends transversely of the bracket 38 beneath the latter and to the opposite side thereof. Shaft 135 is journaled in suitable bearings provided in spaced brackets 136 bolted or otherwise suitably secured to the underside of the bracket 38. Secured to the opposite end of the shaft 135 is a bevel gear 137 which meshes with a similar gear 138 that is secured to the lower end of a vertically extending shaft 139 which projects upwardly through the bracket 38 and alongside the arm 68. Shaft 139 is journaled in suitable bearings provided in the bracket 38 and in two vertically spaced laterally projecting extensions 140 of the arm 68. The extensions 140 are spaced equal distances from the horizontal center line of the die opening 74 in the plate 62.

Disposed between the extensions 140 of arm 68 and secured to the shaft 139 is a feed roller 141 (Figs. 2, 3 and 4) which is of the same size and construction as the feed roller 120 hereinbefore described, and is located centrally with respect to the die opening 74 in the plate 62. The feed roller 141 located as shown and described is in advance of the punch 82 and projects into the undercut portion 75 of the die plate 62 so that the film strip 80 fed thereby will

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properly enter between the plates 62, 63, the adjacent end of the plate 63 being disposed in close proximity to said roller for this purpose. It will thus appear that the feed roller 141 is also rotated by the knob 125 through the described driving connections therefor with the shaft 124.

Cooperating with the feed roller 141 to feed the film strip 80 is a smaller diameter pressure roller 142 (Fig. 4) which is journaled at the ends thereof in suitable bearings provided in the extensions 140 of the arm 68, and is driven by the roller 141 through frictional contact of the same therewith. The roller 142 is located relatively close to the die plate 62 to cause the strip 80 to curve inwardly and follow the periphery of the roller 141.

Bolted or otherwise suitably secured directly to the extensions 140 of the arm 68 and projecting rearwardly therefrom is a vertically disposed funnel-shaped guide chute 143 (Figs. 2, 3 and 4) which is located centrally with respect to the rollers 141, 142 so that the film strip 80 will be in accurate vertical register with the die opening 74 in the plate 62 when it enters between said rollers. The forward end of the guide chute 143 is located in close proximity to the bite of the rollers 141, 142 to properly direct the strip 80 between said rollers.

The reel 112 with the supply roll 111 of film thereon is disposed horizontally within a container 144 (Figs. 1 and 2) and engaged over a vertical pin 145. This container 144 and pin 145 are suitably secured to a bracket 146 which is arranged at one side of the film supply roll bracket 114 and is bolted to the rear cross bar 35 of the framework 28. The container 144 is shown in broken lines in Fig. 2 in order to clearly illustrate the pin 145 and bracket 146 and other elements of the film mounting apparatus. The horizontal feed of the film strip 80 is employed when the pictures or images are photographed on the film with their horizontal extending longitudinally of the film.

The film strip 80 is horizontally drawn edgewise from the supply roll 111 through a suitable vertical slot formed in the surrounding wall of the container 144. It will thus appear that when the strip 80 drawn from the supply roll 111 is initially threaded edgewise through the guide chute 43, the leading end of said strip will enter between the rollers 141, 142 in accurate vertical register with the die opening 74, and upon rotation of said rollers in the proper direction by the knob 125, the film strip will travel inwardly around the roller 141 and pass between the plates 62, 63. Upon continued rotation of the rollers 141, 142, the film strip will be advanced laterally between and along the plates 62, 63 in the direction of the arrow indicated in Fig. 5, and will pass between the spacers 79 and over the die opening 74, as shown in broken lines in Fig. 5, with the pictures or images on said strip in upright position and accurately centered vertically with respect to said die opening. As the strip 80 thus passes over the die opening 74, the movement of said strip and the pictures or images thereon are visibly displayed on the screen 56 in the manner hereinbefore described, whereby the operator may observe said images or pictures and stop the movement of the strip when an image or picture is accurately centered laterally with respect to the die opening 74.

It will be noted that the feed rollers 141, 142 are also located in advance of the punch 82, thus

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enabling movement of the film strip 80 by said rollers back and forth to obtain accurate centering of the picture or image with respect to the die opening 74, and enabling retraction of said strip by the rollers in the event of over-travel of any image or picture completely or partly beyond the die opening 74.

