

Sept. 2, 1924.

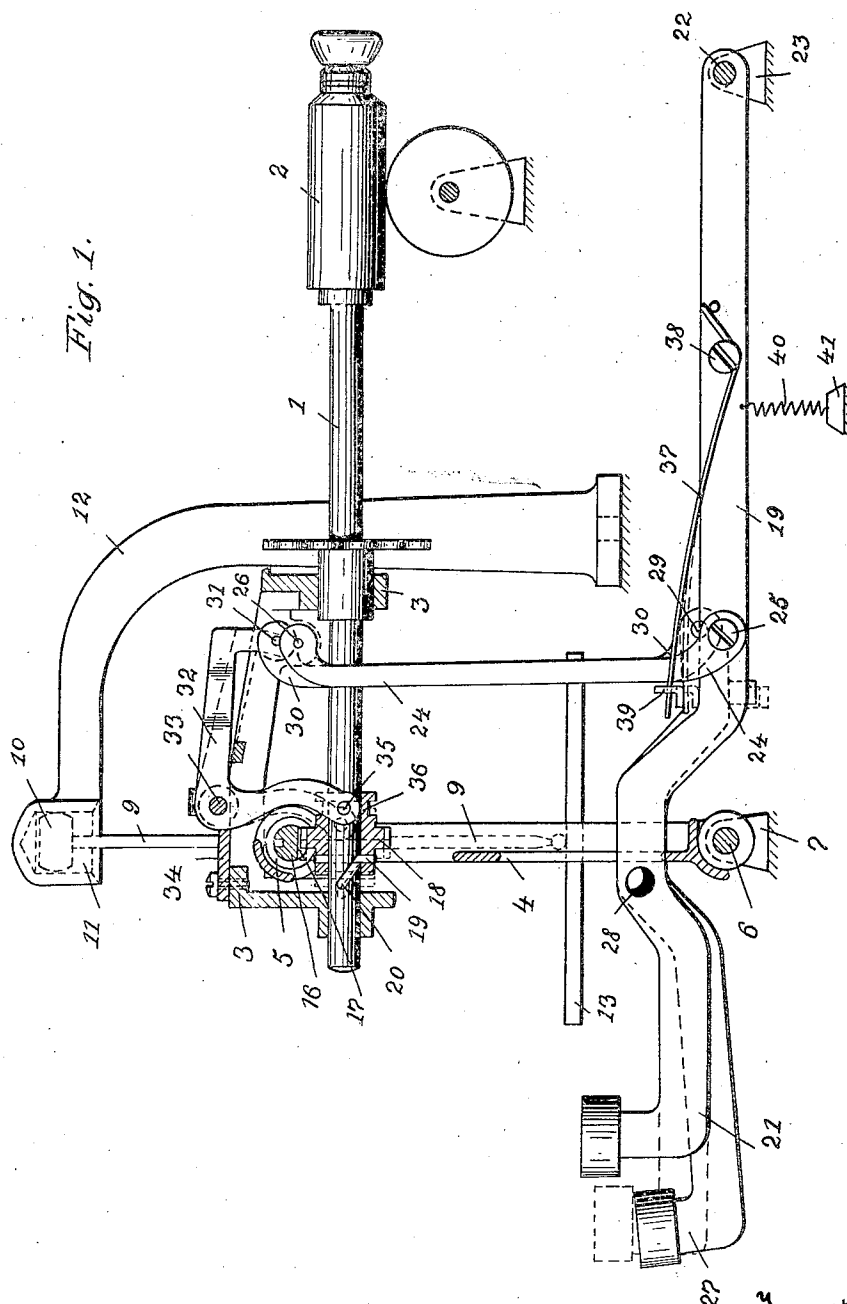
1,507,375

M. HELM

TYPE CYLINDER TYPEWRITER

Filed Aug. 24, 1921

2 Sheets-Sheet 1



Inventor:

Mess Helm  
by *D. K. Kinnear*  
Attorney.

