May 3, 1955 E. H. DREHER ET AL 2,707,545

CARD HOLDING PLATEN

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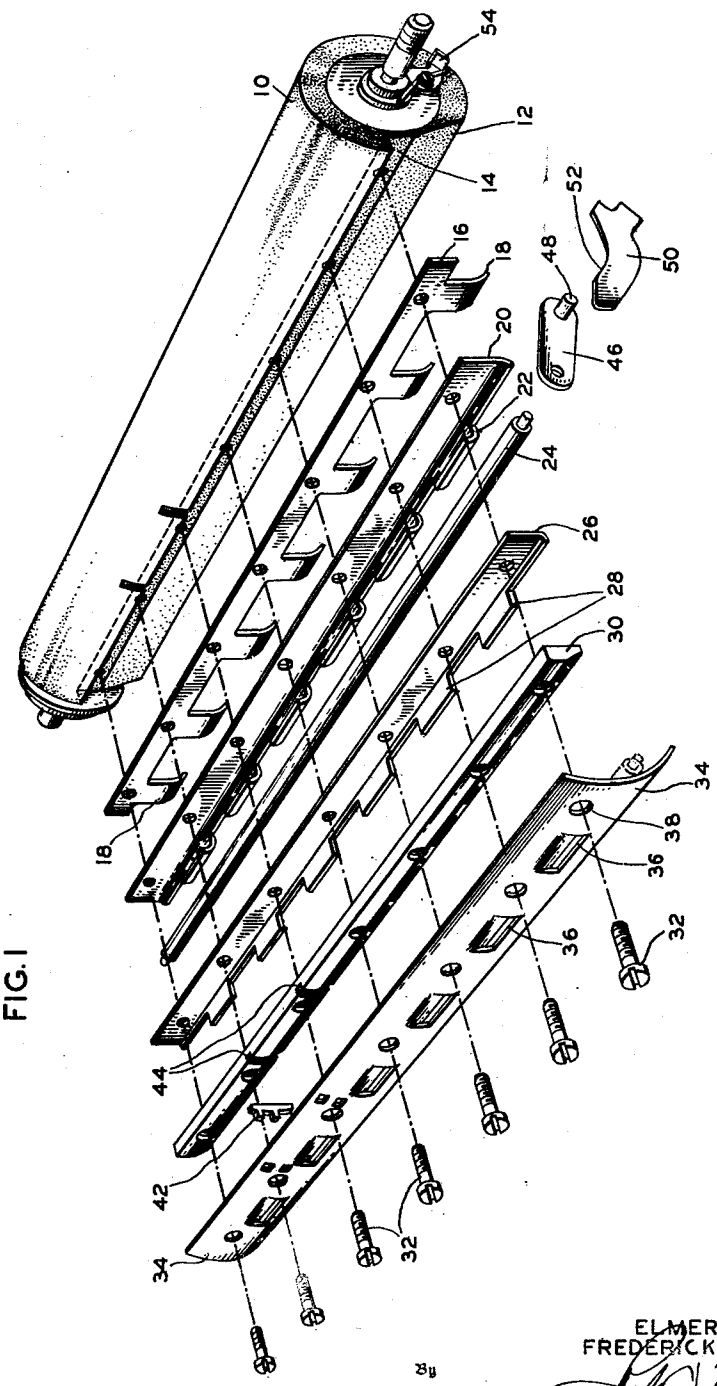


