

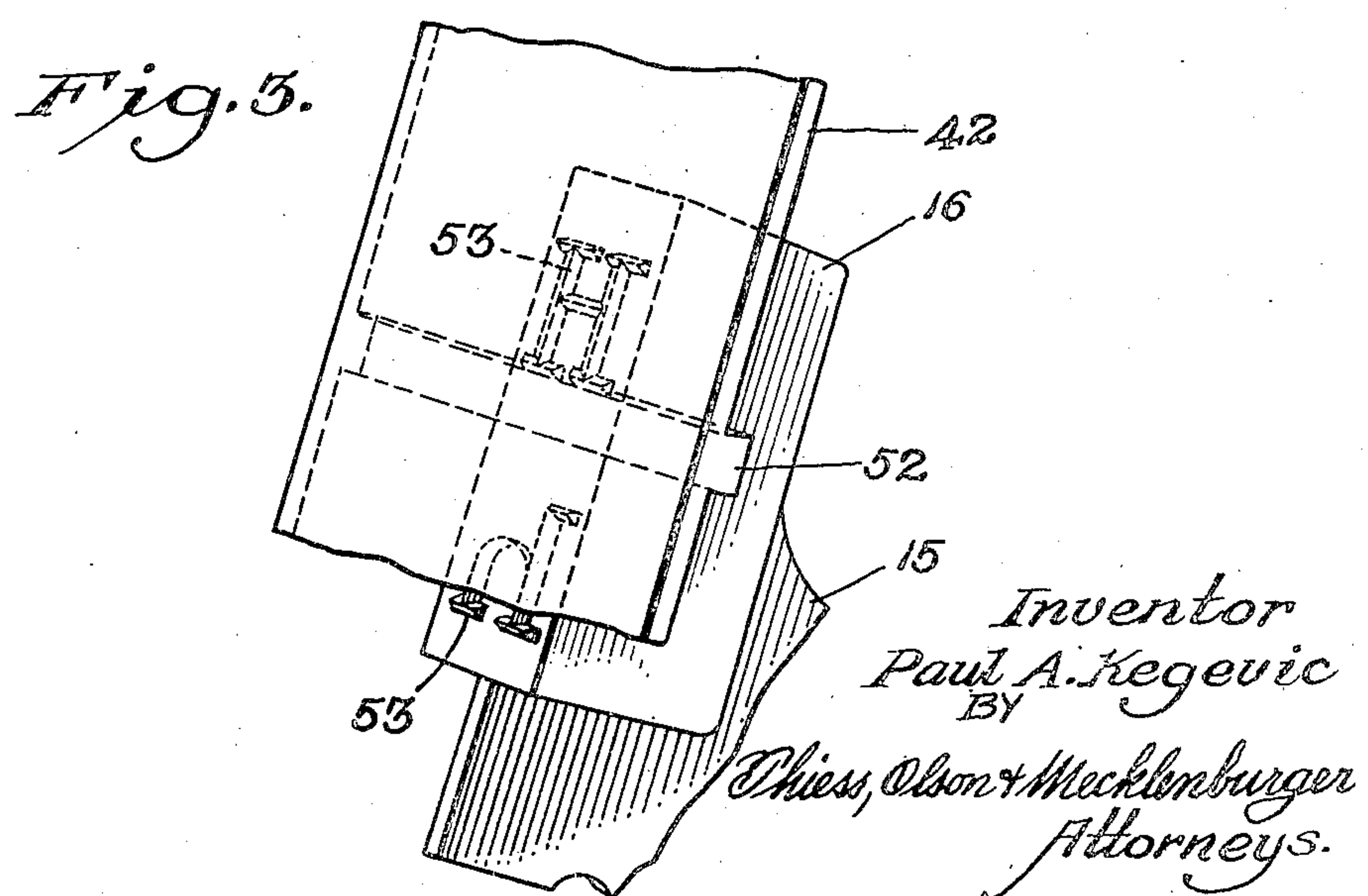
