

May 9, 1933.

G. BAKER

1,908,301

TYPE HOLDER AND LOCKING MEANS

Filed June 6, 1931

2 Sheets-Sheet 1

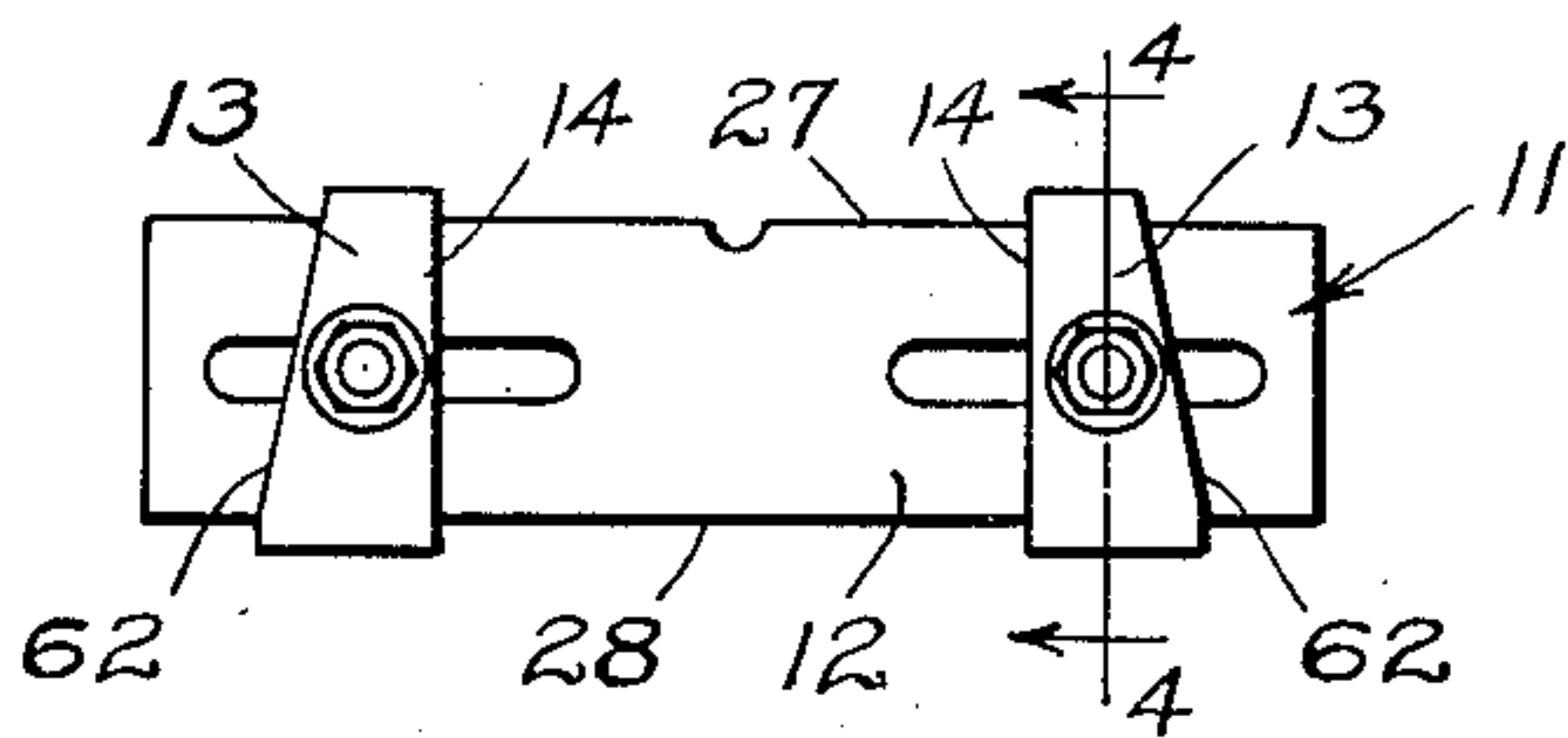


FIG. 1

