Sept. 13, 1955 R. N. HARTER 2,717,684

MULTIPLE USE TYPEWRITER

Filed Dec. 15, 1951 3 Sheets-Sheet 1

FIG. 1

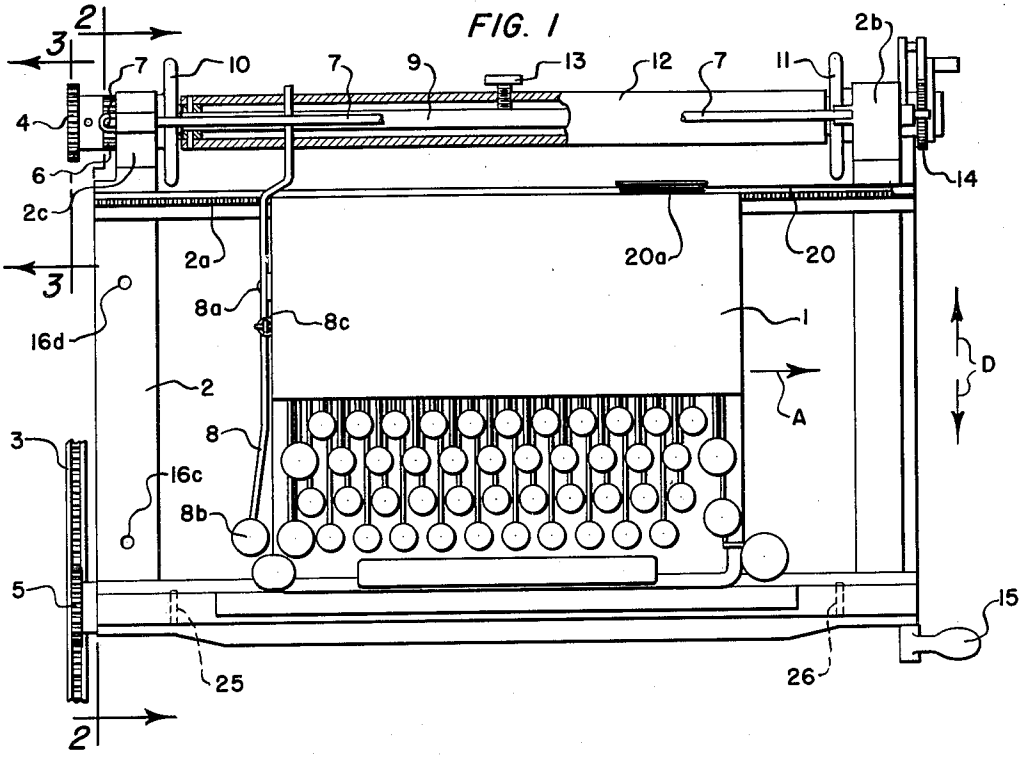


FIG. 2

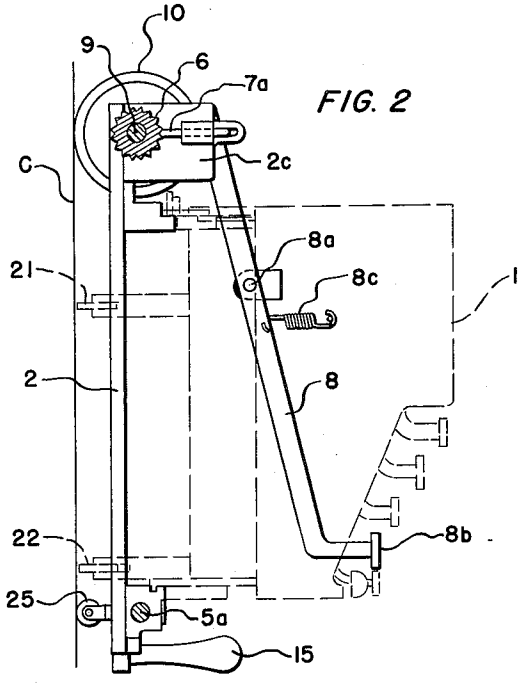
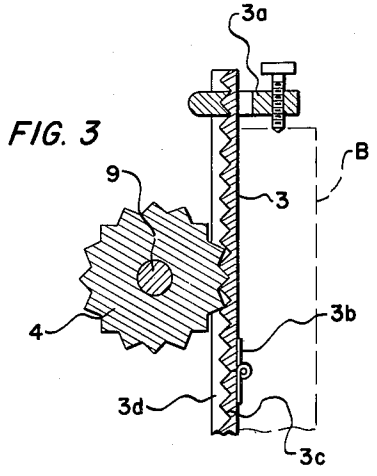


