

May 14, 1940.

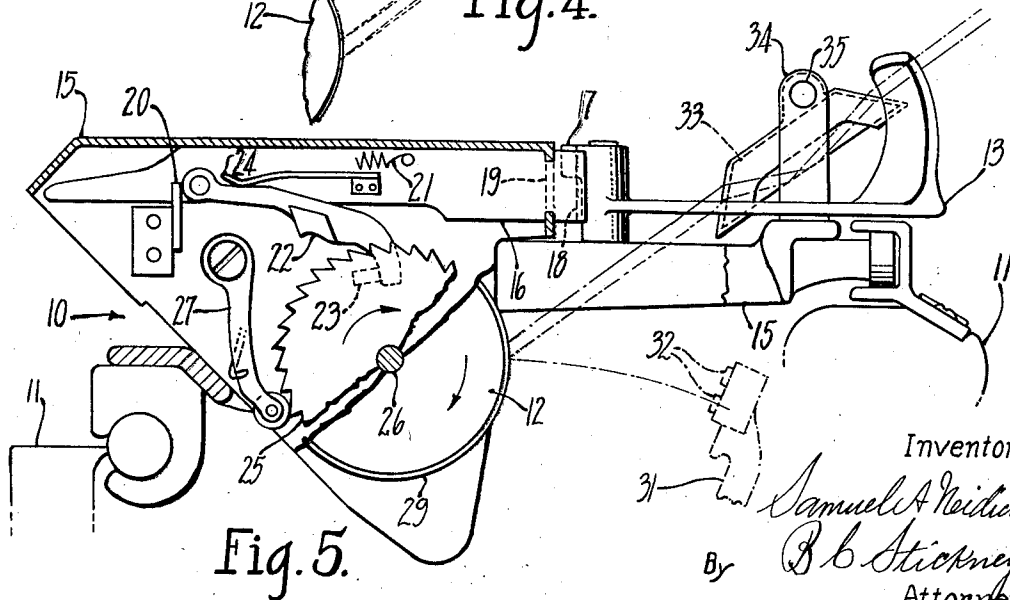
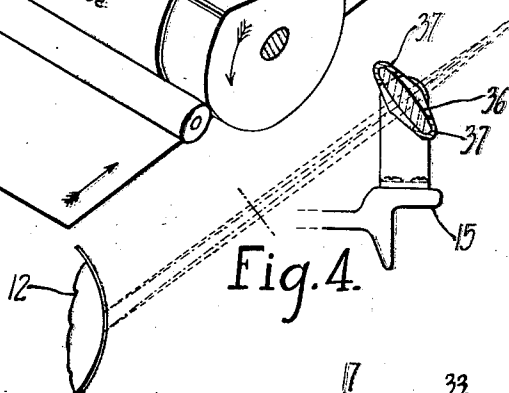
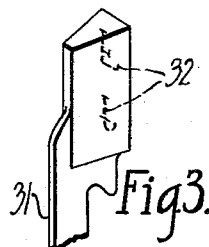
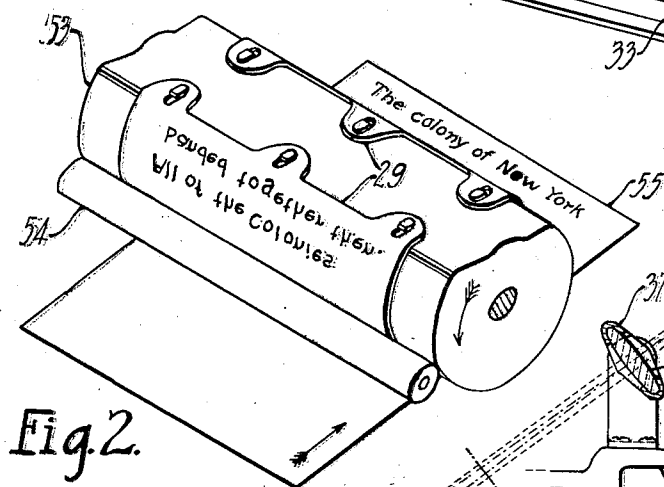
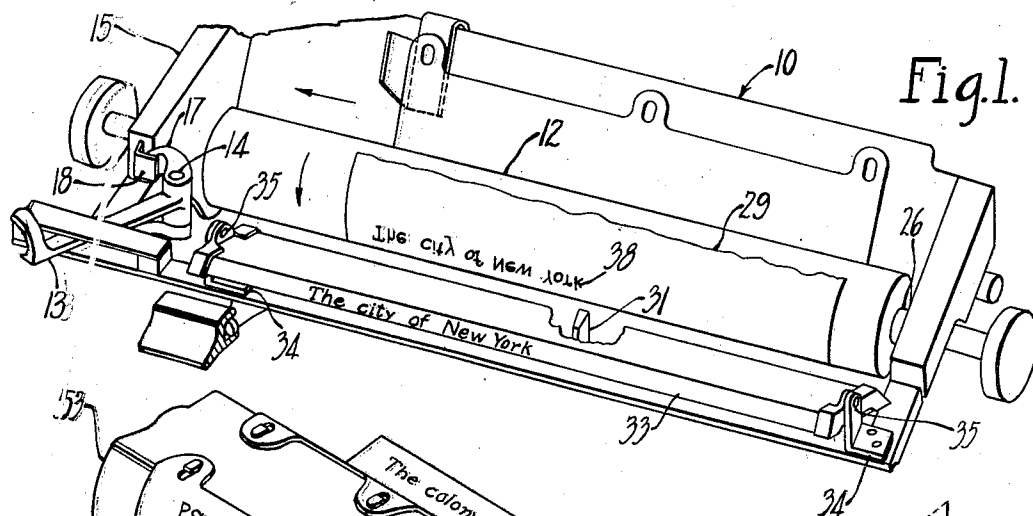
S. A. NEIDICH