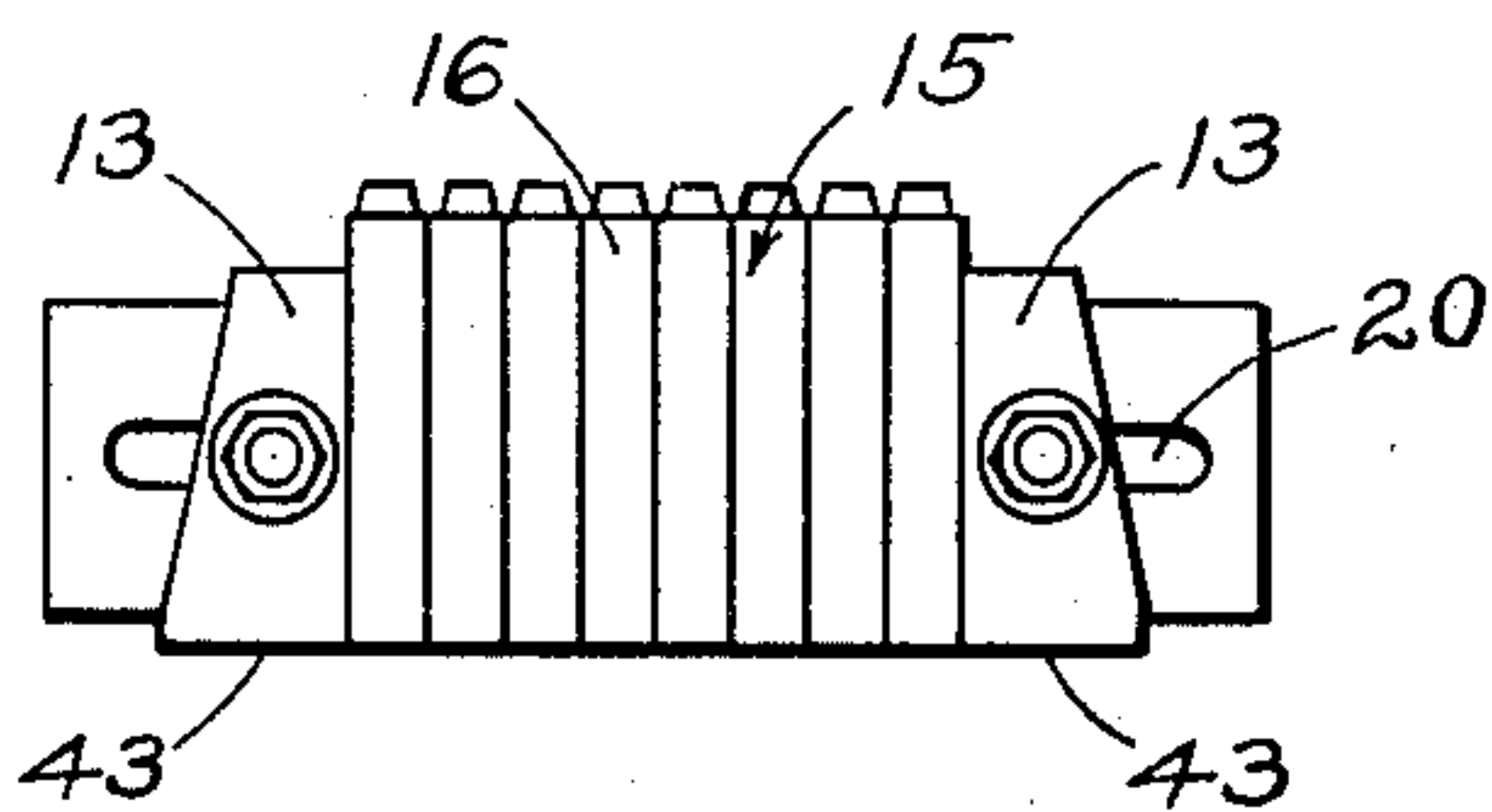


FIG. 2

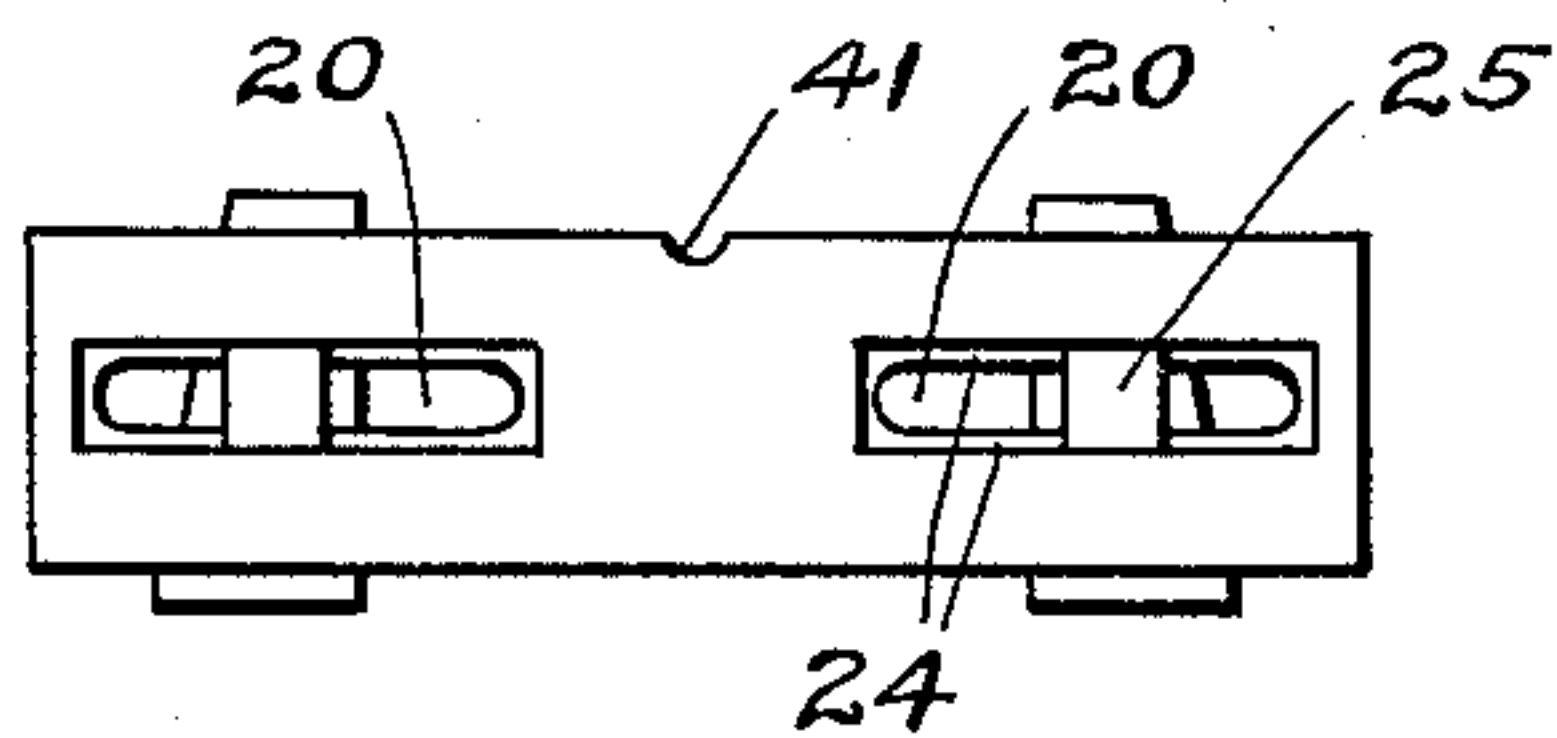


FIG. 3

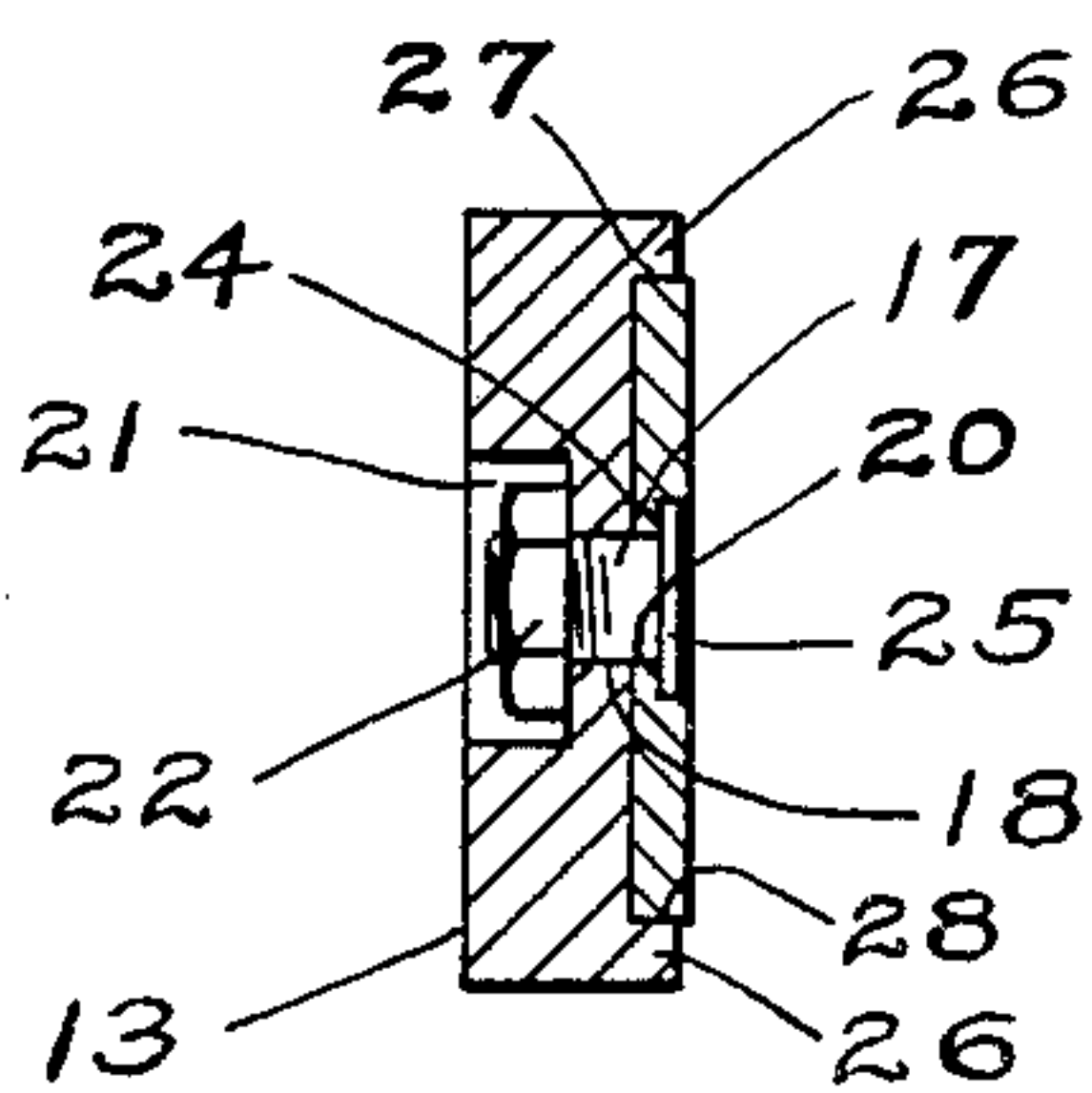


FIG. 4

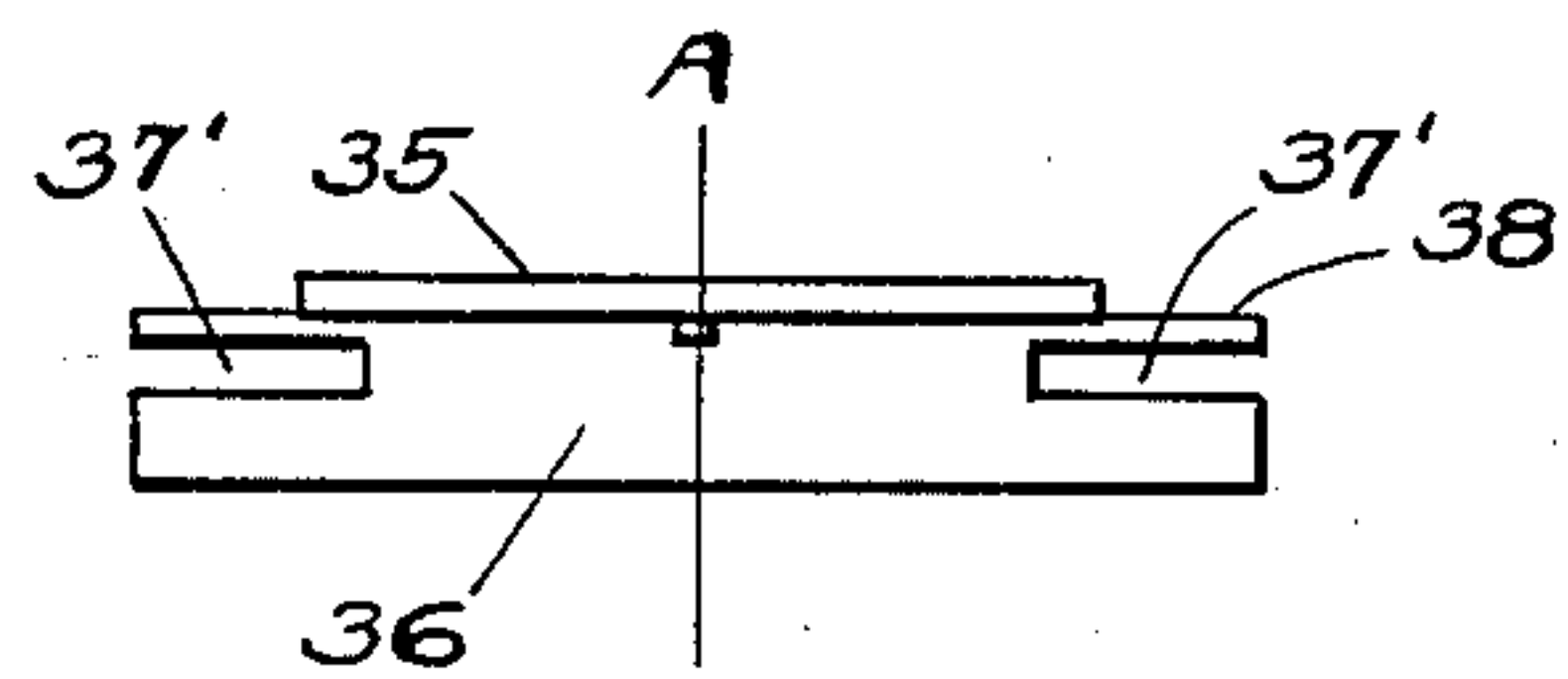