FIG. 3



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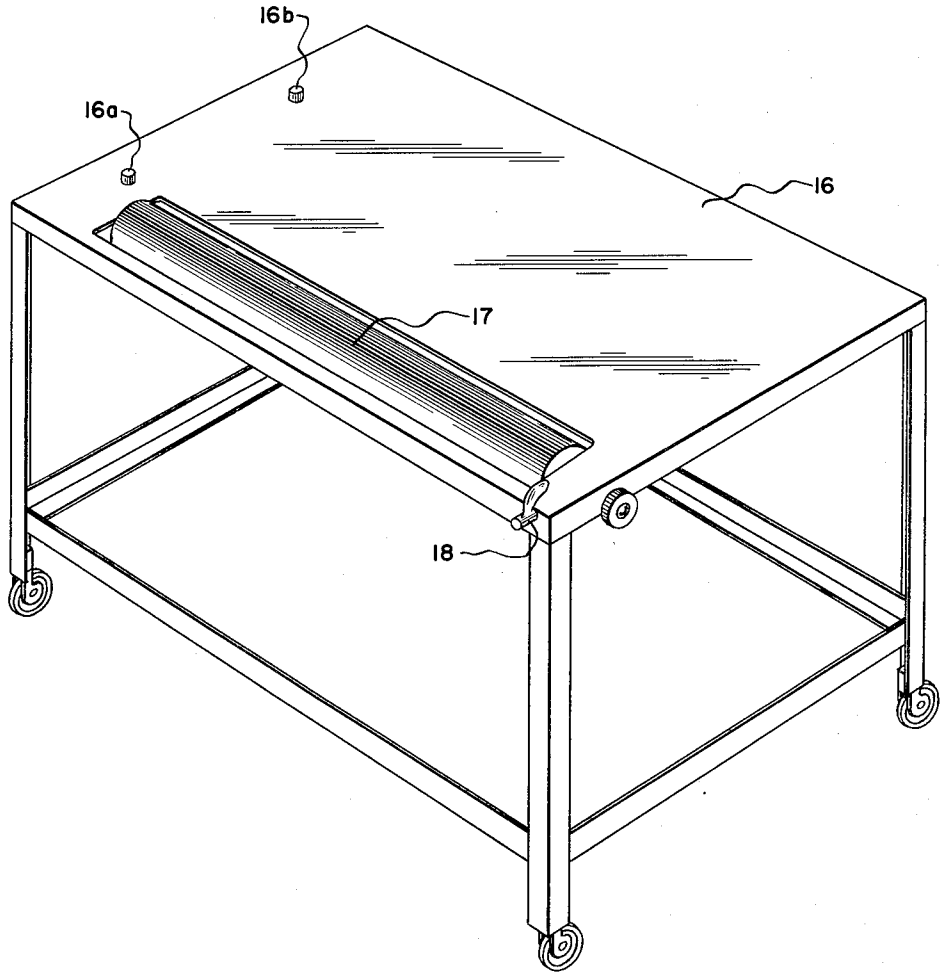
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MULTIPLE USE TYPEWRITER