The operation of the apparatus will be readily understood from the foregoing description and may be briefly summarized as follows. Assuming that the lamp 46 has been illuminated, and that the film strip 80 has been drawn from the supply roll 111 and has been threaded either vertically or horizontally through the guide chute 122 or 143, respectively and between the rollers 120, 121, or 141, 142, respectively. Also, assuming that the card stops 83 and 85 have been properly adjusted to accurately locate the cards 25 in film mounting position. The operator, observing the screen 56, then advances the film strip 80, by turning the knob 125, between the plates 62, 63 and between the spacers 79 and over the die opening 74 until the first image or picture on said strip appears on said screen and is in accurate register with said die opening as indicated on the screen at which time the movement of the film strip is stopped. In the event the image or picture is advanced too far, the film strip may be retracted to bring said image or picture into accurate register by simply turning the knob 125 in the opposite direction.

The operator, having observed the subject of the projected image or picture and having checked it with the identifying data on the card 25 in which it is to be mounted, then inserts said card edgewise between the plates 61 and 62 at the upper ends thereof and moves it downwardly and laterally until the leading longitudinal edge and the one side edge of the card engage the stops 83 and 85, respectively. The card 25 will then occupy the position shown in Figs. 6 and 10, wherein it will be noted that the aperture 26 in said card is in accurate alignment with the die opening 74, and that the open end of said aperture and the adhesive coated surface of the sheet 27 face the punch 82. The plates 61 and 62 have aligned portions removed at the upper left-hand ends thereof as indicated at 147 in Figs. 3, 4 and 6 to facilitate insertion, removal, and positioning of the cards 25. The cards 25 are stacked beside the apparatus and usually arranged in the same order as the pictures or images on the film strip 80 to expedite mounting of the film sections therein. It will be understood that when blank cards are employed, checking of the pictures or images against the cards is not required and, hence, said cards may be inserted between plates 61 and 62 and located in film mounting position prior to movement of the film strip 80 and location of the pictures or images thereon in register with the die opening 74.

After the picture or image on the film strip 80 is accurately registered with the die opening 74 and the card 25 is inserted between the plates 61 and 62 and engaged with the stops 83 and 84 as previously described, the operator pulls the handle 102 rearwardly from the position shown in Fig. 10 to the position shown in Fig. 9 determined by engagement of the stop 109 with the abutment 110, thus actuating the punch 82 in a forward direction from the position shown in Fig. 10 to the position shown in Fig. 9, whereupon the section 90 bearing the

projected image or picture is died-out from the strip 80, moved through the die opening 74, into the aperture 26 in the card 25 and pressed against the adhesive coated sheet 27 on said card by the punch 82. The operator then moves the handle 102 forwardly to its original position detected by engagement of the cam block 99 with the low part of the cam 100, whereupon the punch 82 is returned to its original position rearwardly beyond the stripper plate 63, as shown in Fig. 10, at which time the film strip 80 is stripped from said punch by said plate for further movement. The operator then removes the finished card 25, shown in Fig. 16, with the film section 90 mounted therein from between the plates 62, 63, and thereafter repeats the described operations for mounting the next or succeeding picture or image bearing film section 90 in another card 25. As the mounting of the successive film sections 90 in successive cards 25 proceeds, the punched out or unused portion of the film strip 80 is directed forwardly into an open space within the framework 28 by the curved lower end portion 77 of the stripper plate 63 when the vertical feed of said strip is employed, and is directed laterally exteriorly of the casing of the apparatus through a suitable vertical slot in said casing when the horizontal feed of the film strip 80 is employed.

It will be apparent from the foregoing description that by relocating the card stops 83 and 85 the died-out film sections 90 may be mounted in apertures in different locations on the cards 25. Additionally, by varying the size and shape of the punch 82 and correspondingly varying the size and shape of the die opening 74, film sections of various sizes and shapes may be mounted in cards having apertures therein of such different shape and size. Further, instead of cutting out or removing only a section of the film, as herein shown and described, the entire strip may be consumed, such as would be the case when said strip and the aperture in the card are of the same width.