FIG. 6

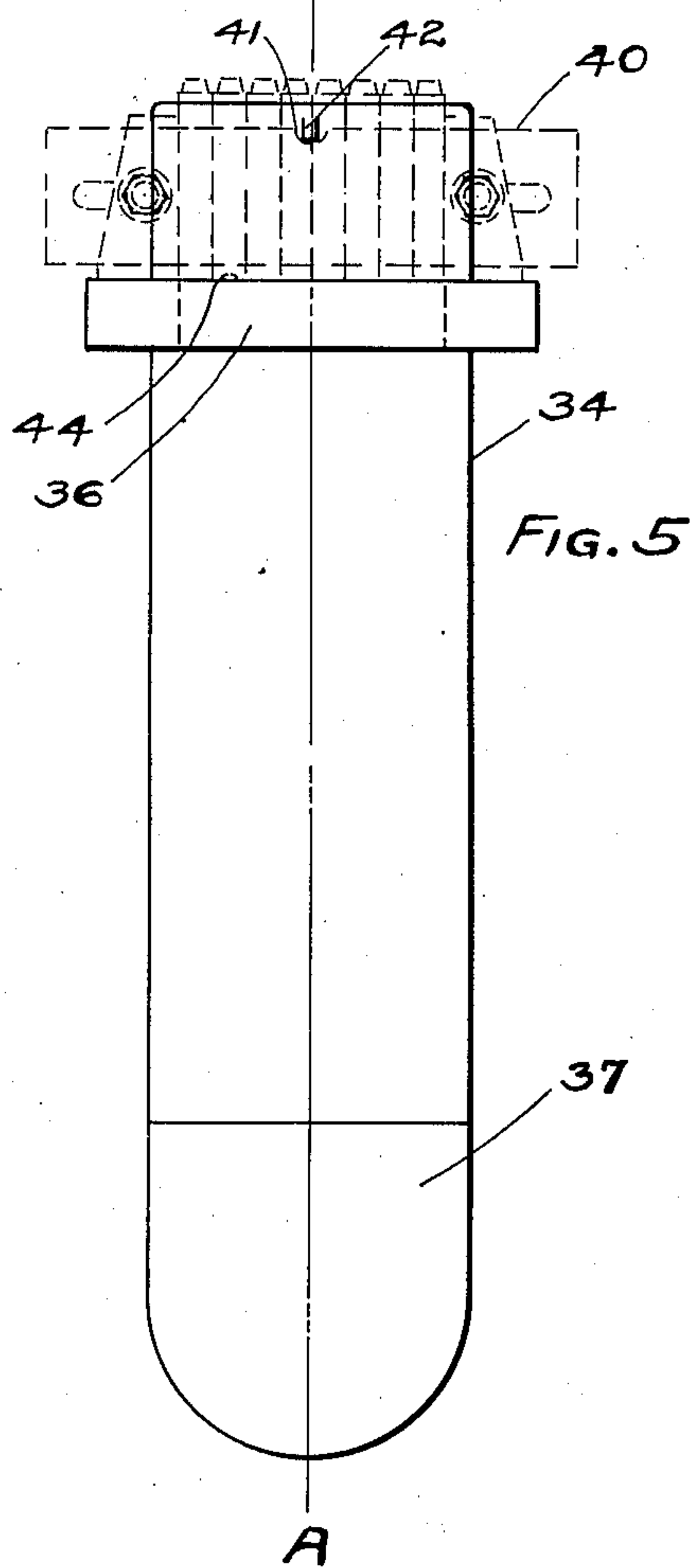


FIG. 5

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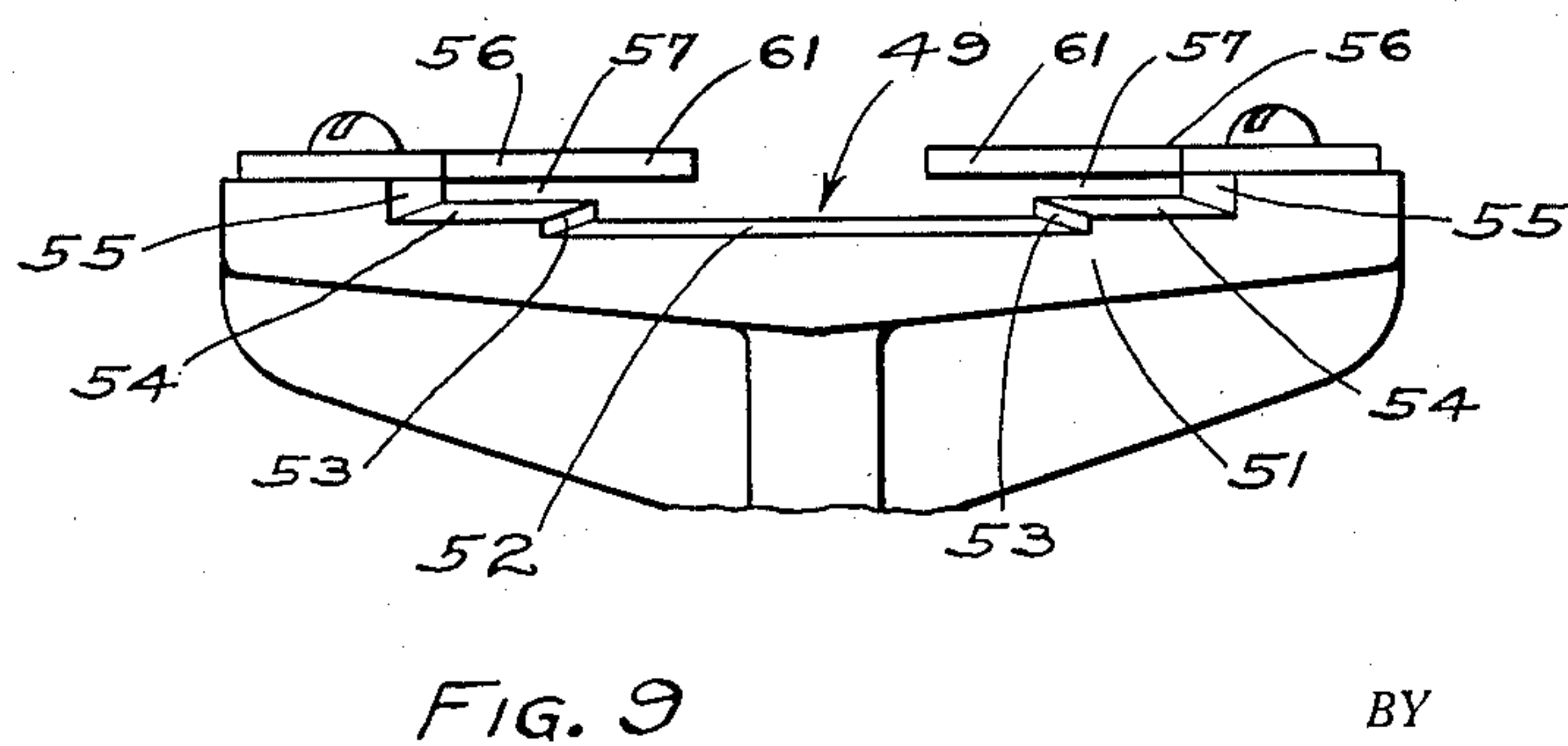
