Oct. 31, 1950

P. L. COLE

2,527,532

CARD ALIGNING DEVICE

Filed March 28, 1946

4 Sheets-Sheet 1

Fig. 1

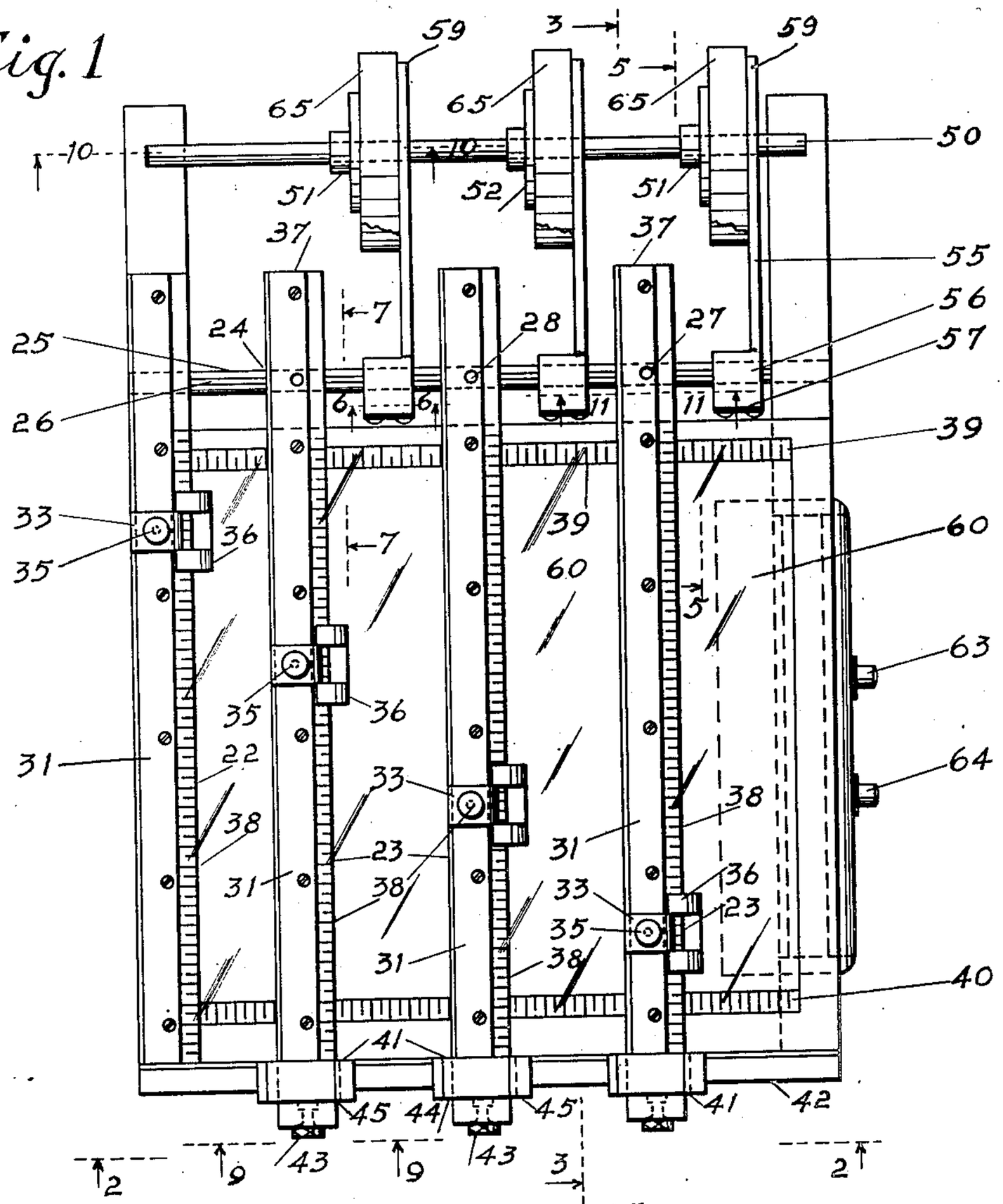


Fig 2

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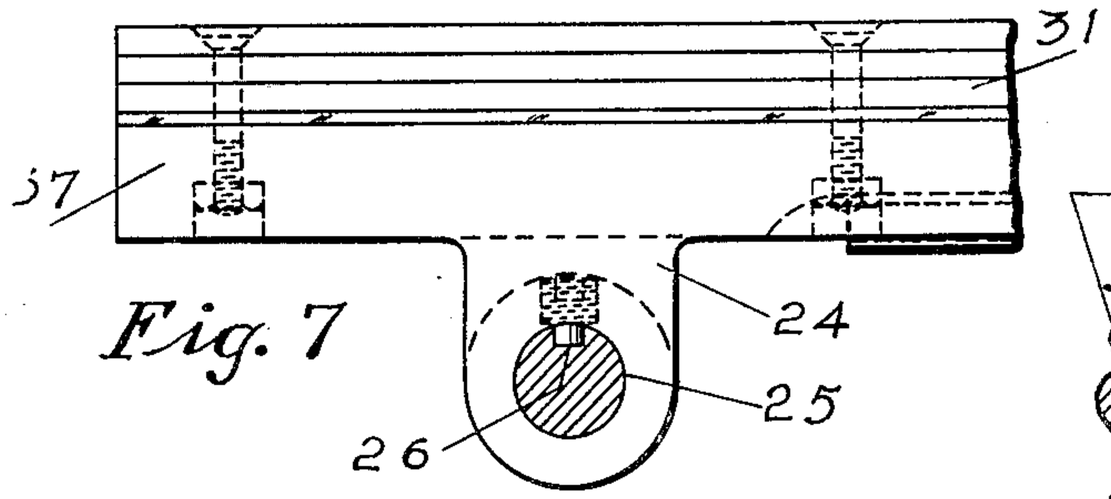


