

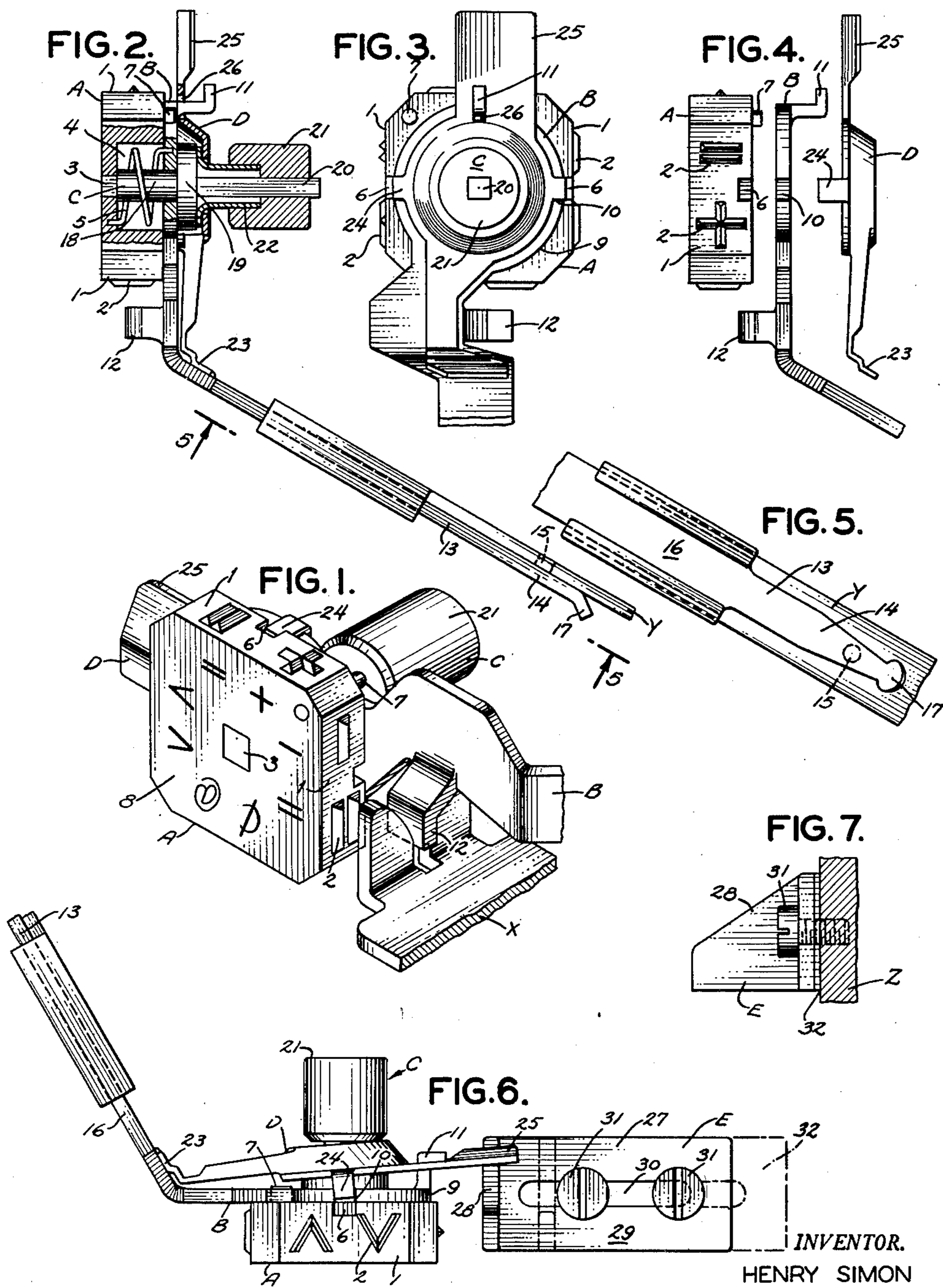
**Feb. 24, 1953**

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**2,629,478**

SUPPLEMENTARY LETTER DEVICE FOR TYPEWRITERS

Filed June 3, 1948



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## UNITED STATES PATENT OFFICE

2,629,478

SUPPLEMENTARY LETTER DEVICE FOR  
TYPEWRITERS

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Application June 3, 1948, Serial No. 30,853

11 Claims. (Cl. 197—37)

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This invention relates to typewriters and the elements thereof.