2,200,932

TYPEWRITING MACHINE

Filed Feb. 10, 1937

2 Sheets-Sheet 1



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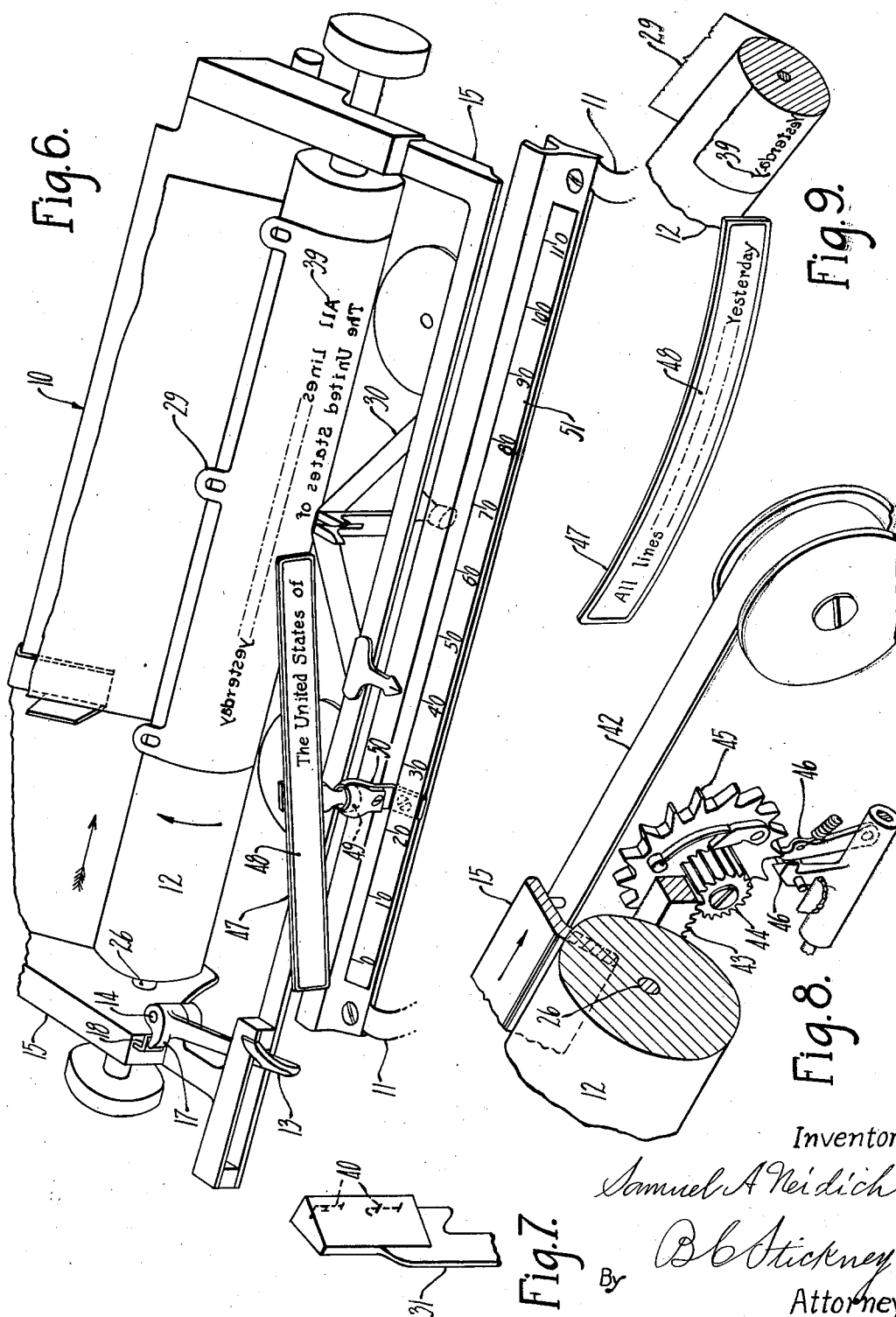
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2,200,932