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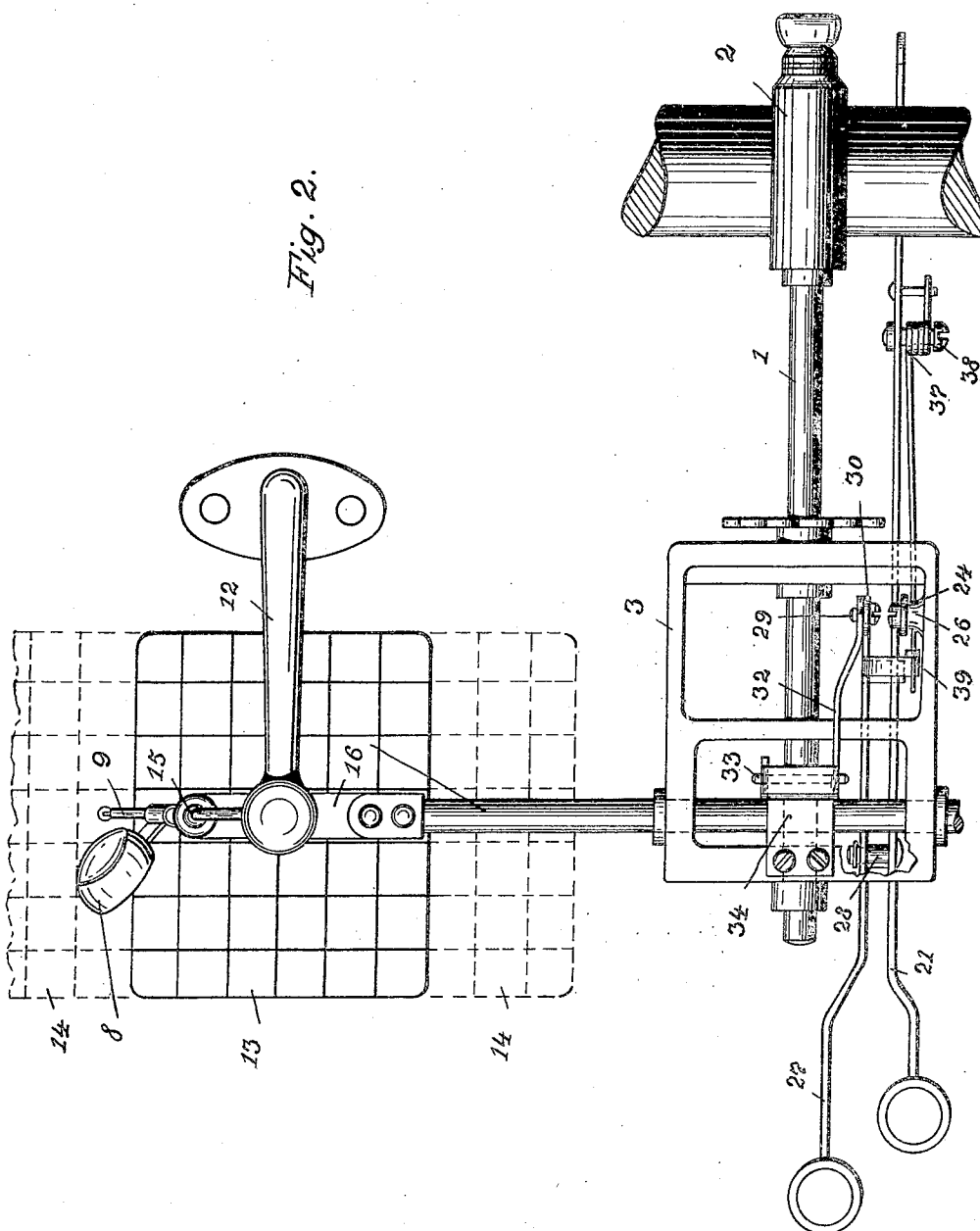
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2 Sheets-Sheet 2

Fig. 2.



Знамениток:

Mess Helm  
by Stumacher-  
Attorney.

## UNITED STATES PATENT OFFICE.

MAX HELM, OF NIEDERSCHONHAUSEN, NEAR BERLIN, GERMANY.

## TYPE-CYLINDER TYPEWRITER.

Application filed August 24, 1921. Serial No. 494,971.