Fig. 7

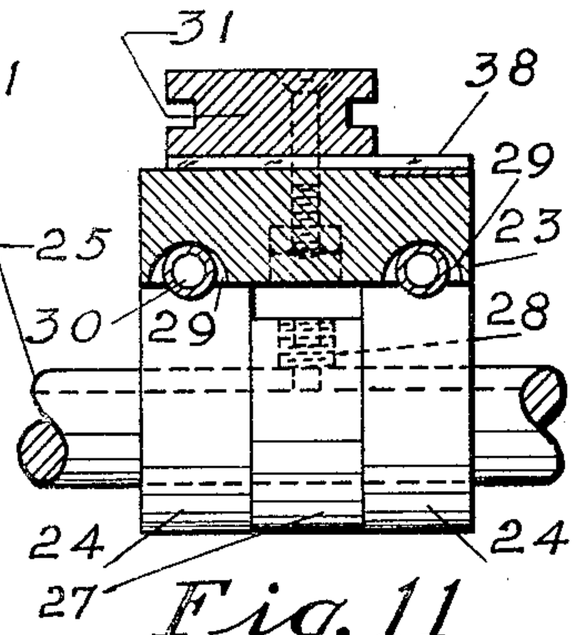


Fig. 11

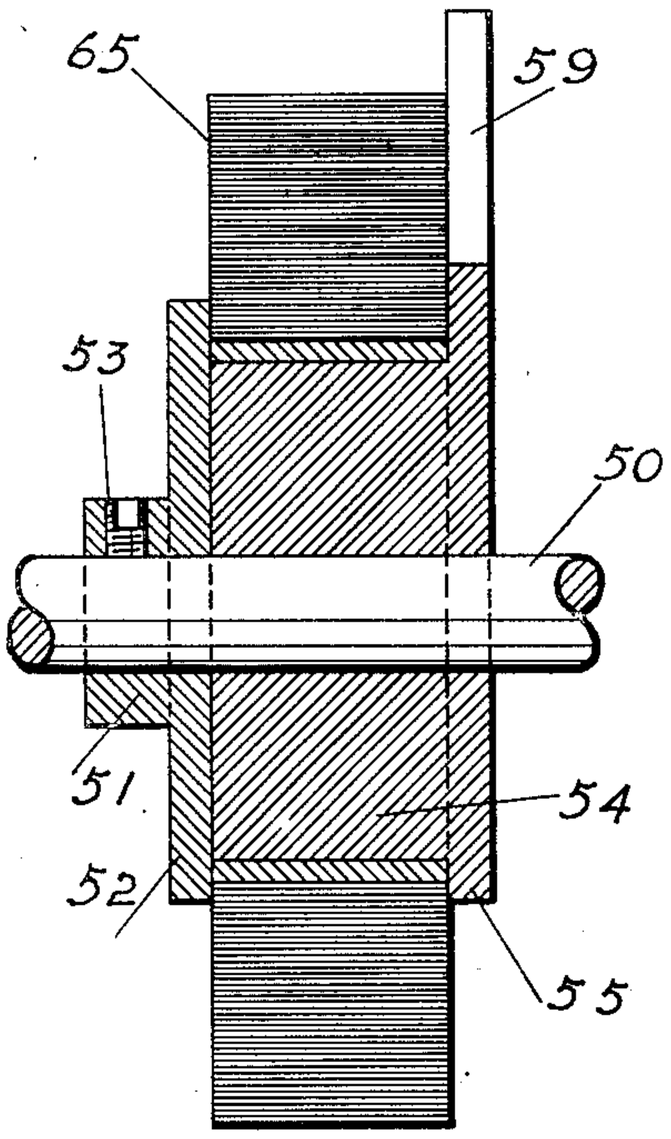


Fig. 10

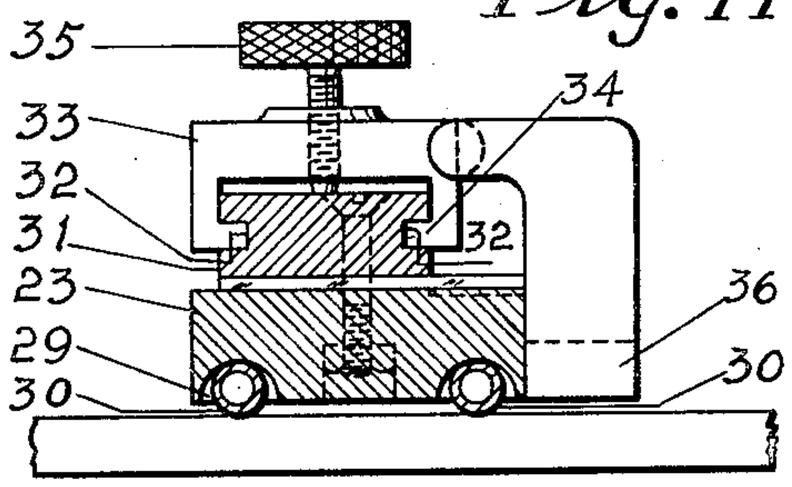


Fig. 8.