2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

2,200,932

TYPEWRITING MACHINE

Samuel A. Neidich, Ventnor City, N. J., assignor
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York, N. Y., a corporation of Delaware

Application February 10, 1937, Serial No. 124,980

2 Claims. (Cl. 197—1)

This invention relates to typewriting machines for producing negative, that is either reverse or inverted type impressions, such as are used for the purpose of making reduplicative plates for use in copying by contacting the copy sheets directly upon the negatively typed reduplicative plate.

Master plates produced on the typewriter of my invention are for use principally in direct lithographic reduplication. Formerly, the metallic plate commonly used in machines such as the "Multilith", when typed on a standard typewriter, required the use of an offset roller on the lithographic machine, to produce normal copies. With either my reverse or inverted type machine such offset roller may be eliminated, thereby simplifying the construction and effecting a saving in the cost of the printing press, and expediting the work.

In one form of my invention I utilize types designed to create negative type impressions inverted about the printing line. The carriage of this machine is designed to letter-feed from right to left as in the usual machine, and the work-sheet is line-spaced in correlation to the inverted typing, that is, in a direction opposite to that of a standard typewriter. Stated in another way, the work sheet is line-spaced in the direction in which the inverted bottom portions of the characters typed will be trailing the top portions. Typing is started in the lower left hand corner of the master plate and ended in the upper right hand corner. Thus, the master plate is typed upside down or inverted, and reproductions made therefrom will read in a normal sequence.

When typing a master plate in this machine, a printer or experienced operator will have no difficulty reading the inverted type impressions, inasmuch as a typist may. It is therefore a feature of this invention to provide means in the form of an imprint-scope for creating a normal image of the printed matter for the convenience of the operator. Such erecting means or imprint-scope may be in the form of a double convex lens, adjustably positioned on the carriage, and extending the width of the platen. Or the erecting means or imprint-scope may be a prism, which may have one side mirrored. Both types of lenses are well known per se, and it is contrived to adapt them herein so that they will erect the printing so as to enable the operator to conveniently check on what is being typed.

In another form of my invention, the types are arranged to create a negative line of character impressions reversed on their vertical axes. In

this machine, the work-sheet is line-spaced upwardly like in a standard machine, but letter-feeding occurs in a direction opposite to normal, so that the carriage feeds from left to right. In typing a full page on this machine typing starts in the upper right hand corner of the master plate and ends in the lower left hand corner, so that in addition to the type being reversed, each line of the entire master plate is typed in reverse direction.

In order that the operator may check a full line on the master plate as it is being typed on this machine, I provide an optical transposing device in the form of a reversing mirror or reflector which may be adjustably mounted on the typewriter frame. This mirror may be either flat or curved.

The keyboard of my typewriter may be of standard design and arrangement.

Master sheets produced on the typewriter of my invention may also be used in spirit copying machines, commonly called Hectograph. Reverse or inverted type inked impressions of excellent clearness are produced directly on the working face of the reduplicative sheet.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a perspective view of the typewriter carriage adapted to the inverted type form of my invention.

Figure 2 is a perspective of the direct lithographic method of making copies from such a machine.

Figure 3 is an enlarged view of a type head of the same.

Figure 4 is a side view partly in section of one type of erecting lens.

Figure 5 is a side view showing the erecting prism and reverse line-space action.

Figure 6 is a perspective view of the reversed type machine.

Figure 7 is an enlarged view of a type head of the same.

Figure 8 is a perspective of the escapement and letter-feeding mechanism of the reverse type form of my invention.