(GRANTED UNDER THE PROVISIONS OF THE ACT OF MARCH 3, 1921, 41 STAT. L., 1313.)

*To all whom it may concern:*

Be it known that I, MAX HELM, a citizen of Germany, residing at Niederschonhausen, near Berlin, Germany, have invented certain new and useful Improvements in Type-Cylinder Typewriters (for which I have filed applications in Germany July 10, 1920; Hungary, July 6, 1921; Austria, July 7, 1921; France, July 9, 1921; Czechoslovakia, July 9, 1921; England, July 11, 1921), of which the following is a specification.

My invention relates to a type cylinder typewriter of the kind described and illustrated in the specification of Letters Patent of the United States 914,273 granted to Friedrich von Hefner-Alteneck and which is provided with a space divided according to the letters of the alphabet (henceforward called the "alphabet table") and an indicator, in which either the indicator and the writing-key are connected, or in which the indicator and the writing-key are operated separately.

My invention has for its object, in connection with this variety of typewriter, to use several writing keys instead of one, by the direct action of the additional key or keys an additional movement of the type cylinder being effected, so that in the same position of the indicator another character comes into position for printing. In consequence thereof it is thus not necessary, notwithstanding the desired additional movement of the type cylinder, to make any additional movement with either the right or the left hand, that is to say—the machine is manipulated in the same manner as formerly, except that when a character is struck one or other of the writing keys is chosen, thus rendering it possible to write large and small characters without employing a special shift-key.

In the drawings affixed to this specification and forming part thereof a typewriter embodying my invention is illustrated diagrammatically by way of example. In the drawings—

Fig. 1 is a side elevation, and

Fig. 2 a plan.

Referring to the drawings, the type cylinder spindle 1 with the type cylinder 2 is mounted so as to revolve on a bearing plate,

which in its turn is freely supported to oscillate by an oscillating yoke 4 around the seating 5 and bearing pin 6, the latter being mounted on the typewriter frame 7. The placing in the desired position of the characters on the type cylinder 2 is effected by the manipulation of the handle 8, attached to the indicator 9, which can be easily moved. The upper end of the indicator 9 passes into a spherical head 10, which is mounted so that it may be pressed into the cylinder bore 11 of the bearing standard 12. Underneath the indicator 9 is placed the alphabet table 13, which, as a result of the present invention, is considerably reduced in size and contains only 42 character spaces, whereas the usual form of the alphabet table, as shown by the dotted lines indicating the character spaces 14, contained 84 character spaces. In the point 15 of the indicator 9 is attached, after the manner of a ball connection, an actuating rod 16, which is provided with teeth 17. As the actuating rod 16 is moved backwards and forwards, the toothed wheel 18, which is furnished with a groove and is mounted loosely on the type cylinder spindle and which engages with the guiding rod pin 19 in a cam groove 20 of the type cylinder spindle 1, is rotated and likewise a rotary motion is imparted to the type cylinder spindle 1 with the type cylinder 2. A key lever 21, which is mounted, on the spindle 22, in the frame of the machine, is connecting with the bearing plate 3 by means of the guiding rod 24 so as to form a joint at the point 25 or 26. A second key 27 is jointed to the key 21 at the point 28. The guiding rod 30 for key 27 is jointed thereto at the point 29, and actuates at the point 31 a bell crank lever 32, which is mounted at point 33 on the frame 34 in such a manner that it is free to oscillate and engages at the point 35 in a groove 36 of the toothed wheel 18 which is attached movably to the type cylinder spindle 1. The bearing points 29 and 31 of the adjusting bar 30 are placed parallel or nearly parallel with the oscillating yoke 4. A spring 37, which is attached to the key lever 21 at the point 38 serves the purpose of drawing back the key lever 27 into its position of rest by coming into action at point 39. A spiral

spring 40, which has an abutment in the frame of the machine 41, retains the key lever 21 in its position of rest. According to the kind of character which is required to be printed after the indicator point 9 has been placed in the proper position, either key 21 (for the small characters) or key 27 (for the capitals) is pressed.