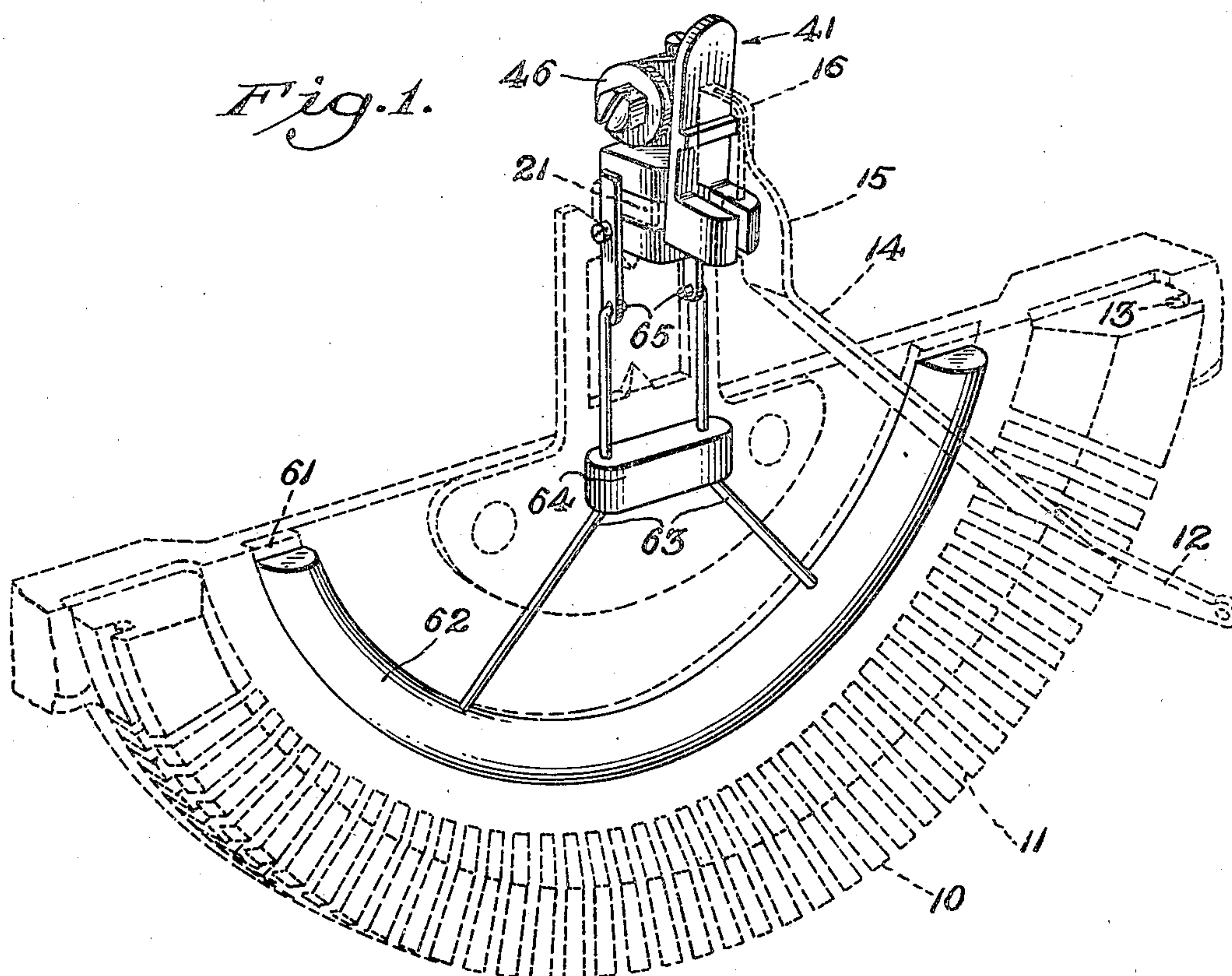
Oct. 25, 1949.