FIG. 1

Inventor
ELMER H. DREHER
FREDERICK W. SCHREMP

By

Attorney

May 3, 1955 E. H. DREHER ET AL 2,707,545

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FIG. 2

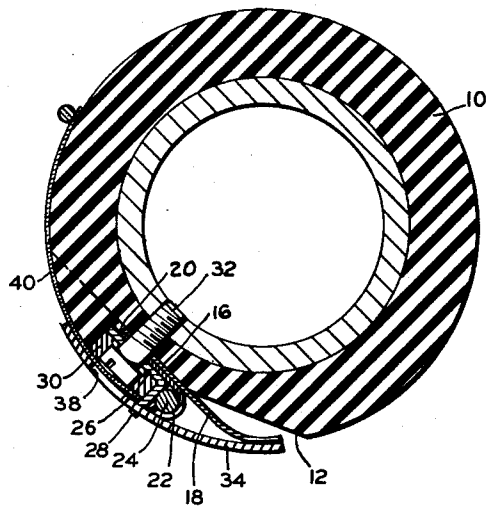


FIG. 3

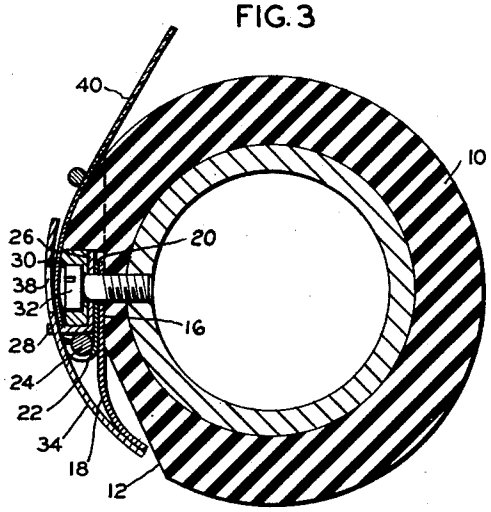


FIG. 4

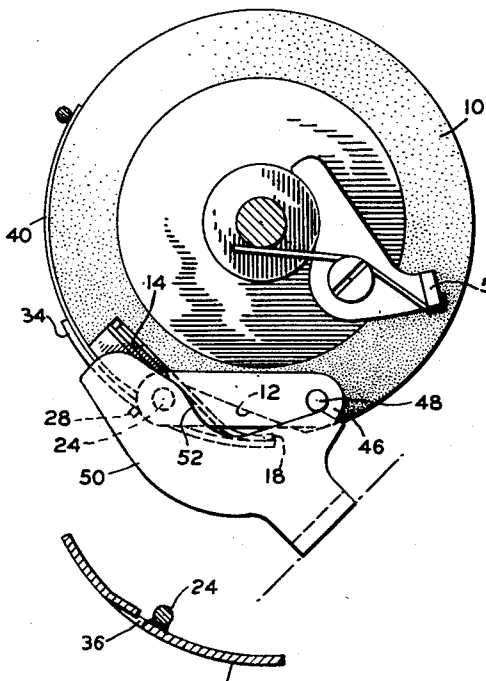
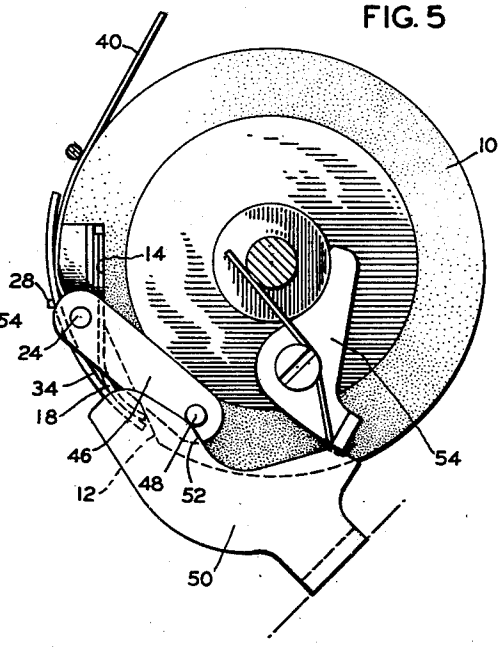


FIG. 6

FIG. 5



Inventor

ELMER H. DREHER

FREDERICH W. SCHREMP

By

Attorney

May 3, 1955 E. H. DREHER ET AL 2,707,545

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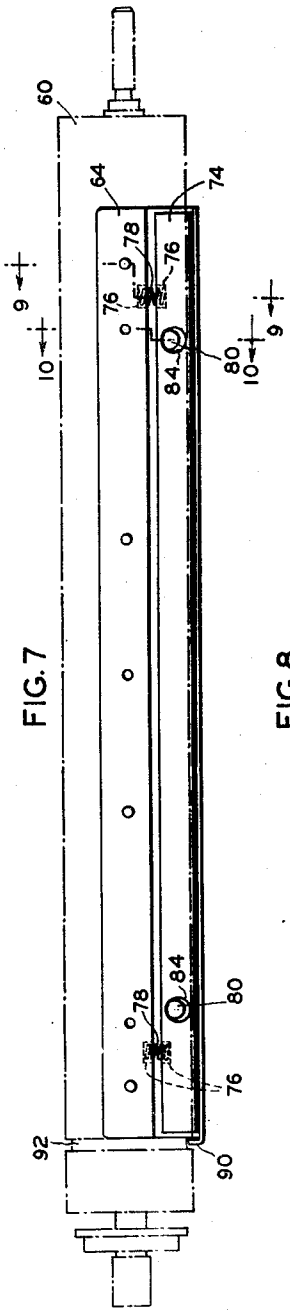


