P. STEINKRAUS.

TYPEWRITING MACHINE.

APPLICATION FILED APR. 13, 1921.

1,414,229. Patented Apr. 25, 1922.

2 SHEETS—SHEET 1.

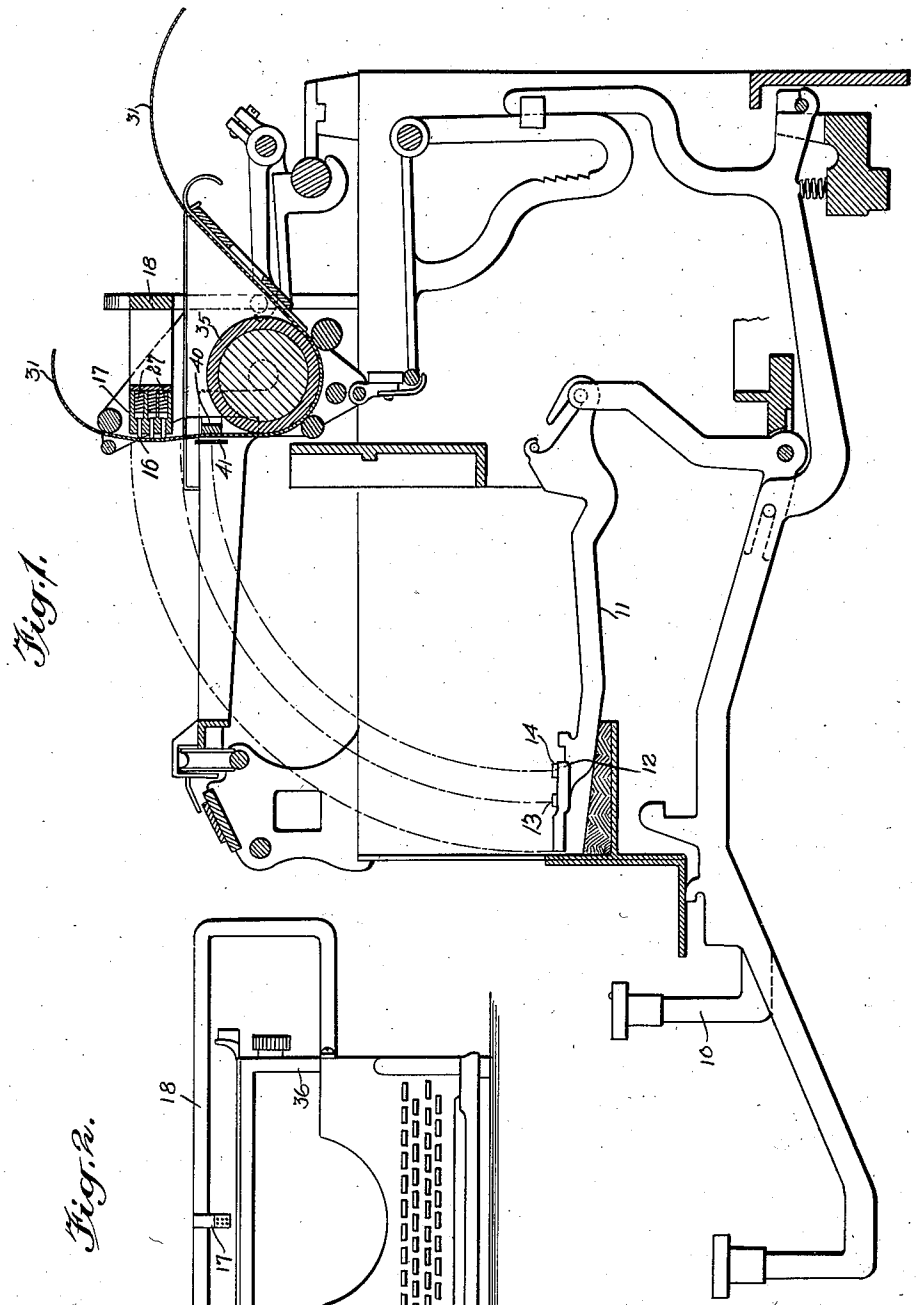


Fig. 1.

Fig. 2.

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

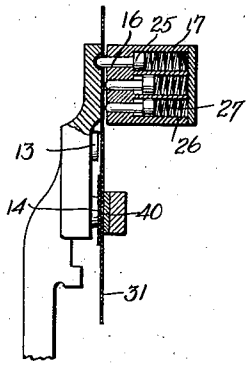


Fig. 4.

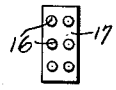


Fig. 5.

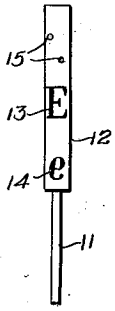


Fig. 6.

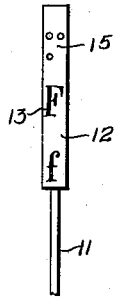


Fig. 7.

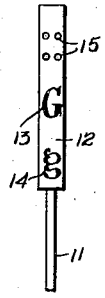


Fig. 9.