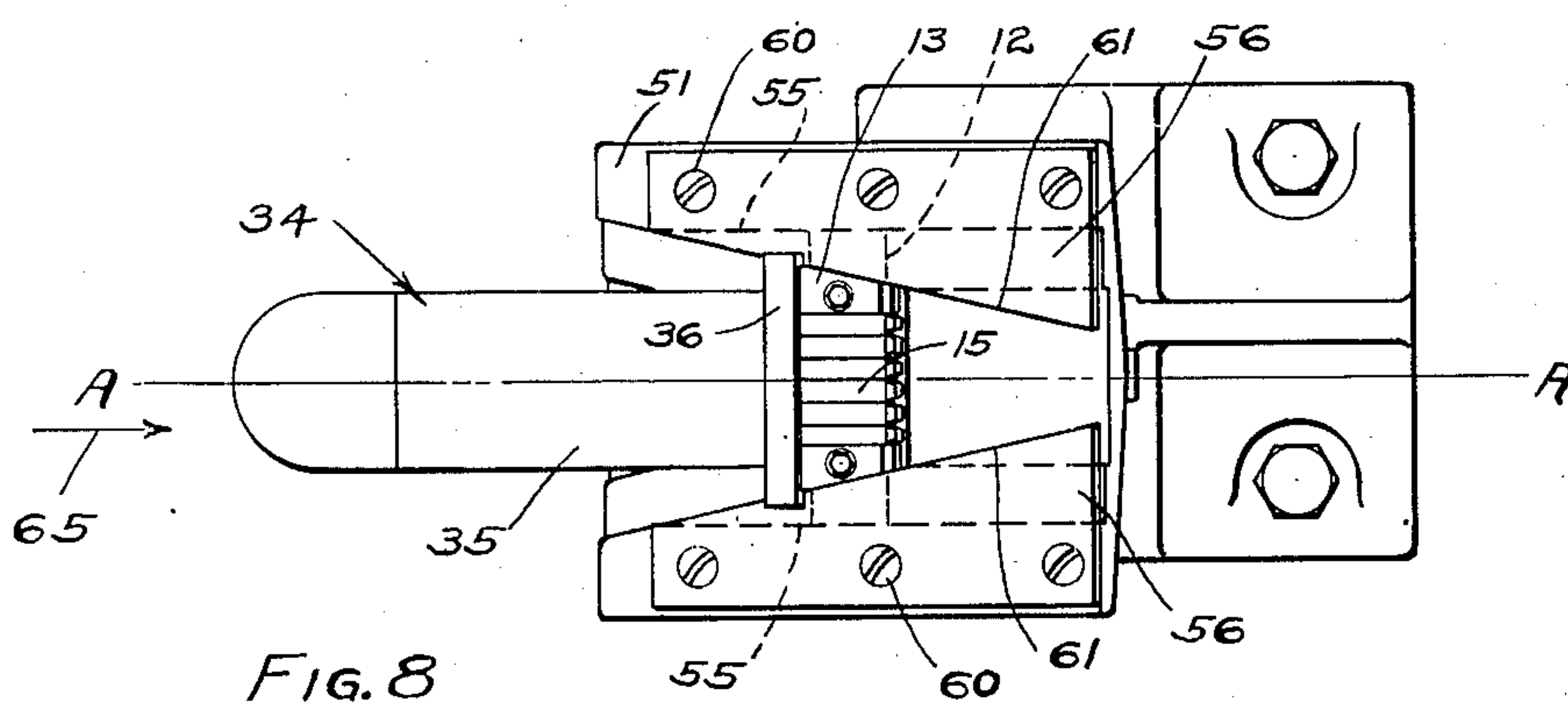
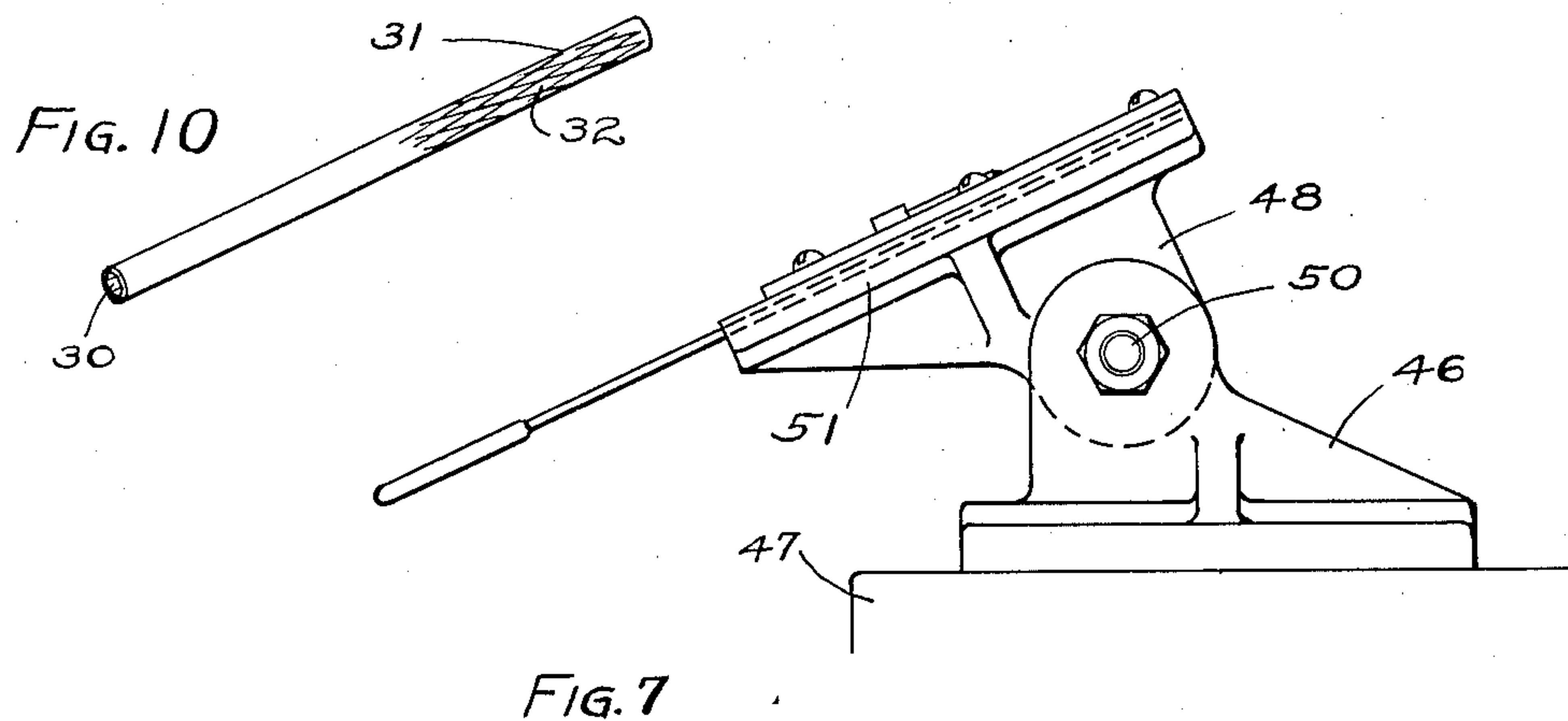
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TYPE HOLDER AND LOCKING MEANS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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TYPE HOLDER AND LOCKING MEANS

Application filed June 6, 1931. Serial No. 542,593.