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FIG. 4



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MULTIPLE USE TYPEWRITER

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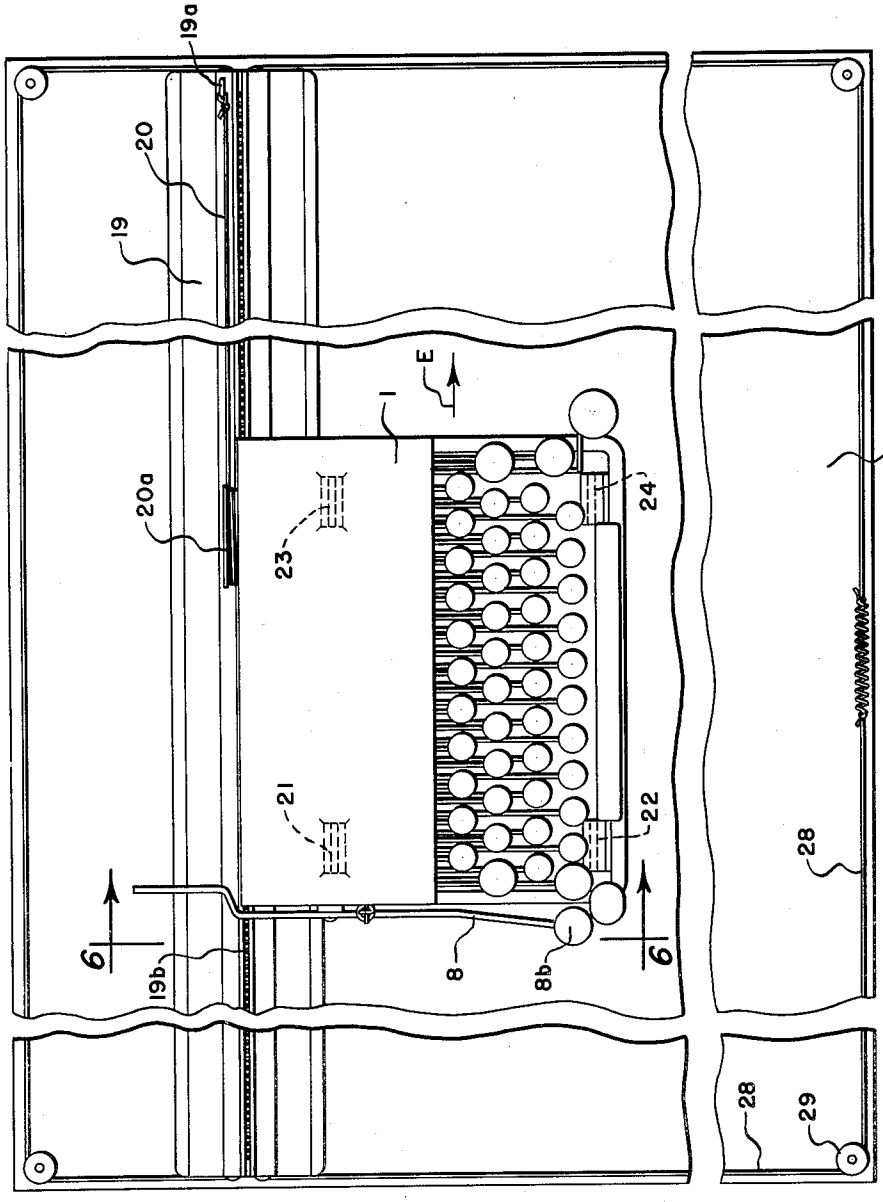


FIG. 5

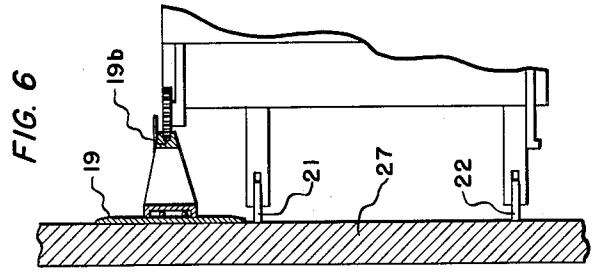


FIG. 6

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2,717,684

MULTIPLE USE TYPEWRITER

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Application December 15, 1951, Serial No. 261,866

2 Claims. (Cl. 197—2)

My invention relates to a multiple use typewriter, more particularly for typing on flat surfaces such as drafting tables or other similar surfaces and which may be used as a substantially conventional typewriter if desired and the objects of my invention are:

First, to provide a typewriter of this class which is particularly adapted for use in typing reference characters and numerals of particular data on drawings. In order to greatly facilitate the lettering of such drawings and to provide a uniform standard of neat, legible reference numerals and notes on drawings.