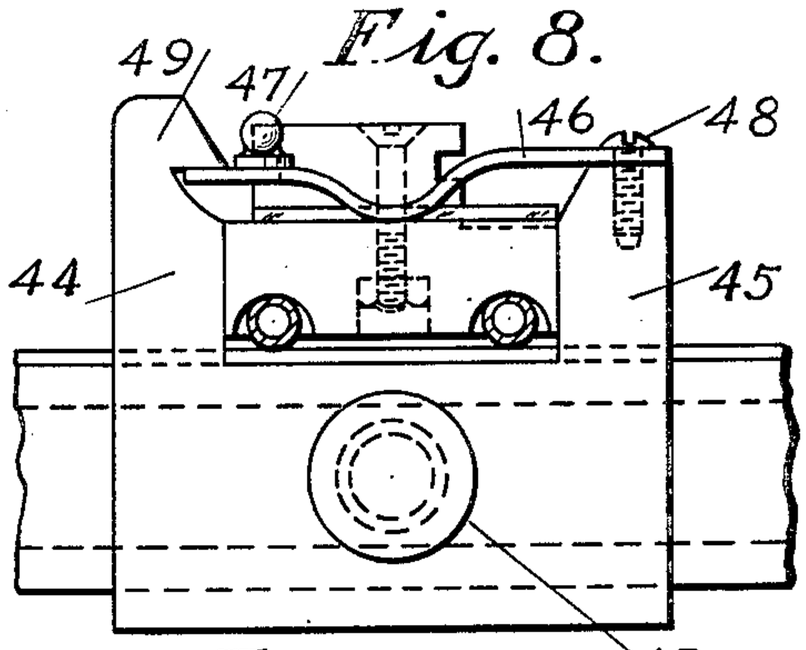


Fig. 9

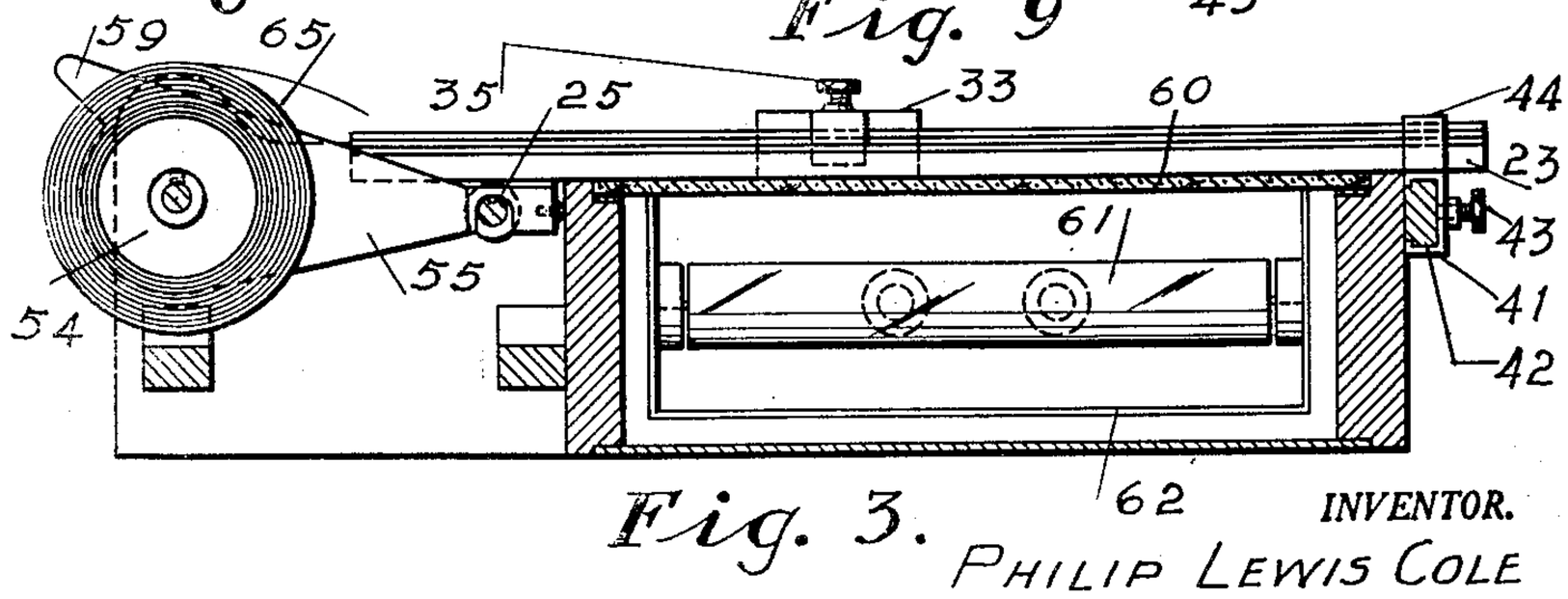


Fig. 3.

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CARD