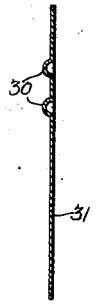


Fig. 10.

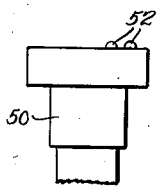


Fig. 8.

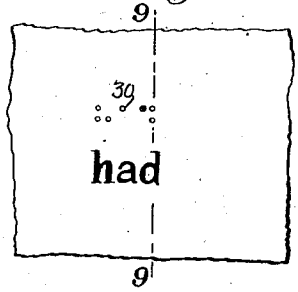
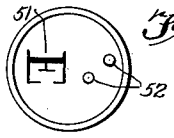


Fig. 11.



WITNESSES

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UNITED STATES PATENT OFFICE.

PAUL STEINKRAUS, OF NEW YORK, N. Y.

TYPEWRITING MACHINE.

1,414,229. Specification of Letters Patent. Patented Apr. 25, 1922.

Application filed April 13, 1921. Serial No. 460,875.

To all whom it may concern:

Be it known that I, PAUL STEINKRAUS, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented new and useful Improvements in Typewriting Machines, of which the following is a full, clear, and exact description.

The invention relates to embossing and penetrating typewriting machines for use by the blind, and its object is to provide certain new and useful improvements in embossing and penetrating typewriting machines whereby the blind as well as seeing persons are enabled to produce each character in both Braille cells and type and hence enable blind or seeing persons to read the characters produced on the sheet of paper.

Another object is to permit the improvements to be applied to the various styles of typewriting machines without requiring entire reconstruction thereof.

With these and other objects in view, the invention consists of certain novel features of construction as hereinafter shown and described and then specifically pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters or reference indicate corresponding parts in all the views.

Figure 1 is a cross section of a Remington typewriting machine provided with the improvement;

Figure 2 is a reduced front elevation of the same;

Figure 3 is an enlarged cross section of one of the keys in position on the platens for producing both Braille cells and type on a sheet of paper;

Figure 4 is a face view of the male die for producing Braille cells;

Figures 5, 6 and 7 are face views of the heads of several of the type bars;

Figure 8 is a face view of a sample of the produced reading matter;

Figure 9 is a cross section of the same on the line 9—9 of Figure 8;

Figure 10 is a side elevation of the fingerpiece of one of the keys; and

Figure 11 is a plan view of the same.

Each of the keys 10 is pivotally connected with a type bar 11 provided with a head 12 having corresponding capital and lower case types 13 and 14 produced thereon in the usual manner. Each of the heads 12 is also provided on its face with one or more depressions 15, preferably located above the capital type 13. The depression or depressions 15 are arranged according to the Braille cells for the different characters of the alphabet, numerals, and punctuation marks and the like, and with the said depressions 15 coacts a corresponding plunger or plungers 16 mounted to slide transversely in a bearing 17 supported on a suitable framework 18 attached to the framework 19 of the typewriting machine. Each of the plungers or dies 16 is provided at its rear end with a head 25 mounted to slide in a bore 26 formed in the bearing 17 and is pressed on by a spring 27 mounted in the said bore 26. The springs 27 normally project the plungers 16 beyond the face of the bearing 17 and hence when a key is actuated the corresponding depression or depressions 15 and the plunger or plungers 16 coact to produce a Braille cell or cells 30 on the sheet of paper held on the usual cylinder 35 mounted on the carriage 36 of the typewriting machine. It will be noticed that at the time the Braille cell or cells 30, representing one character, are produced on a sheet of paper 31 an impression in type of the same character is made by the type 14 on the paper held against a platen 40, which is preferably a flat platen instead of the cylinder 35. It is understood that a ribbon 41 extends in front of the paper opposite the platen 40 to cause an impression of the corresponding type character on the sheet of paper 31.

From the foregoing it will be seen that by the arrangement described the plungers 16 and their bearings 17 form an embossing platen coacting with the depressions 15 on the head 12 of each type bar 11, and hence the same character is produced in type and a Braille cell depression or depressions on the sheet of paper to enable both a blind and a seeing person to read the said character.

In order to enable the blind and the seeing person to select the proper key 10, the fingerpiece 50 thereof is provided with a character 51 corresponding to the characters 13 and 14 of the type bar 11 actuated by the corresponding key, and on the fingerpiece 50 is produced a corresponding Braille cell or cells 52 to enable the blind person to select the proper key.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent:

1. In a typewriting machine, a type bar having the same character in type and a Braille cell depression or depressions, a platen adapted to coact with the said type character, and a platen having Braille cell die members adapted to coact with the said Braille cell depression to produce a Braille character corresponding to the type character.

2. In a typewriting machine, a type bar having the same character in type and in a Braille cell depression or depressions, a platen adapted to coact with the said type character, and an embossing platen adapted to coact the said Braille cell depression.

3. In a typewriting machine, a type bar having the same character in type and in a Braille cell depression or depressions, a platen adapted to coact with the said type character, and a platen having spring-pressed pins adapted to coact with the said key depression or depressions to produce the same character in tangible form.

PAUL STEINKRAUS.