Second, to provide a typewriter of this class having novel means for controlling the movement thereof throughout the entire surface of a large drafting board and which promotes the operation of the typewriter in either longitudinal or lateral directional movement across the drafting board for the purpose of disposing the lines of print in various directions as desired.

Third, to provide novel traction means for moving the typewriter over various flat surfaces, therefore controlling the same in order to maintain parallel disposition of successive lines of type.

Fourth, to provide a typewriter of this class having novel traction and brake means promoting the use thereof on inclined boards whereby the typewriter, when spaced successively on such inclined boards is positively held at a certain line position until released for the disposition of the typewriter in alignment with the next successive line of print or reference characters.

Fifth, to provide a typewriter of this class having a novel arrangement of traction wheels which may be alternately used to support the typewriter when operated in different directions in connection with various control elements used to guide and motivate the typewriter.

Sixth, to provide a typewriter of this class which is readily, removably positioned on a flat table above a rotatable platen roller axially fixed to the table providing for substantially normal operation of the machine as a conventional typewriter in a stationary position.

Seventh, to provide a multiple use typewriter of this class which is very simple and economical in construction, efficient in operation and which will not readily deteriorate or get out of order.

With these and other objects in view as will appear hereinafter, my invention consists of certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawings and to the characters of reference thereon forming a part of this application in which:

Figure 1 is a top or plan view of my multiple use typewriter showing the same in operative relation with a guide track positioned on a conventional drafting board or other flat surface means.

Figure 2 is a sectional view taken from the line 2—2 of Fig. 1.

Figure 3 is an enlarged fragmentary sectional view taken from the line 3—3 of Fig. 1.

Figure 4 is a perspective view of the table on which my multiple use typewriter may be readily removably mounted for the purpose of operating the typewriter as a substantially conventional stationary typewriter.

Figure 5 is a top or plan view of my multiple use typewriter showing a modified form of guide track therefor and

Figure 6 is a sectional view taken from the lines 6—6 of Fig. 5 showing the drafting board fragmentarily.

Similar characters of reference refer to similar parts and portions throughout the several views of the drawings.

The typewriter **1**, frame **2**, track **3**, gears **4** and **5**, brake **6**, pawl **7**, control lever **8**, shaft **9**, traction wheels **10** and **11**, traction wheel shaft **12**, set screw **13**, ratchet wheel **14**, ratchet operating handle **15**, table **16**, platen roller **17**, roller ratchet handle **18**, parallel track **19**, cord **20**, wheels **21**, **22**, **23**, **24**, **25**, and **26**, and the conventional drafting board **27** constitute the principal parts and portions of my multiple use typewriter.

The typewriter as shown in Figs. 1, 2, and 5 of the drawings is a conventional typewriter adapted to print upon a flat surface therebelow. The frame **2** is a substantially conventional frame for supporting the conventional typewriter **1** and this frame **2** is provided with a conventional spacing rack **2***a* adapted to control the space movements of the typewriter in the direction as indicated by the arrow A in Fig. 1 of the drawings. The cord **20** on the conventional spring loaded reel **20***a* is adapted to force the typewriter **1** along the spacing rack **2***a* each time the conventional typewriter mechanism permits space release of the typewriter **1** so that the resilient spool **20***a* retracts the cord **20** and moves the typewriter **1** in the direction as indicated by the arrow A. The frame **2** is provided with extensions **2***b* and **2***c* in which the shaft **9** is revolubly mounted. Fixed on this shaft **9** are the gear **4** and ratchet wheel **14**. The gear shaped brake **6** is fixed to the shaft **9** and is engaged by the pawl **7** which is a horizontally extending bar having a vertically disposed end **7***a* adapted to engage the teeth of the brake **6**. This bar **7** is spaced parallel to the rack **2***a* and is engageable by the end of the lever **8** which is pivoted on the pin **8***a* in connection with the typewriter **1**. The key **8***b* is arranged for manual operation of the lever **8** while the spring **8***c* resists downward movement of the lever **8** and tends to return the key **8***b* upwardly after depression thereof. It will be noted that downward depression of the key **8***b* pivots the lever on the axis of the pin **8***a* and raises the pawl **7** from the teeth of the brake **6**. The gear **4** engages the toothed track **3** which is fixed to the drafting board B by means of such screw clamps **3***a* on opposite ends of the track **3**. This track **3** is constructed in sections and these sections are connected together by hinges **3***b* which provide foldable structure of compact form. It will be noted that the track **3** provided with the gear rack portions **3***c* is also provided wiht guide rails **3***d* on each side of the rack portion **3***c* in order to maintain alignment of the gears **4** and **5** thereon. The gear **5** is an idler gear rotatably mounted on the axle **5***a* connected with the frame **2**. The wheels **10** and **11** are fixed to the hollow shaft **12** in which the set screw **13** is screw-threaded and engageable with the shaft **9** for interlocking the shafts **9** and **12**. The wheels **10** and **11** are adapted to bear upon the upper surface C of the drafting board or other substantially flat means as shown in Fig. 2 of the drawings while the wheels **25** and **26** support the opposite portion of the typewriter **1**. The actual support of the typewriter **1** is thus accomplished while the gear **4** provides traction with the rack **3** and the gear **5** helps to maintain alignment of the type-