ALIGNING DEVICE

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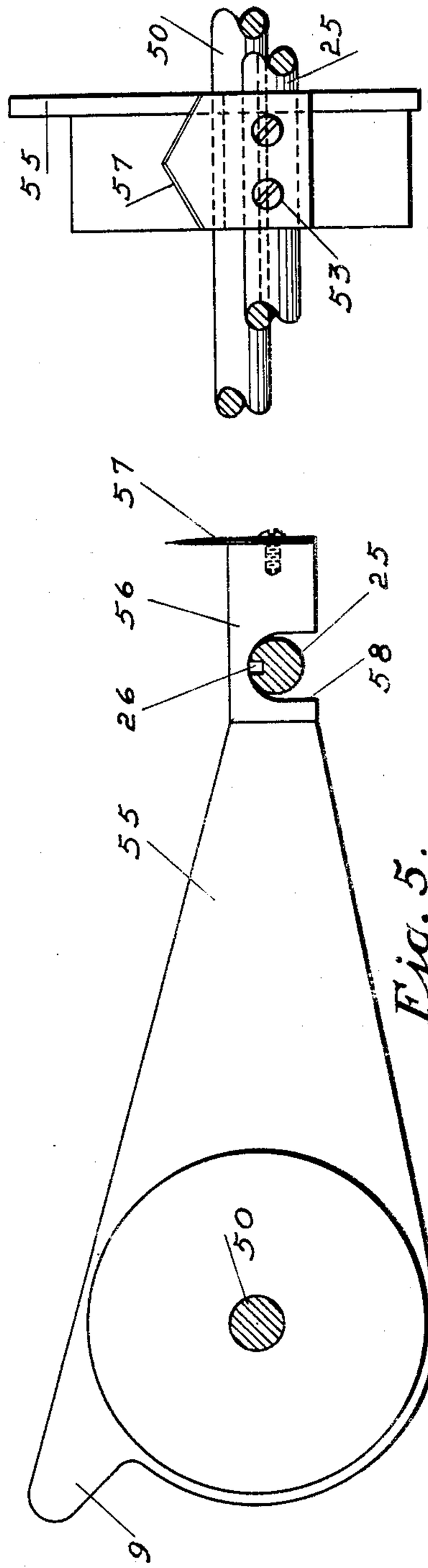


Fig. 6.




Fig. 5.