An object of the invention is to provide an improved form of typewriter in which some type bars are provided with a plurality of type faces, so that each type bar may be employed to print any one of a number of types.

Another object of the invention is to provide an improved form of typewriter type bar which is conventional in shape adjacent its proximal end, and which has at its distal end a type block with more than one type face, the type block being turnable to present any selected type face for striking against the paper overlying the platen.

A further object of the invention is to supply letters or symbols additional to the standard keyboard of conventional type-bar typewriters without increasing the number of keys.

Still another object of the invention is to provide an improved form of typewriter construction of the kind described, which requires no substantial changes in the main design of the typewriter from those conventionally used, but which enlarges the field of use of the typewriter.

Another object of the invention is to provide an improved typewriter type bar which is simple in design, includes a plurality of double-letter type faces lying in different planes, and is inexpensive to manufacture, being easily installed in any typewriter without structural alteration thereof, in place of one or more of the type bars therein.

Other objects and advantages of the invention will become apparent from the following description of a preferred embodiment thereof as illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of the device in the printing position,

Figure 2 is a top plan view of the device shown in Figure 1, certain of the parts being sectioned in plan as shown,

Figure 3 is a right side elevation of the device shown in Figure 2,

Figure 4 is a plan view similar to that of Figure 2, but showing the parts in exploded relationship, some parts being omitted for clarity,

Figure 5 is a fragmentary elevational view taken on line 5—5 of Figure 2,

Figure 6 is a top plan view of the type bar in idle or "home" position, showing as a modification, its engagement with an automatic trip member, and

Figure 7 is a right side elevation of the trip member shown in Figure 6.

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In the use of typewriters, it is frequently apparent that the standard keyboard does not have room for all the characters required by writers with specialized needs. Thus, for example, it is helpful to have, somewhere on the keyboard, a "plus" sign, and also an "equals" sign. In certain foreign languages, certain marks are frequently used, such as the "umlaut" in German, and the various accents in French. The present invention makes it possible to have on each type bar, more than one pair of type faces, so that the needs of the writer are easily met.

The invention makes use of the well known principle of a type bar with a detachable head having a revolvable or indexable type block with four or more double-letter faces, but of novel or improved construction, so that either no changes in the design of the typewriter, or practically no changes, are required, and which affords maximum speed and convenience in use.

In order to understand clearly the nature of the invention, and the best means for carrying it out, reference may now be had to the drawings, in which like numbers denote similar parts throughout the several views.

The device includes four principal elements, namely, the type block A, the type bar end or carrier, B, the spindle unit C, and the index lock D. In addition, there may be a separate and optional part or element, the automatic trip unit E.

In the drawings, type block A is shown with four type faces 1, although more faces may be used. Each face carries a pair of types 2, like ordinary type bar heads. At 3, type block A is firmly fixed to one end of a spindle unit C, the end of the spindle unit being squared off and inserted through an aperture of similar shape in the type block A, so that they will normally turn together.

In that side bearing against carrier B, type block A has a recess 4, shown best in Figure 2, for a coil spring 5, which engages with its two ends in type block A and carrier B, respectively, and serves to return the type block to its initial position. In the edge midway of each type face, type block A further has an index notch 6. A stop pin 7, near one corner of the type block A and extending a short way from its rear surface, finally, is provided to arrest type block A on its return in the initial position.

At 8, on the front surface of the block, the types corresponding to the several faces, are marked, so as to readily indicate to the typist, the locations of the types on the four faces of the type block.

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The carrier B has at its forward end an enlarged circular portion 9 with a concentric hole, to serve as bearings for the rear surface of the type block A and the spindle of unit C. At opposite points of the circular portion of the carrier B are two notches 10, corresponding to the notches 6 in block A, while extending at right angles from the end is a hook-shaped stop 11 for checking the motion of index lock D.

The neck portion of carrier B is curved up or humped to miss the type guide X provided on the typewriter, and bears a spur 12 so located as to center type block A in guide X in the same way that the neck of a regular type bar centers the type. At 13, the carrier terminates in a tapered tail 14 having a tooth 15 designed to engage in a corresponding hole in and to locate carrier B lengthwise on type bar stub Y. Type bar stub Y forms a permanent part of the machine and resembles the conventional type bars in all ways, except that it terminates in a bayonet seat to receive the central shank portion 16 of the carrier B in a snug fit.