P. A. KEGEVIC
TYPE SOLDERING JIG

2,486,171

Filed Jan. 31, 1945

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

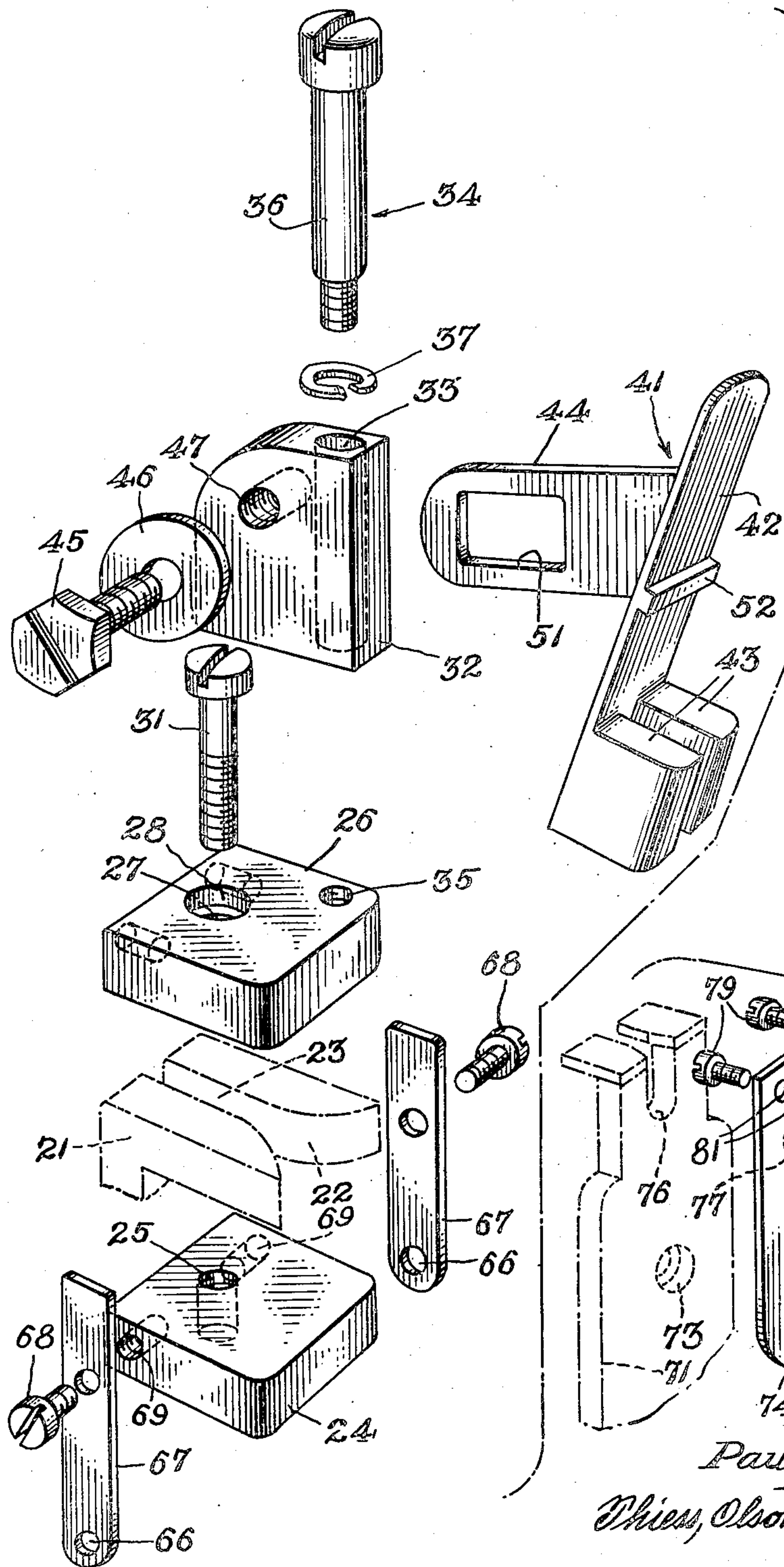


Fig. 2.