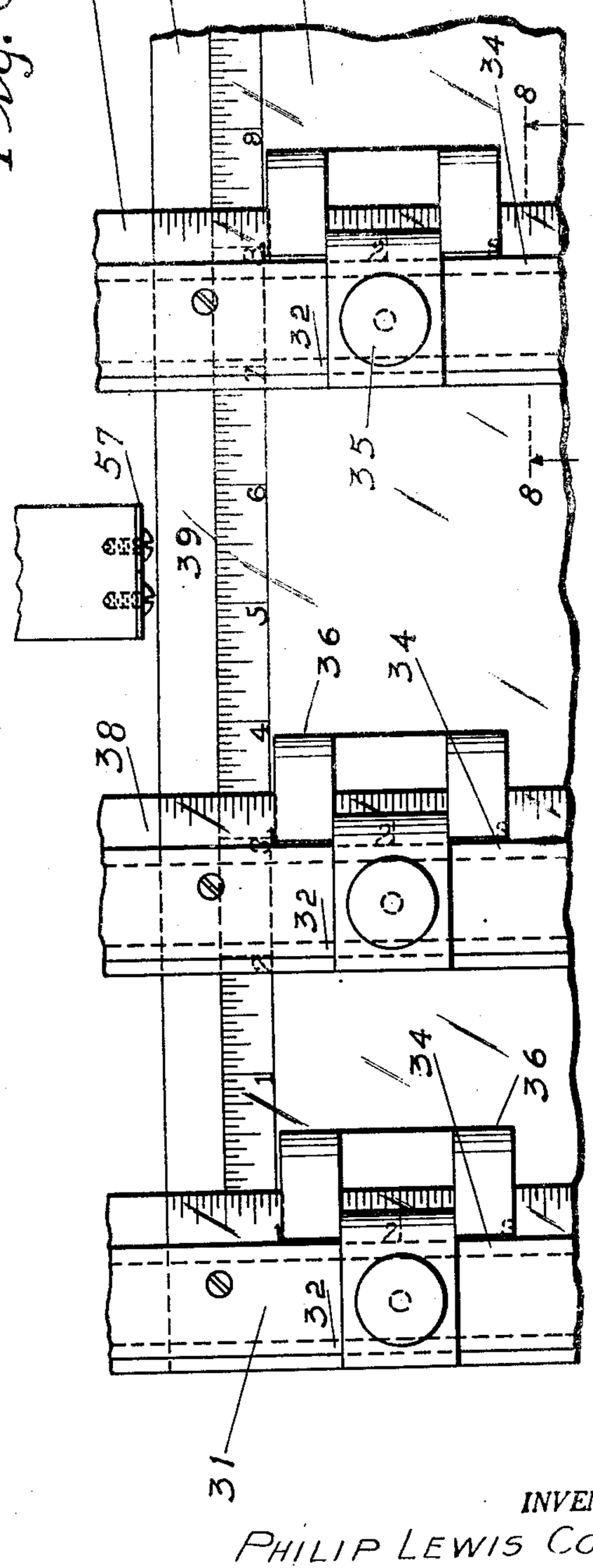


Fig. 4.

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CARD ALIGNING DEVICE

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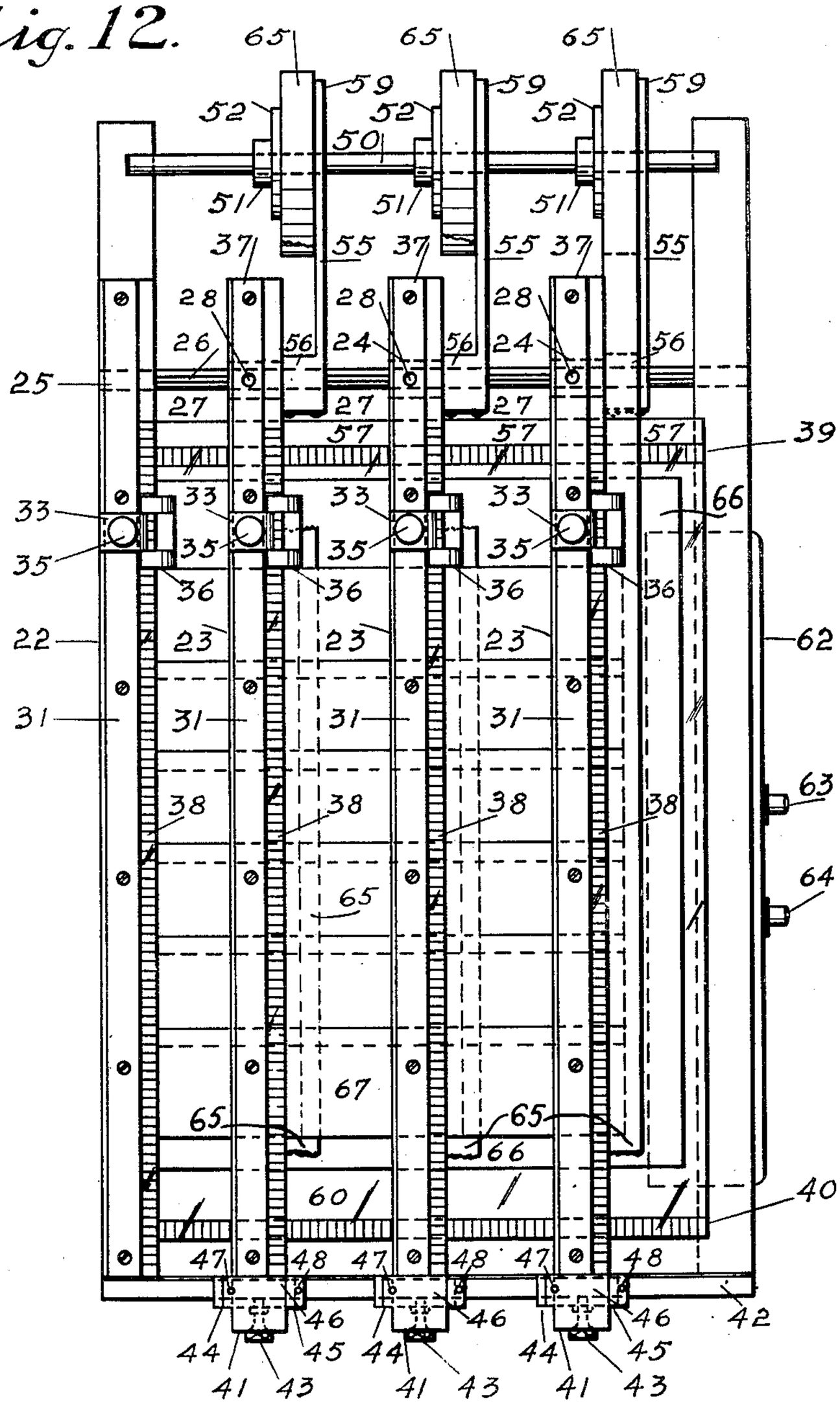
*Fig. 12.*