My invention relates to locking up individual lines of type, each in a separate holder of skeleton construction, to facilitate the handling of type thus assembled, whether hot or cold. Its present use is indicated particularly in library binderies, where dissimilar books are lettered in continual succession, so that each line of type is applied generally but once and is then put aside to cool.

Such binderies are accustomed to center each line of type within certain pallet means which they employ for applying the same centrally across each book back. To meet such requirement, my invention provides automatic means for centering each line of type within its holder antecedent to locking the same there.

Locking of the type within my invention is not intended to either supplement or supplant customary ultimate locking of type within the pallet (or chase) for application to the book back, but it is intended to provide a means for handling lines of assembled type, so that any number of lines may be set in self-contained units, and these assorted, preheated, or otherwise conveniently moved about.

Another advantage of my invention is that it can be constructed and will satisfactorily operate if made with a back strip as thin as fifty thousandths of an inch, or approximately three "points" as designated by printers. This means that in practice a series of lines of type, each locked in one of my type holders, can be assembled very closely (only three points apart). This is an important fact when several lines of comparatively small type are to be impressed in one operation upon a book back so as to have a compact appearance.

Finally, I recognize that other means of centering lines of type,—generally by the introduction of quads or such spacing materials at one or both ends of the type line,—and other means of locking lines of type,—generally more bulky or more tedious of operation than mine,—have been made and are used. But my invention has the distinct advantage of being skeletonized and economical in construction, of adequate durability, and

automatic in its method of centering without need of introducing spacing material of any kind.

Further objects and advantages of the invention will be made evident throughout the following part of the specification.

Referring to the drawings, which are for illustrative purposes only,

Fig. 1 is a plan view of a simple form of type holder forming a part of my invention.

Fig. 2 is a view similar to Fig. 1 showing a line of type held in the holder.

Fig. 3 is a bottom view of the holder.

Fig. 4 is an enlarged cross section on a plane represented by the line 4—4 of Fig. 1.

Fig. 5 is a plan view of a handle (or type-stick) for holding a type holder such as shown in Fig. 1.

Fig. 6 is an end view of the handle shown in Fig. 5.

Fig. 7 is an elevation of a compressing and centralizing device forming a part of the invention, with the handle and loaded type holder in place therein.

Fig. 8 is a plan view corresponding to Fig. 7.

Fig. 9 is an enlarged, fragmentary front perspective view looking at the mouth of the compressor shown in Fig. 7, with the handle and loaded type holder removed therefrom.

Fig. 10 is a perspective view of a wrench for securing the abutment members of the type holder.

The simple embodiment of my invention includes a type holder 11, such as shown in Figs. 1 to 4. This type holder has a base consisting of a flat plate 12 of elongated rectangular form. The plate 12 may be as little as fifty thousandths of an inch in thickness and is preferably made of a metal having a coefficient of expansion substantially the same as type metal. Slidable longitudinally on the plate 12 are two abutment members 13, the inner ends or faces 14 of which are in a plane perpendicular to the plane of the plate 12 and also perpendicular to the longitudinal axis of the plate 12 so that the abutment faces 14 will engage the end faces of a line of type 15 consisting of an assembly of type members 16, such as shown in Fig. 2.

The type members 16 are held in place on the holder 11 by end pressure of the abutment members 13 against the ends of the line of type 15. Owing to the fact that lines of type 5 employed for purposes set forth in the introduction of this specification vary in length, the abutment members 13 are movable longitudinally on the plate 12 so that they may be forced against the end of the line of type 15, and means are provided for locking the abutment members 13 immovably to the plate 12 so that they will thereafter be held by the plate 12 against the ends of the line of type 15 with sufficient pressure to prevent displacement of the type members 16 in the ordinary handling of the holder and the line of type with which it is loaded.

For the purpose of slidably securing the abutment members 13 to the plate 12 and locking them to the plate in selected positions, I provide screw means in the form of small bolts 17 which extend through openings 18 in the abutment members 13 and longitudinal slots 20 in the plate 12. The outer ends of the openings 18 are provided with counterbores 21 so as to form recesses in which the nuts 22 of the bolts 17 are submerged.

As shown in Fig. 3, in which the under or lower face of the type holder 11 is toward the observer, and also in Fig. 4, in which the under or lower face is toward the right, the under or lower portions of the slots 20 are diametrically enlarged or relieved so as to provide inwardly projecting, longitudinal flanges 24 adjacent the upper edges of the slots 20. The bolts 17 have thin heads 25 which are preferably square, as shown in Fig. 3, these heads projecting diametrically under the flanges 24 forming the upper edges of the slots 20. At the upper and lower edges of the abutment members 13, flanges 26 project downwardly over the upper and lower edges 27 and 28 of the plate 12 and serve as guide means for holding the abutment members 13 in proper positions of alignment with the plate 12 as they are slid therealong. I find that the bolts may be screwed up with sufficient tightness to hold the abutment members practically immovable, by use of a simple wrench, such as shown in Fig. 10, consisting of a short bar having a socket 30 at one end thereof of a size to fit into the counterbore 21 and to enclose the nut 22, and having the other end or handle 31 thereof knurled as indicated at 32.

A handle 34 for receiving the holder 11 is shown in Figs. 5 and 6. This handle consists of a plate 35 having a cross bar 36 near its upper or forward end and an enlargement or grip 37 at its lower end. The cross bar 36 is secured in crosswise position and has slots 37' cut in the ends thereof, the walls 38 adjacent the slots 37' being slightly thinner than the plate 12 for a purpose which will be hereinafter disclosed. In Fig. 5, by

dotted lines 40 I show a type holder 11 in its proper position on the handle 34 with the centralizing notch 41 formed in the upper end of the plate 12 in engagement with a lug 42 which projects upwardly in the central portion of the upper or forward end of the handle 34, this interengagement centralizing the holder with the handle 34, and the engagement of the lower ends 43 of the abutment members 13 with the upper face 44 of the cross bar 36 holding the type holder 11 in a position perpendicular to the center line A—A of the handle 34.