FIG. 7

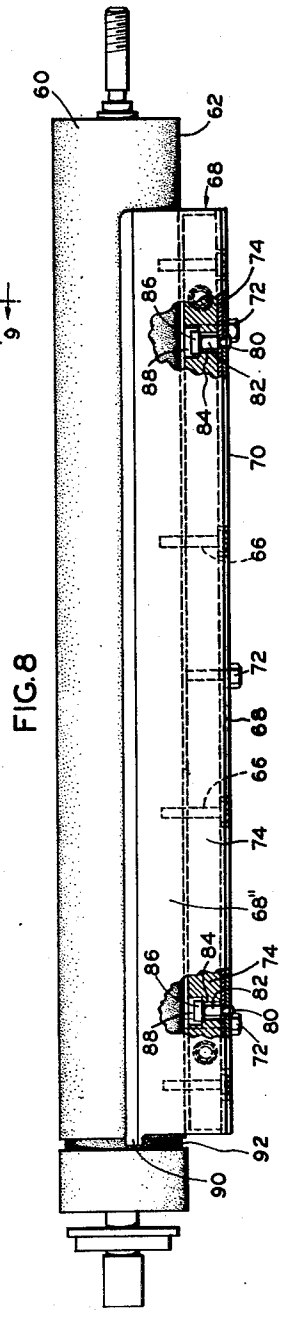


FIG. 8

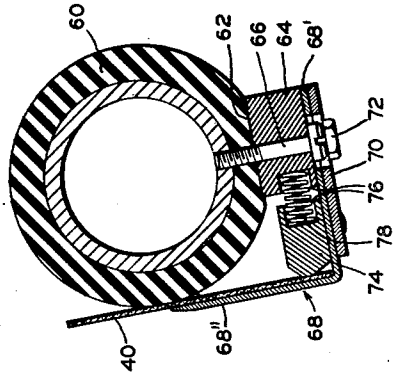


FIG. 9

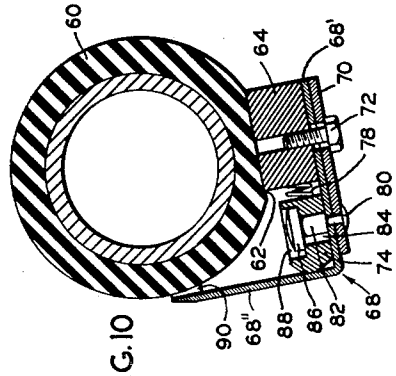


FIG. 10

Inventor
ELMER H. DREHER
FREDERICK W. SCHREMP
By
Attorney

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2,707,545

CARD HOLDING PLATEN

Elmer H. Dreher, East Norwalk, and Frederick W. Schremp, Stamford, Conn., assignors to Remington Rand Inc., New York, N. Y., a corporation of Delaware

Application February 27, 1951, Serial No. 212,978

5 Claims. (Cl. 197—136)

This invention relates generally to typewriting machine platens and in particular to a platen having card registering and holding means thereon in which cards may be accurately positioned relative to the machine printing line.

The invention is primarily adapted for use in the preparation of low cost publications such as directories, part lists and the like, by means of Photolith reproduction. The cards are prepared by conventional typewriters and are arranged to receive one or more lines of typed data thereon. Prior to photographing, said cards are assembled in composite relation to resemble pages of printed matter.

To achieve the perfect margins commonly associated with printed matter, each card has thereon guide means which assist the typist in positioning said card on the typewriter platen. The cards are skillfully manufactured to produce exacting duplication of the marginal space between the guide means and the edges of the card, therefore, maintenance of the accurate marginal space relies upon the ability of the typist to visually position the card guide means in alignment with the machine printing line. Obviously, each card cannot be manually placed on the platen in exact duplication of the previous card position, therefore alignment errors even though measurable in thousandths of an inch, result therefrom.

The present invention eliminates card placement errors and provides a positive means whereby successive cards may be repetitiously positioned with accuracy on the platen. Essentially, the invention consists of a platen having a milled planar peripheral portion along which a support bar is longitudinally disposed. Secured to the support bar is a guide strip which acts to position a card placed thereon in horizontal alignment with the platen. Further, the guide strips holds the portion of the card that will receive printing matter in contact with the periphery of the platen. Disposition of a card on the guide strip is determined by a stop thereon which engages the left-hand vertical card edge. The guide strip effectively registers a card positioned thereon in alignment with the axis of the platen and the left-hand stop insures vertical registration thereof. Displaceable spring means are provided to retain the card in registering relation on the platen.

Therefore, cards prepared in a typewriter with the present invention will have the data typed thereon universally disposed relative to the vertical and horizontal edges of the card. Each card is micrometrically accurate, therefore, when assembled as pages, the lines of typed data are in horizontal alignment and the vertical left-hand margin is common to all lines. Obviously, if the data is disposed in columnar relation, the vertical alignment of such columns is readily maintained.