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Patented Oct. 31, 1950 2,527,532

# UNITED STATES PATENT OFFICE

2,527,532

## CARD ALIGNING DEVICE

Philip L. Cole, Silver Spring, Md.

Application March 28, 1946, Serial No. 657,737

8 Claims. (Cl. 281—1)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

1

The invention described herein may be manufactured and used by or for the Government of the United States for governmental purposes without the payment to me of any royalty thereon in accordance with the provisions of the act of April 30, 1928 (ch. 460, 45 Stat. L. 467).

My invention relates to a method and an aligning make-up apparatus for producing a lithograph of a plurality of elements of printed, typewritten or the like recorded matter and particularly to a method of producing a photographic negative of a plurality of card index cards or other printed matter from which a copy may be made by any well known photolithographic process.

Card index catalogs for library books or other printed material that must be periodically revised have the advantage of providing for the instant addition, removal or revision of cards in proper alphabetical or systematic order, whereby the index may be kept up to date.

The use of my device and my improved method make possible the rapid assembly of index cards or other material into sheets of copy for photographic reproduction.

One example of the use of this device and method would be the assembling of 3'' x 5'' "Library Cards" into sheets so that they can be reproduced in book or pamphlet form.

The improved method of assembling makes possible the refiling of the index cards, after the photographic negative is made, as they can be removed from the base sheet without damage. New material can then be inserted into the file and the cards reused when the next publication date is reached.

The device and method can be utilized in any instance where catalog or similar material of a uniform nature is to be assembled for reproduction.

This improved method of assembling makes possible the easy justification of columns of material to make pages of uniform length and appearance.

This improved method of assembling makes unnecessary the use of pastes or other adhesive which would damage the cards and make them unfit for reuse in the files.

The gauges and the adjustable features of the device make possible the assembling of various sizes and kinds of cards or sheets.

My invention provides a method and apparatus for lithographically reproducing, a catalog in book form at intervals without preserving, storing or rehandling the heavy metal type or plates from which the cards are originally printed. The storage of the type or plates from which cards or

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books are printed involves a serious problem of refiling the material for ready access, as well as withdrawing from use for recasting a constantly increasing quantity of type metal.

In the accompanying drawings which illustrate one embodiment of my invention—

Figure 1 is a plan view of my device.

Figure 2 is an elevation looking in the direction of the arrows 2—2 of Figure 1.

Figure 3 is a section on the line 3—3 of Figure 1.

Figure 4 is an enlarged fragmentary plan view of my device.

Figure 5 is an enlarged section on the line 5—5 Figure 1.

Figure 6 is an enlarged fragmentary view on the line 6—6 of Figure 1.

Figure 7 is an enlarged fragmentary view on the line 7—7 of Figure 1.

Figure 8 is a section on the line 8—8 of Figure 4.