The compressing and centralizing means shown in Figs. 7, 8, and 9 includes a base 46 which may be secured to a suitable support 47, such as a table, and a body 48 which may be hinged to the base 46 by means of a horizontal pin or bolt 50. The body 48 includes a transverse wall 51, the upper face of which is machined to provide a larger or major channel 49 in the bottom wall of which is formed a lower or inner flat channel 52 bounded by edge walls 53, the width and height of the channel 52 being equivalent to the width and thickness of the plate 35 so that the plate 35 of the handle 34 may slide into the channel 52, as shown in Figs. 7 and 8. On each side of the channel 52 are flat wall surfaces 54 bordered by vertical parallel edge walls 55, and by means of walls or plates 56 disposed parallel to the surfaces 54 channels or grooves 57 are formed along the sides of the inner channel 52, the channels or grooves 54 constituting the edge portions of the major channel 49. As shown in Fig. 8, the walls or plates 56 are secured in place by screws 60, and the inner edges 61 of the members 56 converge in forward or rightward direction. The walls 53, 55, and 61 are disposed at equal distances from a central vertical plane indicated by the line A—A of Fig. 8.

In Figs. 1 and 2 I show the outer edge faces or edges 62 of the abutment members 13 as converging upwardly or forwardly, the angle of convergence of the edges 62 being the same as the angle of convergence of the edges 61 of the walls or plates 56 so that when a type holder 11 is placed on the handle 34, as indicated by dotted lines 40 in Fig. 5 and in full lines in Fig. 8, and the plate 35 of the handle 34 is then slid upwardly in the channel 52, the edges 61 of the plates 56 will engage the outer edges 62 of the abutment members 13 and will move the abutment members 13 inwardly toward the central plane A—A of Fig. 8.

When the handle 34 with the type holder 11 thereon is placed in the compressor and centralizing device, as shown in Fig. 8, the ends of the plate 12 project laterally into the lateral channels 57 formed between the wall 54 and the plate members 56, and the extreme ends of the plates 12 are

centralized between the edge walls 55 so that the plate member 12 is held centralized relative to the longitudinal plane A—A of Fig. 8.

8. The edge 61 of each plate 56 is adapted to enter a groove or slot 37' in an end of the cross bar 36, and the walls 38 of the cross bar 36 project under the edges 61 of the plates 56 into the lateral channels 57.

The converging edges 61 of the plates 56 centralize the abutment members 13 and the line of type 15 relative to the plane A—A and likewise relative to the plate 12 owing to the fact that the plate 12 is centralized with respect to the plane A—A. Then, as force is exerted on the handle 34 in rightward direction, as indicated by an arrow 65 in Fig. 8, the inward reaction of the converging edges 61 against the converging edges 62 of the abutment members 13 forces the abutment members 13 inwardly toward the plane A—A, thereby compressing the type members 16 of the line of type 15 tightly together and holding the abutment members 13 against the ends of the line of type 15 with a pressure which is proportionate to the pressure exerted in the direction of the arrow 65 but multiplied by the mechanical effect of the inclined edges 61 of the plates 56. At this time the locking means, which have been shown in the form of bolts 17, are tightened up by rotating the nuts 22, which may be accomplished by use of the wrench shown in Fig. 10, thereby locking the abutment members 13 to the plate 12 so that outward movement of the abutment members 13 relative to the plate 12 is resisted. In this manner the function of exerting inward force against the line of type is transferred from the inclined edges 61 of the plates 56 to the plate 12, so that upon removal of the type holder 11 from the compressing and centralizing means, the abutment members 13 will be firmly held by the plate 12 in such position that they will exert inward forces against the ends of the line of type 15, sufficient to hold the type members 16 against displacement in the ordinary handling of the loaded type holder 11.

From the foregoing description it will be perceived that the action of the compressing and centralizing device is to very accurately centralize the line of type 15 relative to the type holder 11 and to apply the abutment members 13 of the type holder 11 against the ends of the line of type 15 with sufficient pressure to develop ample friction between the separate type members 16 and the inner faces 14 of the abutment members 13 to hold the line of type 15 in centralized position on the holder 11. The invention requires no spacing members or quads at the ends of a line of type for the purpose of centralizing such line of type relative to a type holder, and therefore eliminates the time and labor which would be required for the selection of proper spacing members in the

use of type holders having fixed end walls instead of movable end walls such as the abutment members 13.

Although I have herein shown and described my invention in simple and practical form, it is recognized that certain parts or elements thereof are representative of other parts, elements, or mechanisms which may be used in substantially the same manner to accomplish substantially the same results; therefore, it is to be understood that the invention is not to be limited to the details disclosed herein but is to be accorded the full scope of the following claims.

I claim as my invention:

1. A type holder of the character described, including: a flat plate adapted to receive a line of type in reclining position on the upper face thereof; abutment members adapted to engage and press against the ends of a line of type so placed on said plate; and screw means for securing said abutment members immovably to said plate, said screw means being entirely within the space defined by the external walls of said plate and said abutment members.

2. A type holder of the character described, including: a flat plate adapted to receive a line of type on the upper face thereof; abutment members adapted to engage the ends of a line of type so placed on said plate, said abutment members being movable longitudinally on said plate, there being guide means operative between said abutment members and said plate; and screw means for securing said abutment members immovably to said plate, said screw means extending laterally through said plate and said abutment members, and the ends of said screw means being within the outer faces of said line of type and said abutment members.

3. A type holder of the character described, including: a flat plate adapted to receive a line of type on the upper face thereof, said plate having means for centralizing it in a holder; abutment members adapted to engage the ends of a line of type so placed on said plate, said abutment members being movable longitudinally on said plate, and having the outer ends thereof adapted for cooperation with a compressing means for forcing said abutment members against said type prior to the securing of said abutment members to said plate, there being guide means operative between said abutment members and said plate; and means for securing said abutment members immovably to said plate.

4. A type holder of the character described, including: a flat plate adapted to receive a line of type on the upper face thereof; abutment members having inwardly faced abutment faces adapted to engage the ends of a line of type so placed on said plate, said abutment members being movable longitudinally

nally on said plate, there being guide means operative between said abutment members and said plate for determining the longitudinal movement of said abutment members relative to said plate and for maintaining said abutment faces normal to the longitudinal axis of said plate; and screw means for securing said abutment members immovably to said plate, said screw means extending laterally through said plate and said abutment members, and the ends of said screw means being within the outer faces of said line of type and said abutment members.