Publications prepared by the above apparatus are indistinguishable from those published by the conventional, relatively expensive printer's type.

In the drawing:

Fig. 1 is an exploded perspective view of a platen and the elements constituting one embodiment of the invention.

Fig. 2 is a cross section through the platen shown in Fig. 1 with the parts assembled and a card disposed therein in type-receiving position.

Fig. 3 is a sectional view of the invention with spring means depressed to facilitate the insertion or removal of the card.

Fig. 4 is a side elevational view of the pressure plate tension controlling mechanism in card clamping position.

Fig. 5 is a side elevational view of the pressure plate tension controlling mechanism operative to depress the spring means and release the card.

Fig. 6 is a sectional view of the pressure plate with the pivot pin secured thereon.

Fig. 7 is a plan view of a further embodiment of the invention.

Fig. 8 is a front elevational view of the embodiment shown in Fig. 7 with sections cut away to illustrate the spring-loaded pressure bar mounting means.

Fig. 9 is a cross section taken on line 9—9 of Fig. 7 with the view rotated ninety degrees from the position shown in Fig. 7.

Fig. 10 is a cross section taken on line 10—10 of Fig. 7 also having the position of the view changed in a manner similar to Fig. 9.

Referring to Figs. 1, 2 and 3, the invention is shown mounted on a platen 10 having a peripheral portion 12 milled flat throughout the length thereof and a groove 14 recessed longitudinally in flat portion 12. Abutting against one side of the V-shaped groove 14 is a spring plate 16 having a plurality of resilient arms 18 extending outwardly therefrom. A hinge plate 20 is similarly disposed in groove 14 and has at the outer terminal thereof pin supporting arms 22 which are curved to receive hinge pin 24 thereon. A card stop plate 26 is disposed on hinge plate 20 and card stop projections 28 thereon coact with arms 22 to complete the bearing support for hinge pin 24. A retaining bar 30 is positioned on card stop plate 26 and by means of screws 32, bar 30 retains the above elements in assembled relation and secured to platen 10. An arcuate pressure plate 34 having spaced slots 36 and apertures 38 therein is secured to hinge pin 24 and adapted for limited pivoting therewith. The apertures 38 are provided to permit access to mounting screws 32 while slots 36 receive card stop projections 28 therein. As shown in Figs. 2 and 3, a substantial portion of pressure plate 34 abuts against the periphery of platen 10 and conforms to the curvature thereof. The lowermost portion of plate 34 contacts spring arms 18 and is urged outwardly thereby to dispose the upper portion of said pressure plate on platen 10. Thus, inwardly exerted pressure on the lower portion of plate 34 will depress spring arms 18 and pivot the upper portion of plate 34 away from the platen periphery. When in this open position, cards 40 may be inserted between the platen and the pressure plate and disposed downwardly until arrested by stop projections 28 which horizontally align the lower margin of card 40 thereon. Vertical stop members 42 secured in true vertical relation on the inner surface of pressure plate 34 are arranged to reside in complemental slots 44 formed in retaining bar 30 thereby providing side marginal stops for lengthwise positioning of card 40 on the platen.

Platens not embodying the present invention are conventionally capable of unrestricted rotation in typewriting machines. In typewriters utilizing the present invention, such unrestricted platen rotation is neither necessary nor desirable. While it has not been shown, platen 10 has a restricted degree of rotation with one limit thereof being established to present the type-receiving

portion of card 40 in register with the machine printing line.

Means are also provided whereby a reverse rotation of platen 10 will effect an opening of the pressure plate away from the platen for the insertion and removal of cards 40. Pivot pin 24, Figs. 4 and 5, has secured on each terminal thereof, an arm 46, which has a stud 48 secured to the other end thereof and projecting outwardly therefrom. A camming member 50 having a camming surface 52 thereon is secured to the typewriter carriage, not shown, and engages stud 48 on arm 46. The camming surface 52 consists of a high dwell and a low dwell. Stud 48 when riding on the high dwell cams arm 46 counterclockwise to depress spring arms 18 and pivots pressure plate 34 to the open position. A counter-rotative movement of platen 10 permits stud 48 to ride into the low dwell of camming member 50 thereby permitting spring arms 18 to urge pressure plate 34 into the relative card holding position.

While only one arm 46 and a single cooperating camming member 50 has been shown in the drawings, both terminals of pivot pin 24 have like elements thereon to prevent twists and strains which would obviously be present in pin 24 should but a single arm 46 be employed.