Figure 9 is an enlarged fragmentary elevation in the direction of the arrows 9—9 of Figure 1.

Figure 10 is an enlarged fragmentary section on the line 10—10 of Figure 1.

Figure 11 is an enlarged fragmentary section on the line 11—11 of Figure 1.

Figure 12 is a plan view of my device, including a plurality of cards bearing printed matter after the tape is applied.

In these drawings:

A supporting base 21 is provided with a marginal stop 22 and a plurality of clamping guides 23 which are secured to bifurcated hinge members 24 which are mounted on a shaft 25 having a keyway 26. Each of the guides 23 is adjustably secured on the shaft 25 by means of a slidable sleeve 27 fitted in the bifurcation of said hinge members which may be locked to the shaft 25 by a set screw 28 which fits into the keyway 26. Each guide 23 is provided with two downwardly open grooves 29 in each of which is mounted a resilient tube 30 which protrudes when the guide is in unclamped position (Figure 8). The marginal stop 22 and each of the guides 23 carry a rail 31 provided with lateral grooves 32 on which there is mounted a slide 33 provided with groove-engaging tongues 34 and a knurled clamping screw 35. Each slide 33 is provided with a hinged stop 36. Each guide 23 is provided with an extension 37 which engages the base 21 when the guide is rotated beyond the vertical. The stop 22 and each guide 23 is provided with a scale 38, while the base 21 is provided with similar scales 39 and 40 which are perpendicular to the scales 38.

A means for yieldingly clamping the guides 23

against the base 21 comprises a stop 41 (Figures 2, 3 and 9) mounted on a bar 42 to which it is releasably clamped by a knurled thumb screw 43. Each stop 41 is provided with two marginal arms 44 and 45. A spring detent 46 having a handle 47 is pivotally attached to the arm 45 by a screw 48. The arm 44 is provided with a spring detent engaging hook 49 having a sloping detent engaging face. A shaft 50 is removably supported above the base 21 and carries a plurality of sleeves 51 each having a flanged portion 52 and a set screw 53. A plurality of spools 54 are revolubly mounted on the shaft 50. To each spool 54 is rigidly secured an arm 55 provided with a terminal extension 56 to which is rigidly secured a transverse cutting blade 57. The extension 56 is supported by the shaft 25 and may be provided with a notch 58 for the shaft 25. An integral stop 59 (Figs. 3 and 5) on the arm 55 serves to support the cutting blade 57 when rotated in counter-clockwise direction beyond the vertical position.

The base 21 is provided with a translucent top 60, a fluorescent illuminating tubular light 61 mounted in a suitable reflector 62 and supplied by current through suitable terminals 63 and 64.

Each spool 54 serves to support a roll of adhesive tape 65 which is retained in position by the blade supporting arm 55 and the cooperating sleeve 51.

The operation of my device is as follows:

A sheet 66 of stiff cardboard or the like is placed on the top 60 with each of the clamping guides 23 rotated to inoperative position, and the hinged stop 36 on the left-hand slide 33 turned upward and back into inoperative position.

The size of the finished photograph having been decided upon, the left-hand slide 33 is clamped at a point on the scale 38, corresponding to the length of the photograph, and the hinged stop 36 is turned into operative position upon the sheet 66. A plurality of printed cards 67 are assembled with left hand edges against the marginal stop 22 and the topmost card against the stop 36 to form a first column of cards which are overlapped like shingles. This will usually leave a blank space of less width than a card, which space for best appearance, should be evenly devided, which division can be made mechanically or mathematically. Then by use of dividers, this space can be laid off between the lowest printed line of each upper card and the upper margin of the next lower card. The first of the clamping guides is then clamped over these cards with its right-hand margin in alignment with the right-hand margin of the printed matter on the cards, and the stop 36 is turned back into inoperative position. The left-hand roll 65 is brought into alignment with the right-hand margin of the clamping guide 23 and a strip of tape longer than the sheet 66 is drawn from the roll and pressed against the exposed margins of the cards, which it overlaps, so that it can also be pressed against the sheet 66. With the aid of the blade 57 the strip is severed from the roll, and its free end is then pressed against an exposed part of the sheet 66.

The guide 33 on this first clamping guide 23 is aligned with that on the marginal stop 22 and the operation is repeated for assembling and spacing succeeding columns of cards, until this assembling operation has been completed, as diagrammatically shown in Figure 12.

After the printed matter for a page has been assembled the sheet 66 with attached cards 67



is released by raising the guides 23 and is used as a copy for photolithographic reproduction. After being photographed the sheet 66 is replaced in the frame with the guides 23 clamped down. An end of each tape is then loosened from the sheet 66 and peeled off the card margins and the sheet 66, tape being selected which has an adhesive that permits such removal without damage to the cards. The cards may then be returned to the filing cabinets for re-use with cards of a later issue arranged in proper order.