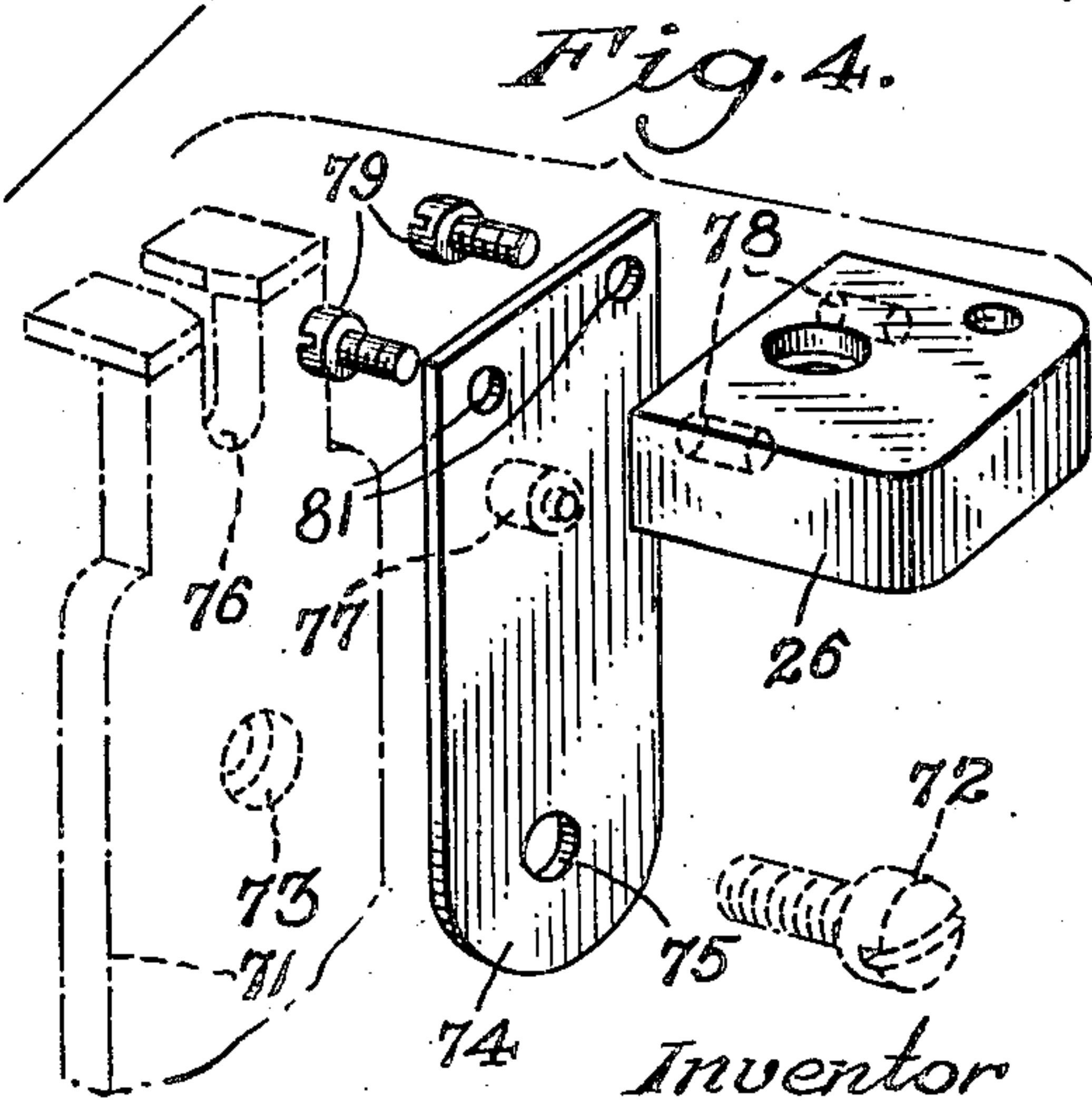


Fig. 4.

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UNITED STATES PATENT OFFICE

2,486,171

TYPE SOLDERING JIG

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Application January 31, 1945, Serial No. 575,502

6 Claims. (Cl. 113—59)

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This invention relates to an appliance for use in locating the type head with respect to the type bar of a typewriter or like machine, and to maintain the desired relation between the type head and type bar while an operation, for example, soldering the two together, is performed thereon.