writer in its spacing movements in the directions as indicated by the arrows D in Fig. 1 of the drawings. The ratchet wheel **14** fixed to the shaft **9** is engaged by a conventional adjustable pawl mechanism connected with the lever **15** which provides for manual spacing of the typewriter **1** due to traction of the gear **4** on the rack **3**. Such traction is accompanied by free movement of the shaft **12** around the shaft **9** and disengagement of the set screw **13** with the shaft **9**.

The table **16** is provided with a pair of upwardly projecting dowels **16***a* and **16***b* which are engageable in the openings **16***c* and **16***d* when the frame **2** supporting the typewriter **1** is placed on the table **16** as shown in Fig. 4 of the drawings. In this position, the striking type of the typewriter **1**, print directly over the platen roller **17** which is adapted to support a paper thereon and spacing of the lines may be accomplished by the adjustable roller ratchet handle **18** similar to a conventional typewriter return carriage spacing ratchet mechanism. Thus, the table **16** provides an installation for the typewriter **1** adapting it to be used in a statitonary position and in substantially a conventional manner to standard typewriters. In the modified track and guide mechanism as shown in Fig. 5 of the drawings, the parallel track **19** is similar to the conventional parallel drafting rule and is mounted on the conventional drafting board **27** wherein conventional control cable means **28** engages pulleys **29** for maintaining the parallel track **19** in parallel relationship with the edges of the conventional drafting board **27** controlling its movement laterally thereon. The wheels **21**, **22**, **23**, and **24** as shown in Figs. 2 and 5 of the drawings support the typewriter **1** adjacent to the track **19** while the cord **20** on the reel **20***a* is connected to the hook **19***a* of the parallel track **19** which tends to force the typewriter in the direction as indicated by the arrow E in Fig. 5 of the drawings.

It will be noted that the parallel track **19** is provided with a rack portion **19***b* similar to the rack portion **2***a* of the frame **2** hereinbefore described which provides for the spacing release of the typewriter **1** in the direction as indicated by the arrow E when urged by the tension of the spool **20***a* on the cord **20**. It will be here noted that the wheels **21**, **22**, **23**, and **24** at their perimeter as shown in Fig. 2 of the drawings are slightly elevated above the lower perimeter of the wheels **10** and **25** so that these wheels **21**, **22**, **23**, and **24** clear the surface C during operation of my typewriter with the frame **2** as shown in Figs. 1 and 2 of the drawings. These wheels **21**, **22**, **23**, and **24** bear directly upon the upper surface of the conventional drafting board **27** when printing various indicia thereon.