By its bent-up tip 17, tail 14 can be lifted and disengaged from the hole in the stub Y when the device is to be removed, as in exchanging it for one with another type set. This is thus accomplished without the use of any tools.

The spindle unit C consists of the spindle or shaft the left hand portion 18 of which carries type block A and passes through the recess 4 in the type block, where it is encircled by the spring 5. The central portion 19 is enlarged to form a circular thrust flange to prevent endwise motion of the spindle and type block.

The right hand end portion 20 of the spindle is square in cross section as best seen in Figure 3, loosely fitting a corresponding square bore of handle 21. Index handle 21 has in its inner end a recess tightly fitting a sleeve 22 extending also through an opening in index lock D and engaging with its flanged portion under index lock D, as best seen in Figure 2. It will be seen that with this arrangement, index handle 21 with the sleeve 22 can be both turned about its axis, and/or moved endwise, that is in an axial direction, to rotate the spindle together with type block A, and/or to raise and disengage index lock D.

One end of index lock D is of a U-shaped section terminating in a crimped flattened portion with a foot 23, by which it is fixedly attached to carrier B by some means such as spot-welding or the like. The central portion of the lock D is dish-shaped and fits loosely over thrust flange 19 and sleeve 22, being apertured as shown in Figure 2 to receive the sleeve 22. On two opposite sides, at points matching the notches 11 in carrier B, the circular portion of the index lock bears a pair of bent-down tongues 24 fitting the notches 10 of the carrier and 6 in the type block.

Through the spring action of the flat portion adjoining the foot 23, the index lock D is continually under tension against carrier B, and when a type face is in position for printing, the tongues 24 extend through the guide notches in the carrier B into two of the index notches in the type block and lock it against rotation.

A projecting flared ear 25 on the outer end of the index lock allows it to be disengaged, independently of handle 21, either by the touch of a finger or by a trip device provided on the machine, to cause block A to return under the urge of coil spring 5 to the basic position fixed by stop pin 7, if the block is in any other than this basic position. The opening motion of the index

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lock is limited to the range necessary for effecting release, and sidewise motion is prevented, by the hook-shaped stop 11 on carrier B which extends through a hole 26 in the index lock.

In Figures 1, 4 and 6, the type block A is in its initial position. To write other letters or symbols, type bar Y is raised by striking the key until handle 21 can be conveniently reached. The handle 21 is then pulled outward to disengage the tongues 24 on the index lock D from the notches 6 in type block A, and the spindle is rotated by turning handle 21 until the type block is in the required position, when upon releasing the endwise pull on the spindle, the tongues 24 engage in the corresponding set of notches on block A so that no further rotation of block A can take place, and the desired letter can be printed.

Such a position is shown in Figure 3. Type block A may be left in this position, if the same letter is to be written again after the type bar has returned; or the block may be restored to the initial position by pressing index lock D outward by its ear 25, thereby disengaging the tongues 24 and causing block A to return under the tension of coil spring 5.

Automatic return of the type block to the initial position may be effected by a trip E attached to the machine bed, as seen best in Figures 6 and 7. The design of such a trip will differ with the machine to which it is applied. In all cases, it will consist of a part with a steeply inclined surface arranged to press the index lock out of engagement by ear 25 as the type bar reaches the idle position. In Figures 6 and 7, trip E consists of a slide 27 having an upturned portion formed with an incline 28 and a body portion 29 with a slot 30, through which and a thin leaf spring 32 extend two screws 31 into the bed member Z of the machine at a point back of the type head in the home position.

The screws 31 are spaced relative to the length of the slot 29 and the device is located relative to the home position of type block A so as to enable the slide to be shifted with incline 28 into or out of reach of the flare on the ear 25 of index lock D, the slide being frictionally held in either position by the action of leaf spring 32.

It will be seen that by these means, the trip can be instantly made active or inactive by shifting it forward or backward, to cause index lock D to be either automatically opened and type block A returned to the initial position, or to be left in the set position, as desired.