The photographic negatives may be examined for defects by placing each on the top 60 and turning on the electric light 61. Defects may then be eliminated by "touching up" in the usual way.

While I have shown and described a preferred embodiment of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims in which it is my intention to claim all novelty inherent in my invention as broadly as possible in view of the prior art.

What I claim is:

1. A card aligning device including a supporting base, an upwardly extending marginal stop, a plurality of clamping guides each provided with a releasable shaft clamping means, a shaft on which said guides are pivotally mounted, means for releasably clamping said guides to said base, a plurality of roll mounting means each provided with a releasable shaft clamping means, a shaft for said roll mounting means, and means for at will serving sections of adhesive coated tape after applying said tape to exposed ends of columns of cards.

2. A card aligning device, including a supporting base, an upwardly extending marginal stop, a plurality of clamping guides, a bifurcated hinge for each guide, a sleeve provided with a clamping screw adapted to fit within said bifurcation, a shaft on which said guides and sleeves are mounted, a yielding clamp for each guide, a bar on which said clamps are adjustably mounted, a plurality of roll mounting means each provided with a releasable shaft clamping means, a demountable shaft for said roll mounting means, and means attached to each of said roll mounting means on which a transverse tape cutting blade is mounted.

3. A card aligning device including a supporting base provided with an upwardly extending marginal stop, a plurality of clamping guides parallel with said stop, a shaft on which said guides are hinged and adjustably mounted, an adjustable slide mounted on each of said clamping guides and on said marginal stop, a stop hinged to each of said slides, and means for adjustably mounting a roll of adhesive tape in alignment with one side of each of said clamping guides.

4. A device for use in assembling and mounting elements bearing recorded matter including a plurality of clamping guides for aligning and clamping a plurality of elements while overlapped and arranged to conform to the style of a printed page on a backing sheet and an adhesive tape mounting device having means for laterally adjusting said tape with respect to said elements whereby tape mounted on said means is properly aligned for securing one margin of each of said

elements and also extends beyond said margin for attachment of said elements to a backing sheet.

5. A device for use in assembling and mounting a plurality of cards bearing recorded matter to conform to the style of a printed page including a suitable base including a backing sheet supporting portion, a plurality of hinged clamping guides for holding a plurality of cards in columns, a shaft for mounting rolls of adhesive tape perpendicular to said guides, a plurality of laterally adjustable tape roll mounting means for aligning in succession each roll of tape with a corresponding column of a plurality of columns of cards for simultaneously securing each column of cards to a backing sheet and means for severing from each of said rolls of tape such portions as have been attached to said cards and backing sheet.

6. A card assembling and aligning device including a supporting base provided with an upwardly extending marginal stop, a plurality of clamping guides each provided with a plurality of resilient clamping tubes, a shaft perpendicular to said stop on which said guides are hinged, an adjustable slide for each of said clamping guides and for said marginal stop, a stop hinged to each of said slides, and a second shaft parallel to said first shaft for mounting a roll of adhesive tape in alignment with one side of each of said clamping guides.

7. A device for use in assembling and mounting on a backing sheet elements bearing matter to be reproduced photographically to conform to the style of a printed page, including a suitable base having a backing sheet support, a marginal stop bearing a scale, a plurality of hinged clamping guides parallel to said marginal stop for holding a plurality of said elements in columns, a shaft on which said clamping guides are hinged, a second shaft parallel with said first shaft mounted on said base, a plurality of tape holding elements each provided with a shaft clamping set screw mounted on said second shaft, a card restricting stop slidably mounted on said marginal stop and on each of said clamping guides, a releasable clamp for retaining said guides in clamping position over said base, an arm rigidly secured to each of said tape holding elements, and a transverse cutting blade for severing sections of tape terminally mounted on said arm.



8. A device for use in assembling and mounting elements bearing printed matter to conform to the style of a printed page, including a suitable base having a translucent backing sheet support, a marginal stop bearing a scale, a plurality of hinged clamping guides each bearing a scale corresponding to that on said marginal stop for holding a plurality of said elements in columns, a shaft on which said clamping guides are hinged, a second shaft parallel with said first shaft mounted on said base, a plurality of sleeves each provided with a shaft clamping set screw mounted on said second shaft, a card restricting stop slidably mounted on said marginal stop and on each of said clamping guides, a releasable clamp for retaining said guides in clamping position over said base, a tape roll mounting spool for each of said sleeves provided with an arm, a transverse cutting blade for severing sections of tape terminally mounted on said arm and means for projecting light from beneath said translucent backing sheet support.

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