In typewriters, Teletypes and various types of accounting machines, the characters are in the form of embossments carried on a saddle-like portion known generally as the type head and, in the case of a typewriter, for example, the upper and lower case characters are positioned in pairs, there being a pair to each type head. The type head is carried at one extremity of a type bar which is pivoted at its opposite end in a suitable support on the machine so that as the type bar is operated the type head is brought into position against the paper to make the impression. Generally the type bars are arranged on a circular segmental support, each type bar when operated occupying a position substantially radially with respect to the segment and the upper portion of the type bar is bent so that when a selected key is struck its type head will be brought into position to impress a character on the paper.

It is extremely important that the characters be in alignment when impressed upon the paper, since horizontal or vertical misalignment of only a few thousandths of an inch is easily discernible by the naked eye. Accordingly when the machine is assembled at the factory great care is taken to align each character with respect to all others to produce equal spacing thereof along a line of typing, and perfect alignment of each character vertically with respect to the ones adjacent thereto.

To facilitate such alignment the head carrying the type faces is manufactured separately from the type bar and then when the type head is properly positioned, solder is sweated between the type head and type bar to fix the two in permanent relation.

During use the original factory adjustment will be disturbed, not only by abuse on the part of the operator in striking more than one key at a time, but by wear of the parts, for example, the pivot on which the type bar swings or the slots within which the type bars are guided. For this reason the service mechanic must from time to time realign the type heads or replace one which has become unduly worn. Heretofore it has been necessary in some types of machines to remove the pivot from the type bar segment, this pivot being common to all type bars, and to withdraw

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a selected type bar upon which work is to be performed. This type bar is placed in a jig to locate the type head with respect to the type bar, the head unsoldered, and then resoldered in the desired new position, or a replacement head installed.

It will be apparent that this mode of repair is time-consuming and expensive, and that if the first adjustment is not successful the entire operation must be repeated and with the same problem of disassembly.

Because of the fact that a typewriter, for example, is a very compact machine, it has been considered that to attempt to install a soldering jig on the machine itself and thus avoid removing the type bars will necessitate radical changes in the design of the machine to accommodate the same. However, I have found that it is not necessary to dismantle any parts of the machine to perform a soldering operation as aforesaid, and the improvement herein comprises an appliance which is adapted to be fitted on the machine without removing any of its parts, the device being simple and adaptable to all known makes of typewriters with the exception of one particular make, in which case by using an additional few parts the appliance may be universally employed.

Accordingly, the principal object of my invention is to provide an appliance to facilitate the location of a type head with respect to a type bar while the two are being readjusted and resoldered, and which can be applied to the machine without disturbing any of its parts.

Another object is to provide an appliance of the type described which will comprise a minimum number of parts of simple, inexpensive nature.

Still another object is to provide an appliance of the type described having adjustable features whereby any selected type bar may be serviced regardless of its position on the segment.

Another object is to provide a device which may be instantaneously applied to any make of typewriter in general use.

A further object is to provide an appliance of the type described having means for locating the type face accurately in so far as its position with respect to the plane of the paper is concerned.

Other and further objects will appear as the description proceeds.

In the drawings,

Fig. 1 is a perspective view showing the appliance in full lines and the related parts of a typewriter in dotted lines;

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Fig. 2 is an exploded view of one part of the appliance showing each of its component parts;

Fig. 3 is a somewhat enlarged view of a portion of the locating anvil, a type head and a portion of a type bar; and

Fig. 4 is an exploded view of the alternative arrangement when the appliance is used in connection with a typewriter manufactured by the L. C. Smith Company.

Referring now to Fig. 1, type bar segment 10 of a typewriter is shown as comprising a member having a plurality of slots 11 into which are fitted the type bars 12. An arcuate pivot bar 13 is fitted about the segment 10 and receives thereon the plurality of bars 12, the latter being adapted to pivot thereabout from rest position to impression position. For simplicity, only one type bar 12 is shown and this comprises the body portion 14 terminating in the bent portion 15, and supporting at its outward extremity as by soldering or the like, a type head 16.