A stop member 54, adjustably secured to platen 10, limits rotation thereof to a fixed degree which is sufficient to permit the opening and closing of the said pressure plate.

A further embodiment of the invention resides in Figs. 7, 8, 9 and 10, in which a platen 60 is shown having a longitudinal flat peripheral portion 62. Disposed on flat portion 62 is a mounting plate 64 which is secured to platen 60 by means of screws 66. An L-shaped guide member 68 has the leg 68' thereof adjustably secured to mounting plate 64 by means of a locking plate 70. Plate 70 is affixed to mounting plate 64 by spaced screws 72 engaging suitably threaded apertures therein. Leg 68'' of member 68 is disposed tangentially to and spaced from the periphery of platen 60 with the spacing therebetween being substantially that of the thickness of card 40. A pressure bar 74 is slidably mounted on leg 68' of member 68 and disposed in front of mounting plate 64. Formed in both plate 64 and bar 74 are plural complemental bores 76 in which springs 78 are compressed. Springs 78 urge bar 74 away from mounting plate 64 and into engagement with leg 68'' of member 68. The pressure bar is slidably mounted by means of studs 80 which are riveted to leg 68' and locking plate 70. The upwardly extending shanks 82 of studs 80 are disposed in apertures 84 provided in bar 74. The heads 86 of the studs are of greater diameter than apertures 84 and reside in relatively larger apertures 88. Thus, studs 80 retain bar 74 on leg 68' of member 68 while still permitting limited sliding movement. A card 40 disposed between platen 60 and arm 68'' is moved downward until the lower edge thereof engages the tapered face of bar 74. Continued pressure on the card displaces bar 74 rearwardly against the tension of springs 78 permitting card 40 to descend until arrested by arm 68'. Bar 74 exerts pressure on card 40 and locks said card against accidental movement. Arm 68' horizontally aligns the card and the specified printing line thereon, with the machine typing means. On the left-hand margin of arm 68'' there is provided a rearwardly extending projection 90, the terminal of which is disposed in an annular groove 92 recessed in platen 60. The projection, therefore, effectively establishes a marginal stop with which card 40 may be longitudinally positioned on arm 68' of guide member 68.

A camming mechanism, not shown, may be employed to retract pressure bar 74 in a manner analogous to that heretofore described and thus facilitate the insertion and removal of cards 40.

The invention claimed is:

1. In a typewriting machine, a platen having card holding means mounted thereon, said means comprising a card supporting plate having projections extending outwardly therefrom, an arcuate pressure plate having slots disposed laterally therein receiving said projections, a hinge pin secured to said pressure plate, a hinge plate arranged to support said pin thereon, a spring plate having spring means bearing against the margin of said pressure plate below said slots and a mounting bar; screw means securing said bar, card supporting plate, hinge plate and spring plate in assembled relation on said platen, said projections arranged to retain the hinge pin on the hinge plate and support a card disposed thereon in horizontal alignment and said spring means on said spring plate being arranged to pivotally urge the upper edge of said pressure plate to press a card against the platen.

2. The combination set forth in claim 1, wherein a vertical margin guide is secured to the inner surface of the pressure plate.

3. The combination set forth in claim 1, including also a movable carriage in which said platen is journalled, said carriage having fixed camming members, stop means cooperating with said camming members for limiting the rotation of said platen, and means cooperating with said camming members for pivoting said pressure plate, said pivoting means comprising arms secured at one end to the terminals of said hinge pin and engaged at the other end with said camming members whereby partial rotation of said plate forces said engaged ends of said arms along said camming members and thereby pivots said pressure plate against said spring means and moves the upper edge of said pressure plate away from said platen for card insertion and removal.

4. The combination set forth in claim 3, said stop means comprising members attached to the ends of said platen having outwardly bent ears engaging with a stop portion of said camming members at a predetermined point in the rotation of said platen.

5. In a typewriting machine, a platen having a planar peripheral portion laterally thereon, a recess formed along a lateral edge thereof, card holding means disposed in said recess and secured to the platen, said means comprising a spring plate having resilient arms dependent therefrom, a hinge plate disposed adjacent to said spring plate and having outwardly extending arcuate projections, a hinge pin journalled on said arcuate projections, a card supporting plate having right angularly disposed linear projections which retain said hinge pin on said hinge plate, a pressure plate secured to said hinge pin and arranged to overlie a portion of the platen periphery, said pressure plate pivotal against the tension of said resilient arms to permit the positioning of a card on said linear projections in horizontal alignment therewith, and a margin stop secured to said pressure plate for laterally positioning said card on said linear projections.

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