Figure 9 is a perspective showing a curved reflector, reversed typed matter, and normal image of same.

Figure 1 illustrates the inverted type form of my invention as applied to an Underwood machine, in which a carriage 10 is slidably mounted on the typewriter frame 11 in the usual manner, and is arranged to letter-feed in the normal di-

resection as indicated by the straight arrow. Line-spacing mechanism, arranged to rotate the platen 12 in the direction of the curved arrow, is located at the left hand end of the carriage. As shown in Figure 5, line-space lever 13, secured by a pivot 14 to the carriage frame 15, is arranged to actuate a slide 16 by means of an arm 17 extending in back of a right angle extension 18 on the front end of the slide. The slide 16 is positioned on the carriage frame 15 by means of a slot 19 and bracket 20, and is maintained in its rearward position by means of a tension spring 21. Pawl 22, mounted on the slide, is urged against a cam guide 23 by means of a leaf spring 24, also secured to the slide. When the slide is urged forward by means of the line-space lever, the pawl 22 engages a ratchet-wheel 25 secured to the platen axle 26, and rotates the platen in the direction of the arrow. A detent arm 27 is provided to maintain the platen in position.

Printing on the master plate 29 is accomplished through a ribbon 30 by the usual type-bar 31. The type faces 32, as shown in Figures 1 and 3, are inverted and form inked impressions as at 38. It is obvious from said Figure 3, that the upper and lower-case types are respectively individual inversions of standard upper and lower-case type-characters upon a standard type-bar and that for this reason standard case-shifting mechanism can be employed in the novel typewriter. To enable the operator to read and check the typed matter, an erecting prism 33, secured in holders 37, is transversely mounted on the carriage frame 15 by means of brackets 34. Pivots 35 allow adjustment of the prism to align it to the operator's vision. The prism 33 may be of any well-known type and may or may not have its reflecting surface silvered.

Figure 4 illustrates an alternative image-erecting lens 36, said lens being an elongated bar having convex sides. The inverted image seen through such a lens will appear to the observer as a normal image.

Figure 6 illustrates another form of my invention, wherein the type faces 40 are arranged to create reversed inked impressions, such as at 39. In this machine, the line-spacing mechanism is of standard design, and the master plate 29 is fed into the machine in the usual manner. The carriage in this case, however, letter-feeds from left to right, i. e., in a direction opposite to a standard machine. This is accomplished, as shown in Figure 8, where the spring motor 41 tends to pull the carriage 15 to the right by means of the usual strap 42. The direction of the teeth on the feed rack 43, the pinion 44, and the escape-

ment wheel 45, as well as the stops of the escapement dogs 46, are the opposite to a standard escapement, in order to control the carriage against the spring motor 41.

In order to read the subject-matter being typed, a mirror 48 supported in a frame 47 is provided. This may be mounted on a ball joint 49 affixed in a bracket 50 mounted on the scale bar 51, and is inclined toward the printing on the master plate at such an angle that the operator is enabled to see therein a reverse (or normal) image of the typewritten matter. A curved mirror, such as shown in Figure 9, may be utilized to expand the image for easier reading. The mirror may be so constructed that several lines of typing are reflected therein.

Figure 2 illustrates the method of making lithographic copies, using a metallic plate printed with either inverted or reversed characters. The master plate 29 is attached to a cylinder 53. Upon rotation of the cylinder, the typed characters are inked from an ink roll 54 and transferred to a paper sheet 55 which contacts the master plate. No offset roller with its supplementary cleaning mechanism is required.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. In a typewriter adapted to type a work-sheet in the form of a reduplicative negative, in combination, a typewriter frame, a carriage, a platen supporting a work-sheet on said carriage, typing elements, having a common printing point, movably supported on the frame to type upon the front-side of said work-sheet, and having invert type-characters, means to letter-feed said carriage from right to left on said frame whereby invert characters will be typed at letter-space intervals from left to right upon said work-sheet, and means to impart line-space movements to the sheet on said platen in the direction in which the inverted bottom portions of the characters typed will be trailing the top portions.

2. A typewriter adapted to type a work-sheet in the form of a reduplicative negative, said typewriter having, in combination, typing elements having invert type-characters, means to letter-feed said work-sheet relative to said types whereby invert characters will be typed at letter-space intervals from left to right on said work-sheet, and means to line-space said sheet in the direction in which the inverted bottom portions of the characters typed will be trailing the top portions.

SAMUEL A. NEIDICH.