It will also be apparent that the described apparatus may also be effectively employed for cutting and mounting other thin transparent or translucent record bearing sections, as well as thin opaque sections and thin transparent or translucent blank sections in the apertured record cards and other cards and card-like structures.

It is also important to note that all of the essential elements for feeding the supply strip, for cutting the sections from said strip, and for mounting said sections in the apertured cards, are carried by the base bracket 36. Hence, this base bracket unit alone will provide an effective and materially simplified mounter divorced from the remaining structure of the illustrated apparatus. When so used, the base bracket unit is reversed, i. e. turned 180° so that the projecting lens end of said unit faces the operator, and the projecting lens is removed from said unit so that the operator may observe the illuminated film supply strip or other transparent or translucent record bearing strip through the opening for said lens in the base bracket.

The prepared cards 25, as shown in Figs. 14, 15, and hereinbefore described, are supplied in quantities to users thereof, and in order to protect the adhesive coated sheets 27 until the cards are used and during handling of the same prior to mounting of the film or other sections therein, a relatively thin protective cover sheet, such as a

sheet of glassine paper, is disposed within the card aperture 26 and removably applied to the adhesive coated sheet 27. This protective cover sheet must be removed from each card before the film or other section can be mounted therein.

In order to expedite the mounting of the film sections in the cards 25, as hereinbefore described, the novel film mounting apparatus has incorporated therein stripper mechanism, indicated generally at 150, for stripping the protective cover sheet from each card just prior to the mounting of the film section therein. This cover sheet stripping mechanism, however, forms no part of the present invention and, hence, it is believed to be unnecessary to illustrate and describe all of the details thereof. Briefly, said mechanism comprises two longitudinally extending upright plates 151 (Fig. 1) which are secured together in spaced parallel relation and are suitably carried by the framework 28 adjacent the top and one side thereof. These plates 151 are formed with aligned openings 152 and are located in longitudinal alignment with a vertically extending slot 153 (Fig. 2) which is formed in the screen supporting frame 58. The card 25 is edge-wise inserted between the plates 151 through the slot 153 with one of its side edges leading and stopped with the aperture 26 therein in accurate register with the openings 152 in said plates.

Disposed at opposite sides of the plates 151 and located in alignment with the openings 152 in said plates are two opposed stripper fingers 154 and 155 (Figs. 1 and 2). These fingers 154 and 155 are mounted on a shaft 156 for relative pivotal movement toward and away from each other and also for pivotal movement together as a unit inwardly beyond the plates 151 toward the center of the apparatus. These pivotal movements of the fingers 154, 155 is effected by suitable operating means including an arm 157 operatively connected to shaft 156, and a rod 158 pivotally connected to said arm and extending rearwardly therefrom through and beyond the screen supporting frame 58 and provided with an operating knob 159.

The fingers 154 and 155 normally occupy the positions shown in broken lines in Fig. 2. The operation of the fingers 154, 155 is such that when the rod 158 is pushed or moved forwardly by the operator, the finger 154 is first caused to move inwardly toward the finger 155 and into engagement with the protective cover sheet on the inserted card 25, whereupon said cover sheet will be gripped by and between the fingers 154 and 155. Upon continued forward movement of the rod 158, the finger 154 will be moved farther inwardly through the openings 152 in the plates 151 and beyond the latter, and the finger 155 will also be moved inwardly away from said plates, thus stripping the cover sheet gripped by and between said fingers from the card 25. When the rod 158 is then released or pulled rearwardly by the operator, the finger 154 is first caused to move outwardly away from the finger 155 to permit the stripped cover sheet to drop from said fingers onto an inclined trough 160 which directs said cover sheet into a waste receptacle 161. The fingers 154, 155 then return to their normal positions shown in broken lines in Fig. 2, and the card 25 is then withdrawn from between the plates 151 and is ready to receive the film section therein, as hereinbefore described. The trough 160 and the receptacle 161 are suitably carried by the framework 28.