To exchange the device for one with another type head, which may of course also have a regular two-letter type, it is merely necessary to disengage carrier B by slightly raising tail 14, as seen in Figures 2 and 5, when the device can be withdrawn from its seat on the type bar stub and the new device slid into place.

While the four essential elements, namely the type block A, the type bar end or carrier B, the spindle unit C and the index lock D, remain in all cases, parts of these devices may be left out in certain conditions. If the device is to be used on any type bar other than the end ones, for instance, handle 21—22 may be omitted and the type head turned with the finger tips in setting it. If no importance is attached to the spring return, coil spring 5 and ear 25 on the lock D may be omitted. The use of the trip E, finally, is altogether optional.

It will accordingly be understood, that while I have described my invention in specific terms,

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various changes may be made in size, shape, materials and arrangement without departing from the spirit and scope of the invention as claimed.

I claim:

1. In a typewriter, a type bar, and a multiple face type block revolvably supported thereon to permit any face to be turned into position for printing, a portion adjacent the forward end of the type bar being angularly offset to prevent interference with the type centering guide of the typewriter, and having a laterally offset spur for centering the type block in said centering guide.

2. In a typewriter, a divided type bar comprising a base portion resembling a conventional type bar but terminating in a channeled seat lengthwise of the type bar, a head portion carrying the type and formed at its other end with a shank fitting said channeled seat, an integral tail on said shank narrower than the opening of said seat, and interlocking means on said base and head portions to register and secure said two portions in correct lengthwise relation to each other.

3. In a typewriter, a type bar having a bearing formed therein, a spindle journaled in said bearing, a type block carrying a plurality of type faces and having an opening formed therein with the spindle engaging said type block opening to carry the type block and to turn therewith, whereby upon turning the spindle, the type block is turnable therewith to bring any desired type face into printing position, handle means on said spindle, means for locking said type block in printing position, and means including resilient bias for returning said type block to initial printing position as desired.

4. The construction according to claim 3, characterized further in that said resilient means is carried jointly by said type block and said type bar.

5. The construction according to claim 3 characterized further in that said means including resilient bias includes a spring engaging said type block and said type bar and biasing said type block and spindle toward initial position, and said means for locking said type block includes an index lock carried by said type bar, and locking lugs carried by said index lock and adapted to normally engage said type block to restrain motion of said type block, said index lock being retractable out of locking position to unblock motion of said type block, whereby the type block is free to be turned to move any desired printing face into printing position.

6. The construction according to claim 5, characterized further in that an integral extension is carried by said index lock, a cam member carried by the typewriter bed and having a cam surface, said cam member being adapted to be moved with its cam surface lying in the path of said index lock extension, whereby the extension engages with said cam surface and is moved thereby with the index lock to retracted position to unblock the motion of the type block, the block being then free to move under its resilient bias to return to initial position.

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7. In a typewriter, a type bar having a bearing therein, a spindle journaled in said bearing, a multiple-face type block disposed on one side of the type bar, said type block being mounted on one end of said spindle, a handle co-axial with and mounted on the other end of said spindle on the opposite side of the type bar, and coacting locking means on the type block and type bar for registering and holding the type block with any face in printing position.

8. In a typewriter, a type bar having a bearing therein, a spindle journaled in said bearing, a multiple-face type block mounted on one end of said spindle, coacting locking means on the type block and type bar for registering and holding the type block with any face in the printing position, and a handle mounted on the other end of said spindle in such relation as to allow the type block to be revolved by turning said handle and the locking means to be engaged and disengaged by sliding said handle sidewise.

9. In a typewriter, a type bar with a multiple-face type block adjoining one side of and revolvable around an axis normal to the type bar, a lock body disposed on the opposite side of the type bar, said lock body being movable substantially in the direction of the type block axis and guided in the type bar, and registering means on the type block for engagement by the lock body.

10. In a typewriter, a type bar with a multiple-face type block revolvable around an axis normal to the type bar, a lock body for holding the type block with any face in the printing position and movable in the direction of the type block axis, a fingerhold on the lock body for manipulating said lock body, and a handle for turning the type block to bring any face into the printing position.

11. In a typewriter, a type-bar with a multiple-face type block revolvable around an axis normal to the type bar and disposed on one side of the type bar, and a centering portion on said type bar and laterally offset by the amount required to center the type block in the type centering guide of the machine.

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