A typical type head 16 would have a substantially U-shaped cross section, the space between the legs thereof being adapted to fit reasonably snugly upon the portion 15, sufficient space being left therebetween to receive solder or like material. It will be understood that the type head when loose is adjustable in two planes, the adjustment in the third plane being effected by bending the type bar 12 with a pliers or similar tool.

The typewriter is also provided with a type guide 21 more clearly shown in Fig. 2, this comprising essentially two spaced-apart elements having a throat 22 and a guiding channel 23, the portion 15 of the type bar 12 being adapted to enter the throat 22 and then be guided in the channel 23 to its impression position.

The appliance of the invention includes two clamping plates (Fig. 2), the lower plate 24 being a simple block of metal having a threaded aperture 25 therethrough, and the upper plate 26 being similar to the plate 24 except that it is provided with a body hole 27 and a counterbored recess 28 thereabove. In attaching the appliance to the type guide 21 the two plates are positioned as shown in Fig. 1 and the screw 31 passed through the hole 27 and threadedly engaged with the hole 25 whereby the two plates are rigidly clamped to the type guide. It will be understood that the diameter of the screw 31 is such that it will just pass freely through the channel 23.

Positioned above the plate 26 is a support 32 comprising a substantially rectangular block of metal having an aperture 33 therethrough. A shoulder screw 34 is adapted to pass through the aperture 33 and be threadedly engaged with an aperture 35 in the plate 26. It will be understood that the length of the shoulder portion 36 is slightly less than the height of the support 32 so that the screw 34 may be employed to tighten the support 32 rigidly in any selected position with respect to the plate 26. That is to say, when the screw 34 is slightly loosened the support 32 may be swung about the axis of the screw over any desired angle, the upper surface of the plate 26 being flush by reason of the recess 28 receiving the head of the screw 31. A lock washer 37 serves to prevent accidental dislodgment of the support 32 after the screw 34 has been tightened.

Adapted to be fastened to one face of the support 32 is the justifying abutment 41 which comprises the anvil 42, the guiding projections 43 and a supporting arm 44, the latter being prefer-

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ably positioned angularly downwardly with respect to the anvil 42 as shown.

The anvil member 41 is adjustably secured to the support 32 by means of a screw 45 and washer 46, the screw 45 entering a threaded aperture 47 in the support 32. The arm 44 is provided with an aperture 51 which may be rectangular, as shown, or oval, and somewhat larger than the diameter of the shank of the screw 45 and this, together with the rather large washer 46, permits the arm 44 to be locked in any of a plurality of adjusted positions not only angularly in a vertical plane but fore and aft of the typewriter and securely held therein.

The face of the anvil 42 is also provided with a projection 52 transversely thereof and extending outwardly from the face an amount slightly less than the height of a type character 53 (Fig. 3). As clearly shown in Fig. 3, the projection 52 has a vertical height which is less than the clear space between adjacent edges of upper and lower case characters of a selected type head. The guiding projections 43 may be, as shown, integral parts of the anvil member 41 or if desired these may be fastened with screws passing through slotted holes and hence adjustable so as to increase or decrease the width of the channel therebetween. Thus, type bars of varying thickness may be accommodated.

The majority of typewriters are provided on the segment ring with a segment bar 61 (Fig. 1) against which the several type bars may strike when a key is operated and thereby limit to a uniform extent the position of all type bars as the type face is brought into contact with the paper. In employing the appliance of my invention it will now be apparent that when a type bar and its head are being worked upon the position of the type bar and head is somewhat removed from its normal impression position. Accordingly it is necessary to provide some means whereby as each type bar is operated upon it will be brought to a uniform forward position. This is accomplished by using an arcuate member 62 preferably having a cross-section adapted to provide a point contact with the type bar brought thereagainst, e. g., substantially semi-circular. The member 62 is provided with a pair of supporting rods 63 suitably braced by a spreader 64 rigidly affixed thereto, the lower ends of the rods 63 being rigidly affixed within holes in the member 62. The upper extremity of the rods 63 are preferably positioned parallel and the extremities thereof are bent toward each other, as shown at 65, to freely enter apertures 66 in the hangers 67. The latter are preferably of spring steel so that in installing the appliance for use the same minus the member 62 and its rods 63 may be positioned first. Thereafter the member 62 is placed in position and the extremities 65 engaged with the apertures 66, the members 67 yielding to permit such engagement.