Although only one embodiment of the present

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invention has been illustrated in the accompanying drawings and described in the foregoing specification, it is to be understood that said invention is not limited to said embodiment or to the particular type of insert and card disclosed. Various changes may be made therein, particularly in the design and arrangement of the parts illustrated without departing from the spirit and scope of the invention as will now be clear to those skilled in the art.

What is claimed is:

1. In apparatus for cutting from a record supply strip longitudinally spaced record bearing sections and mounting said sections in apertures in cards, a planar die member having a portion undercut at one side thereof and having a die opening extending therethrough and registering with said undercut portion, rotary means disposed above said die opening for feeding said strip downwardly along said undercut portion and across the die opening and for bringing said record bearing sections successively into registry with said die opening, said rotary means extending into said undercut portion and being spaced from the adjacent surface of said die member a distance substantially equal to the thickness of said strip, said rotary means being capable of rotation in opposite directions to impart a back and forth movement to the fed strip relative to said die opening, means for rotating said rotary means at will to feed said strip and to impart said back and forth movements thereto, means for supporting a card in close proximity to the opposite side of said die member and with the aperture in said card aligned with said die opening, and pivoted punch means operable independently of said rotary means and cooperating with said die opening for cutting a record bearing section from said strip and moving said section through said die opening into the aperture in said card.

2. In apparatus for cutting from a record supply strip longitudinally spaced record bearing sections and mounting said sections in apertures in cards having an adhesive coated sheet on a surface thereof and overlapping the aperture therein, a planar die member having a portion undercut at one side thereof and having a die opening extending therethrough and registering with said undercut portion, rotary means disposed above said die opening for feeding said strip downwardly along said undercut portion and across the die opening and for bringing said record bearing sections successively into registry with said die opening, said rotary means extending into said undercut portion and being spaced from the adjacent surface of said die member a distance substantially equal to the thickness of said strip, said rotary means being capable of rotation in opposite directions to impart a back and forth movement to the fed strip relative to said die opening, means for rotating said rotary means at will to feed said strip and to impart said back and forth movements thereto, means for supporting a card in close proximity to the opposite side of said die member and with the aperture in said card aligned with said die opening, and pivoted punch means operable independently of said rotary means and cooperating with said die opening for cutting a record bearing section from said strip and pressing said section through said die opening into the aperture in said card and against the adhesive sheet thereon.

3. In apparatus of the class described, a verti-

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cally extending die member having a plane surface and a die opening therein, a reciprocal punch cooperating with said die opening for cutting sections from a strip of material, and means for feeding said strip along said surface and across said die opening into operative relation with said punch, said means comprising a transversely extending lower feed roller disposed intermediate said die opening and the upper extremity of said die member and spaced from said surface a distance substantially equal to the thickness of said strip, and a smaller diameter upper pressure roller engaged with said feed roller, said pressure roller having its axis located forwardly of the axis of said feed roller a distance less than the radius of said feed roller, whereby said strip is caused to pass downwardly around said feed roller between the latter and said die member.

4. In apparatus of the class described, a vertically extending die member having a plane surface and a die opening therein, a reciprocal punch cooperating with said die opening for cutting sections from a strip of material, and means for feeding said strip along said surface and across said die opening into operative relation with said punch, said means comprising a vertically extending feed roller disposed intermediate said die opening and the adjacent side edge of said die member and spaced from said surface a distance substantially equal to the thickness of said strip, and a smaller diameter pressure roller engaged with said feed roller, said pressure roller having its axis located forwardly of the axis of said feed roller a distance less than the radius of said feed roller, whereby said strip is caused to pass inwardly around said feed roller between the latter and said die member.

5. In apparatus for cutting sections from a supply strip and mounting said sections in apertures in cards having an adhesive coated sheet on a surface thereof and overlapping the aperture therein, a planar die member having a portion undercut at one side thereof and having a die opening extending therethrough and registering with said undercut portion, a reciprocal punch arranged at said side of said die member and cooperating with said die opening, rotary means arranged intermediate said die opening and the adjacent side edge of said die member for advancing said strip transversely of said die member into operative relation with said die opening and said punch, said rotary means extending into said undercut portion and being spaced from the adjacent surface of said die member a distance substantially equal to the thickness of said strip, means for rotating said rotary means, means arranged at the opposite side of said die member for supporting a card with the aperture therein aligned with said die opening, and means for operating said punch independently of said rotary means, to cut a section from said strip and press said section through said die opening into the aperture in said card and against the adhesive coated sheet thereon.