The operation of my multiple use typewriter is substantially as follows:

When the track **3** is fixed to the drafting board by means of the clamps **3***a* at opposite ends thereof, the gears **4** and **5** engage said track **3** and the channeled sides **3***d* provide rectilinear guidance of the frame **2** in its movement in the direction as indicated by the arrows D and the rollers **10**, **11**, **25** and **26** support the frame **2** on the upper surface of a drafting board or any other suitable flat surface on which my typewriter may be used. The set screw **13** is disengaged from the shaft **9** permitting the wheels **10** and **11** to rotate independently of the shaft **9** and the spacing of the typewriter **1** in the direction as indicated by the arrows D is accomplished by manual operation of the ratchet operating handle **15** which rotates the ratchet **14** and the shaft **9** causing traction of the gear **4** on the teeth **3***c* of the track **3**. It will be here noted that the lever **8** must be pressed concurrently with the operation of the ratchet operating lever **15** in order to release the brake **6** from the pawl **7** permitting rotation of the shaft **9** relative to the frame **2**. When spacing has been accomplished by means of the ratchet operating handle

15 the lever **8** is released permitting the brake **6** to be engaged by the pawl **7** fixing the position of the frame **2** relative to the track **3**. It will be noted that the lines of type printed by the typewriter **1** are in the direction of the arrow A and that the tracks **3** may be moved along the drafting board in the direction as indicated by the arrow A to extend the lines of type as desired. When my typewriter **1** is used as shown in Figs. 1 and 2, the wheels **21**, **22**, **23**, and **24** clear the upper surface of the paper on the drafting board which is being typed upon, and during use of my typewriter **1** as shown in Fig. 5 of the drawings, the wheels **21**, **22**, **23**, and **24** support the typewriter **1** while it engages the conventional traction rack **19***b* on the track member **19** which track member **19** is movable parallel to the upper and lower edges of the board as shown in Fig. 5 of the drawings. This drafting board **27** is a conventional drafting board and the controls including the cable **28** and the pulley means **29** is conventional mechanism common to parallel drafting rules.

It will be noted that when it is desired to use my multiple use typewriter as a substantially conventional stationary typewriter, the frame **2** as shown in Fig. 1 of the drawings is positioned on the table **16** shown in Fig. 4 of the drawings and the openings **16***c* and **16***d* are engaged on the dowels **16***a* and **16***b* which project upwardly from the top of the table **16**. In this position, the frame supports the operating type of the typewriter directly over the axis of the roller platen **17** which may be spaced by the conventional roller ratchet handle **18** as hereinbefore described. The paper positioned over the roller **17** is typed upon in a substantially conventional manner during which time the typewriter **1** moves in the direction as indicated by the arrow A on the frame **2**.

Though I have shown and described a particular construction, combination and arrangement of parts and portions, I do not wish to be limited to this particular construction combination and arrangement but desire to include in the scope of my invention the construction combination and arrangement substantially as set forth in the appended claims.

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

1. In a typewriter of the class described, a typewriter having a frame and a mechanism to type on a surface beneath said frame, said frame having wheels on its lower side for supporting the same on a flat surface, a spring loaded spacer reel on said frame and having a cord operatively mounted thereon, a drafting table on which said wheels are engaged, and a parallel ruler track mounted on said table for parallel movement of said track, said cord being connected at one end to said parallel track, said track having a spacing rack on the top face thereof engageable by mechanism of the typewriter for providing regularly spaced traversing motion of the mechanism.

2. In a typewriter of the class described, a typewriter having a frame and a mechanism to type on a surface beneath said frame, said frame having wheels on its lower side for supporting the same on a flat surface, a spring loaded spacer reel on said frame and having a cord operatively mounted thereon, a drafting table on which said wheels are engaged, and a parallel track to which said cord is connected at one end, said parallel track being mounted on said table and having a spacing rack member extending longitudinally thereof and operably engaged by spacer mechanism of the typewriter for providing space motivation thereof on said table, pulleys disposed at the corners of a rectangular area on said table, and an endless cable member entrained through said pulleys and twice along said parallel track after the fashion of a drafting parallel ruler with said pulleys guiding the cable and maintaining it under tension, said rack member being secured to the upper face of said track above the corresponding portions of said cable

member and comprising a guide for said frame as well as a spacing means during the traversing movement of the frame.

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