The hangers 67 are attached to the lower plate 24 by means of screws 68 engaging correspondingly threaded apertures 69 therein. It will be noted from Fig. 1 that the hangers 67 extend upwardly sufficiently to lap the sides of the upper plate 26 to facilitate the positioning of the plates 24 and 26 before they are tightly clamped by the screw 31.

In use the appliance as illustrated in Fig. 2 is clamped to the type guide 21 as described. Then the member 62 is engaged with the rest of the appliance as previously pointed out. Now a selected type bar 12 to be operated upon is

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brought into position by pressing its key and with the screws 36 and 45 loosened the anvil 42 may be swung to occupy a position such that the face thereof is in contact with the faces of the type characters 53, the portion 15 entering between the projections 43 to maintain the desired position of the type bar 14. Assuming for example that the type head 16 has become worn so that one side of a type character is impressing itself more than another the support 32 and anvil 42 will now be slightly adjusted to compensate for that error. Now the solder can be melted, the type head moved so that the face of the character is again flat against the anvil 42 and with the bottom of the upper case letter resting on the upper edge of the projection 52 and the head resoldered to the portion 15. By analogy to letterpress printing, the foregoing operations may be described as the justifying of the type head.

As another example, assume that the character H illustrated is vertically out of line with the remaining characters. It will be understood that the lower edge of all upper case characters are in alignment at impression position. In such case an adjacent type bar which is functioning properly will be pressed to bring its type head against the anvil. The anvil will be adjusted so that the upper edge of the projection 52 is against the bottom of the upper case character and is then locked in such position. That type bar is returned to its normal resting position and the defective type character brought against the anvil. The solder is melted, the defective type head moved downwardly or upwardly until the bottom of the character H is against the upper edge of the projection 52, and the type head resoldered. Inasmuch as the projection 52 is provided also with an accurate lower face it is possible, whenever an upper case character which extends below the writing line, e. g., the letter "Q," is encountered, to utilize that lower face and align the type head by positioning a lower case character thereagainst. Otherwise the appliance is used as heretofore detailed.

It will be apparent that the appliance is not limited in its use to the repair of a type head in need of mere adjustment, but that it is equally employable in connection with the installation of a new character to replace one that is worn or missing.

From the preceding description it will be seen that I have provided a soldering gauge or jig capable of being adjusted to any desired position for properly locating a type head and soldering the same to its type bar, the normal flat surface of the anvil 42 serving to locate the type face proper, the projection 52 serving to locate a type character upwardly or downwardly and the slot between the projections 43 maintaining a desired position of the portion 15 for lateral adjustment of a character. Moreover, the appliance may be used without removing any parts of the typewriter; even the cover need not be disturbed. The member 62 may be inserted through the normal space existing between the cover and the region in which the type bars operate against the platen.

If desired the member 62 may be provided with screws adapted to bear against the ring 61 since under certain circumstances it may be necessary to move the member 62 inwardly or outwardly.

Typewriters manufactured by the L. C. Smith Company are provided with a type guide somewhat different than the standard form shown in Fig. 2. Such modified type guide is indicated

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in Fig. 4 by the reference numeral 71. It is provided with a screw 72 entering an aperture 73 therein. When it is necessary to employ my appliance on a typewriter of that make I utilize the additional plate 74 which is provided with an aperture 75. Thus by removing the screw 72 and locating the plate 74 in position with its aperture 75 in alignment with the aperture 73 the screw 72 may be reinserted to support the plate 74. Moreover, there is a U-shaped opening 76 in the type guide 71 and a cylindrical pin 77 riveted to the plate 74 is adapted to engage therein for proper vertical alignment of the plate 74 and its retention in such position.