6. In apparatus for cutting from a film supply strip longitudinally spaced image bearing sections and mounting said sections in apertures in cards, a die member having a die opening therein, a projector comprising a source of light and a condensing lens arranged at one side of said die member and in alignment with said die opening, a reciprocal hollow punch arranged between said die member and said condensing lens and cooperating with said die opening, rotary means

for feeding said film supply strip between said punch and said die member and for bringing said image bearing sections successively into registry with said die opening, said projector operating to project rays of light through said punch, said film supply strip and said die opening onto a screen whereby the image bearing section to be cut from said strip and the registration of said section with said die opening may be observed and determined, means including a backing member arranged at the opposite side of and in spaced parallel relation with said die member for supporting a card with the aperture therein aligned with said die opening, said backing member having an opening therein aligned with said die opening to permit transmission of said light rays therethrough, and means for operating said punch to cut the registered image bearing section from said strip and press said section through said die opening into the aperture in said card.

7. In apparatus for cutting from a film supply strip longitudinally spaced image bearing sections and mounting said sections in apertures in cards, a die member having a die opening therein, a projector comprising a light source and a condensing lens arranged at one side of said die member and aligned with said die opening and a projecting lens arranged at the opposite side of said die member and aligned with said die opening and said condensing lens, a reciprocal hollow punch arranged between said die member and said condensing lens and cooperating with said die opening, rotary means for feeding said film supply strip between said punch and said die member and for bringing said image bearing sections successively into registry with said die opening, means including a backing member arranged between said projecting lens and said die member in spaced parallel relation with the latter for supporting a card with the aperture therein aligned with said die opening, said backing member having an opening therein aligned with said die opening, a projection screen, said projector operating to project the portion of said film supply strip extending across said die opening onto said screen whereby the image bearing section to be cut from said strip and the registration of said section with said die opening may be observed and determined, a light reflecting element disposed in the optical path of said projecting lens for receiving the said projected film strip portion therefrom and reflecting the same onto said screen, and means for operating said punch to cut the registered image bearing section from said strip and press said section through said die opening into the aperture in said card.

8. In apparatus for cutting sections from a supply strip and mounting said sections in apertures in cards, a die plate having a die opening therein, rotary means for feeding said supply strip along said die plate at one side thereof and across said die opening, a backing plate disposed at the opposite side of said die plate in spaced parallel relation therewith to receive a card edgewise between the same and said die plate, eccentric card engaging stop means dis-

posed between said plates and adjustably carried by one of the latter for locating said card with the aperture therein aligned with said die opening, and a reciprocal punch cooperating with said die opening for cutting a section from said strip and moving said section through said die opening into the aperture in said card.

9. Apparatus as defined in claim 8 wherein said eccentric card engaging stop means comprises an eccentric disk engageable by a side edge of the card, and at least two spaced eccentric disks engageable by a longitudinal edge of said card, said disks being rotatably mounted on concentric screw threaded members threaded into said backing plate and adapted to clamp said disks to said latter plate in adjusted position.

10. In combination, two planar members disposed in spaced parallel relation adapted to receive therebetween a card having an aperture therein, said members having aligned openings therein, a plurality of adjustable eccentric card stops disposed between said members and spaced transversely thereof for locating said card with the aperture therein vertically registering with said openings, and an adjustable eccentric card stop disposed between said members inwardly of a side edge thereof for locating said card with the aperture therein laterally registering with said openings.

11. In combination, two planar members disposed in spaced parallel relation adapted to receive therebetween a card having an aperture therein, said members having aligned openings therein, a plurality of eccentric disks disposed between said members and spaced transversely thereof for locating said card with the aperture therein vertically registering with said openings, an eccentric disk disposed between said members inwardly of a side thereof for locating said card with the aperture therein laterally registering with said openings, and concentric elements carried by one of said members for adjustably supporting said disks and for clamping the latter against the said one member in adjusted positions.

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