5. A type holder of the character described, including: a flat plate adapted to receive a line of type in reclining position on the upper face thereof, said plate having longitudinal openings therein; abutment members adapted to engage and press against the ends of a line of type so placed on said plate; and means extending from said abutment members and through said longitudinal openings so as to engage said plate, for securing said abutment members immovably to said plate, the ends of said means being within the parallel planes defined by the outer faces of said line of type and said abutment members.

6. A type holder of the character described, including: a flat plate adapted to receive a line of type on the upper face thereof, said plate having longitudinal slots on opposite sides of its center, said slots having their lower portions laterally enlarged; an abutment member slidably mounted on each end of said plate, said abutment members having openings therein aligned with said slots, the outer ends of said openings being countersunk; and bolts extending within said slots and said openings, the heads of said bolts being diametrically enlarged to engage the diametrically enlarged portions of said slots, and the nuts of said bolts resting in the countersunk outer ends of said openings.

7. Equipment of the character described, including: a holder comprising a flat plate adapted to receive a line of type on the upper face thereof, abutment members adapted to engage the ends of said line of type so placed on said plate, and means for securing said abutment members immovably to said plate; a member adapted to receive said holder in a substantially centralized position; and means for simultaneously moving said abutment members inwardly in such a manner that they will be centralized relative to said plate and press against the ends of said line of type on said plate.

8. Equipment of the character described, including: a holder comprising a flat plate adapted to receive a line of type on the upper face thereof, abutment members adapted to engage the ends of said line of type so placed on said plate, and means for securing said abutment members immovably to said plate;

and a centralizing and compressing means consisting of a body having a channel adapted to receive said plate of said holder in transverse position relative to the longitudinal axis of the channel, and side walls converging relative to said longitudinal axis and adapted to engage said abutment members so as to force them inwardly in centralized relationship to said plate and to press them against the ends of said line of type received on said plate.

9. Equipment of the character described, including: a holder comprising a flat plate adapted to receive a line of type on the upper face thereof, abutment members adapted to engage the ends of said line of type so placed on said plate, and means for securing said abutment members immovably to said plate; a centralizing and compressing means consisting of a body having a channel adapted to receive said plate of said holder in transverse position relative to the longitudinal axis of the channel, and side walls converging relative to said longitudinal axis and adapted to engage said abutment members so as to force them inwardly in centralized relationship to said plate and to compress them against the ends of said line of type received on said plate; and means for moving said holder along said channel of said compressing and centralizing means in the direction of convergence of said converging walls thereof.

10. Equipment of the character described, including: a holder comprising a flat plate adapted to receive a line of type on the upper face thereof, abutment members adapted to engage the ends of said line of type so placed on said plate, and means for securing said abutment members immovably to said plate; a centralizing and compressing means consisting of a body having a channel adapted to receive said plate of said holder in transverse position relative to the longitudinal axis of the channel, and side walls converging relative to said longitudinal axis and adapted to engage said abutment members so as to force them inwardly in centralized relationship to said plate and to compress them against the ends of said line of type received on said plate; and a handle member adapted to receive said type holder on the forward end thereof, said handle being movable along the longitudinal axis of said channel and providing a means for forcing said type holder in a direction to produce engagement of said abutment members with said converging walls of said centralizing and compressing means.

11. Equipment of the character described, including: a holder comprising a flat plate adapted to receive a line of type on the upper face thereof, abutment members adapted to engage the ends of said line of type so placed on said plate, and means for securing said

abutment members immovably to said plate; a compressing and centralizing means consisting of a body having a longitudinal major channel adapted to receive said plate of said type holder in transverse position, there being a smaller channel formed in the bottom of said major channel, and wall members extending inwardly over the edges of said major channel, said wall members having forwardly converging edges adapted to engage said abutment members of said holder as said holder is moved along the longitudinal axis of said major channel; and a handle member, or type-stick, comprising a body adapted to slide into said smaller channel, a cross bar near the forward end of said body against which the rearward portion of said type holder may rest, said cross bar having slots in the end thereof adapted to receive said converging edges of said wall members as said body of said handle member is moved forwardly in said smaller channel.

12. A handle member, or type-stick, of the character described, comprising a flat plate having a cross bar near the forward end thereof and an upwardly projecting lug for centralizing purposes, said cross bar having slots in the ends thereof, said slots lying in a plane parallel to said plate.

13. A handle member, or type-stick, of the character described, comprising a flat plate having a cross bar near the forward end thereof, said cross bar having slots in the ends thereof, said slots lying in a plane parallel to said plate.

14. A compacting device of the character described for use with a type holder having a plate and abutment members adapted to be pressed against a line of type placed on said plate, including: means for holding the plate of the type holder in a desired position; and members in position to project inwardly over the ends of said plate to force said abutment members against the ends of the line of type on said plate.

15. A compacting device of the character described for use with a type holder having a plate and abutment members adapted to be pressed against a line of type placed on said plate, including: means for holding said plate in a substantially centralized position; and means for simultaneously moving said abutment members inwardly in such manner that they will be centralized relative to said plate and pressed against the ends of the line of type on said plate.

16. A compacting device of the character described for use with a type holder having a plate and abutment members adapted to be pressed against a line of type placed on said plate, including: a body having a guide adapted to receive said plate of said holder in transverse position; and walls converging relative to said guide for forcing said abutment members inwardly against the type on

said plate when said plate is moved forwardly in said guide means.

17. A compacting device of the character described for use with a type holder having a plate and abutment members adapted to be pressed against a line of type placed on said plate, including: a body having a longitudinal major channel adapted to receive the plate of the type holder in transverse position, there being a smaller channel formed in the bottom of said major channel; and wall members extending inwardly over the edges of said major channel, said wall members having forwardly converging edges adapted to engage the abutment members of said holder as the plate of said holder is moved forwardly in said major channel.

18. A compacting device of the character described for use with a type holder having a plate and abutment members adapted to be pressed against a line of type placed on said plate, including: a body having a guide adapted to receive said plate of said holder in transverse position; walls converging relative to said guide for forcing said abutment members inwardly against the type on said plate when said plate is moved forwardly in said guide means; and means for moving said plate forwardly along said guide.

19. A type holder of the character described, including: a flat plate adapted to receive a line of type on the upper face thereof; abutment members adapted to engage the ends of a line of type so placed on said plate, said abutment members being movable longitudinally on said plate, and having faces on the ends thereof which relatively converge; and means for securing said abutment members immovably to said plate.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 2nd day of June, 1931.

GEORGE BAKER.