The block 26 is provided with two threaded openings 78 with which two screws 79 are adapted to engage. These pass through apertures 81 in the plate 74 and are threadedly inserted in the holes 78 whereby the plate 26 may be rigidly clamped to the plate 74 to provide a base for the support 32, anvil 42 and its associated parts. Otherwise the device is employed in servicing as hereinbefore described. It will be understood that in the embodiment of Fig. 4 the plate 24, the member 62 and their related connections are not used.

Further modifications will be apparent to those skilled in the art and it is desired, therefore, that the invention be limited only by the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. An appliance for use in aligning a type head with a type bar of a typewriter or the like, said typewriter having a platen, a type bar guide and type bars mounted thereon and said type bars being guided and controlled by said guide as the type head approaches the paper, comprising in combination, a pair of plates adapted to embrace the top and bottom of the type guide of the typewriter, means to clamp said plates to said type guide, a support mounted on the upper of said plates and rotatably adjustable about a vertical axis, a member adjustably carried by said support, said member including a first element to guide the type bar to predetermined position and a second element to support the type head in predetermined position relative to the type bar, the said support and member being independently adjustable to accommodate any selected type bar and its associated type head whereby in repair work the type head may be replaced or reset without removing either the platen, the type bar or the type bar guide from the typewriter.

2. A typewriter appliance for use with a typewriter having a platen, a type bar guide and type bars mounted thereon and said type bars being guided and controlled by said guide as the type head approaches the paper, said appliance comprising a device having means for guiding and controlling the movement of the type bar and for supporting the type head in proper position to be secured together, and means for detachably mounting said appliance on said type bar guide in such position that said first mentioned means may be engaged by and guide the type bars to position when moved toward impression position whereby in repair work the type head may be replaced or reset without removing either the platen, the type bar or the type bar guide from the typewriter.

3. A typewriter appliance for use with a typewriter having a platen, a type bar guide and type bars mounted thereon and said type bars being guided and controlled by said guide as the type

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head approaches the paper, said appliance comprising a device having means for guiding and controlling the movement of the type bar and for supporting the type head in proper position to be secured together, and means for detachably mounting said appliance on said type bar guide in such position that said first mentioned means may be engaged by and guide the type bars to position when moved toward impression position whereby in repair work the type head may be replaced or reset without removing either the platen, the type bar or the type bar guide from the typewriter, said controlling means comprising means engageable by the type bars for limiting their movement toward impression position.

4. In the art of repairing typewriters and the like an appliance for maintaining the relation of a type head with its type bar while securing the two, which appliance comprises a support having means for detachably securing the same to the type bar guide, an anvil carried by said support and adjustable with respect thereto in a plurality of vertical, fore-and-aft and angular positions, means for securing said anvil to said support in any said position or combination thereof, said anvil having a surface upon which the printing faces of a type head may rest and a ledge projecting from said surface, said ledge having a height measured from said surface no greater than the height of the type character above the body of the type head and a width measured on the vertical axis of a type character less than the space between the upper case and lower case characters of the type head.

5. An attachment for justifying the position of a type head of a typewriter or the like with respect to a type bar comprising a support having means for detachably securing it to the type bar guide of the typewriter, a justifying abutment adjustably mounted on said support, said abutment

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including a face with which the face of a type character of the type head may be engaged, means for angularly adjusting said abutment about a substantially vertical axis, and means for adjusting said abutment fore and aft with respect to the type face.

6. A typewriter appliance for use with a typewriter having a platen, a type bar guide and type bars mounted thereon and said type bars being guided and controlled by said guide as the type head approaches the paper, said appliance comprising a device having means for guiding and controlling the movement of the type bar and for supporting the type head in proper position to be secured together, and means for detachably mounting said appliance on said type bar guide in such position that said first mentioned means may be engaged by and guide the type bars to position when moved toward impression position whereby in repair work the type head may be replaced or reset without removing either the type bar or the type bar guide from the typewriter.

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