It is possible to attach a third key, and if this third key is made use of, the alphabetic table, instead of being composed of 84 character spaces, would require only 28. The number of the character spaces on the alphabetic table is reduced in proportion to the number of the writing keys introduced additionally that is to say that if the use of one writing key involves 84 character spaces, if two writing keys are employed only 42 character spaces are required, while with three writing keys 28 character spaces are employed and with four writing keys 21.

The additional movement of the type cylinder consequent on the increase in the number of keys may be in principle two-fold and the type cylinder may in the first instance have imparted to it an additional movement in a rotary direction, and in the second instance in a longitudinal direction. The drawing illustrates only a constructional type in which the additional movement is imparted in the direction of rotation. If on the other hand the additional movement imparted to the type cylinder is in a longitudinal direction, the gear wheel 18 with the guide groove 36, in which the bell crank lever 32 engages with the pin 35, must be mounted tightly on the type cylinder spindle. In such a case it will be necessary for the types on the type cylinder to be arranged in a correspondingly different manner.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

I claim:

1. In a typewriter in combination, a type cylinder and a spindle carrying said cylinder, means for imparting to said cylinder a rotary and a longitudinal motion and two separate alternatively operable means for imparting to it a transversal motion, one of said latter means being arranged for simultaneously imparting to said cylinder a motion other than transversal.

2. In a typewriter in combination, a type cylinder and a spindle carrying said cylinder, means for imparting to said cylinder a rotary and a longitudinal motion and two separate alternatively operable keys for imparting to it a transversal motion, one of said keys being arranged for simultaneously imparting to said cylinder a motion other than transversal.

3. In a typewriter in combination, a type

cylinder and a spindle carrying said cylinder, means for imparting to said cylinder a rotary and a longitudinal motion, a combination of levers for transversal moving said cylinder, another combination of levers for imparting to it a helical motion, a key for actuating only said first combination of levers and a second key for simultaneously operating both said combinations of levers.

4. In a typewriter in combination, a type cylinder and a spindle carrying said cylinder, means for imparting to said cylinder a rotary and a longitudinal motion, a separate key for displacing said cylinder in transverse direction and separate means for causing said cylinder to continue in one of the motions brought about by said first mentioned means.

5. In a typewriter in combination, a type cylinder and a spindle carrying said cylinder, means for imparting to said cylinder a rotary and a longitudinal motion, a separate key for displacing said cylinder in transverse direction and a second key for causing said cylinder to continue in one of the motions brought about by said first mentioned means.

6. In a typewriter in combination, a type cylinder and a spindle carrying said cylinder, means for imparting to said cylinder a rotary and a longitudinal motion, a key for displacing said cylinder in transverse direction and a second key for causing said cylinder to continue in one of the motions brought about by said first mentioned means, said second key being adapted, on being depressed, to also operate said first key.

7. A typewriter comprising in combination, a grip, an alphabet table in front of said grip, a type cylinder adapted to move in accordance with the position of said grip relatively to said table and a plurality of keys for carrying said cylinder into printing position, one of said keys being arranged for displacing said cylinder in transverse direction, and another key for causing said cylinder to continue in the motion brought about by said grip.

8. In a typewriter in combination, a type cylinder and a spindle carrying said cylinder, a rack movable transversely to said spindle and a gear wheel on said spindle in gear with said rack, a grip for moving said spindle and said rack in the direction of the spindle axis, a key for depressing said spindle and means comprising an additional key for changing the angular position of said gear wheel on said spindle.

9. In a typewriter in combination, a type cylinder and a spindle carrying said cylinder, a rack movable transversely to said spindle and a gear wheel on said spindle in gear with said rack, a pin on said wheel projecting into a cam groove in said spindle, a grip for moving said spindle and said rack in the

direction of the spindle axis, a key for depressing said spindle and means comprising an additional key for changing the angular position of said gear wheel on said spindle. in accordance with the position of said pointer relatively to said table, a key for merely depressing said spindle and another 10 key for depressing it and imparting to it an additional motion.

5 10. A typewriter comprising in combination, a pointer, an alphabet table in front of said pointer, a type cylinder adapted to move

In testimony whereof I affix my signature.  
MAX HELM