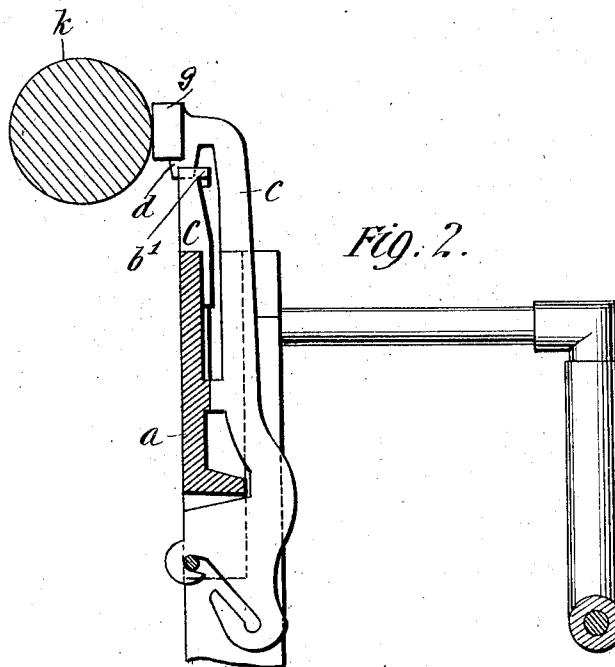
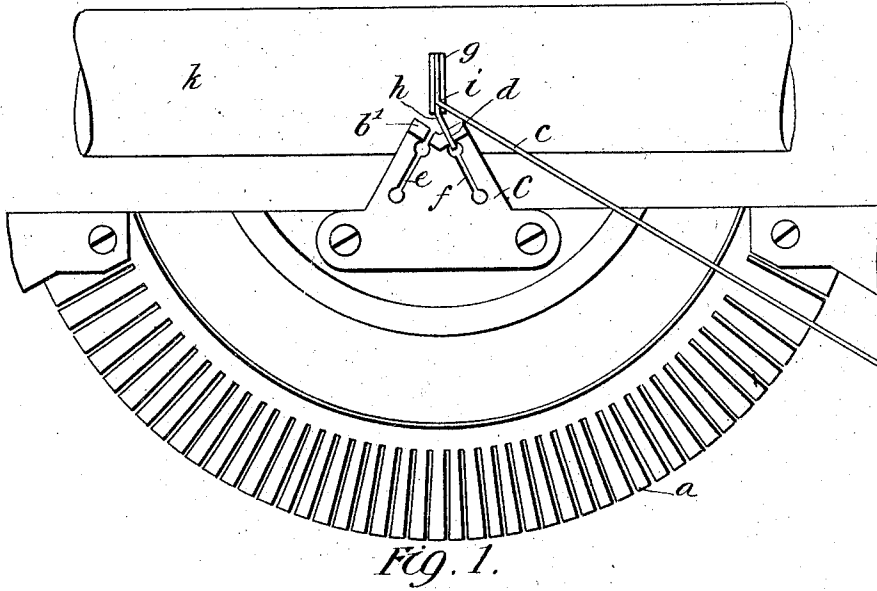


G. MEZ.
TYPE WRITING MACHINE.
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1,016,351.

Patented Feb. 6, 1912.



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UNITED STATES PATENT OFFICE.

GUSTAV MEZ, OF BERLIN, GERMANY.

TYPE-WRITING MACHINE.

1,016,351.

Specification of Letters Patent.

Patented Feb. 6, 1912.

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To all whom it may concern:

Be it known that I, GUSTAV MEZ, a subject of the Duke of Baden, Germany, who resides in Berlin, Germany, and whose post-office address is No. 19 Aschaffenburg street, in said city, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The invention relates to an organization and arrangement of the type bars in typewriting machines having a forward stroke of the bars and single shift of the platen, *i. e.*, typewriting machines wherein each typebar carries two types. In old forms of such machines (of the Underwood type), the type bar is so directed by a guiding head just before its impact on the cylinder or platen that it cannot substantially change its position laterally and consequently cannot change its position vertically. The guide slot for all of the forty-five bars is the same, and the bars, by reason of this arrangement, are bent or deflected immediately below the slot, with the exception, of course, of the central bar which does not need to be bent. This old arrangement has the disadvantage that the outermost bars, whose bend or deflection is at an angle which in fact approximates a right angle, begin to wobble in use as soon as the guide has worn away somewhat, and the guiding is of course the less complete the farther to the side the bar lies. A further disadvantage, which likewise exhibits itself the most prominently in the outermost bars of the prior arrangement, resides in the circumstance that the two types of the type bar (which always exhibits a certain elasticity and can never be entirely rigid), in consequence of the effects incident to torsion have an unlike force of impact, inasmuch as the upper type in striking the paper gives its blow under materially less favorable conditions than the lower one. These conditions are the more unfavorable, the higher the upper type is located beyond the point of bend or deflection of the type bar. At a certain height, in consequence of the torsion moment, the force of impact becomes

wholly insufficient. Typewriter manufacturers have endeavored to obviate this difficulty, by entirely omitting the guide head, thereby making it possible to connect the type bar to better advantage to the two type. If, however, the guide head is omitted, there results, after a short time, and in spite of the most careful journaling of the individual type bars, a lack of alignment of the type,—one of the greatest defects which a typewriting machine can possess.

By my present invention I overcome the above stated drawbacks found in the prior constructions of the class of typewriting machines referred to.

I have illustrated one form of my invention in the accompanying drawings, wherein;

Figure 1 is a front view of sufficient parts of a typewriting machine of the class described, for the understanding of my invention which is shown as applied thereto, and Fig. 2 is a side elevation, partly in section, of the parts shown in Fig. 1 and of a portion of the framework.

Referring to the drawings, in which like letters of reference indicate like parts, *a* is a guide segment and *b* is a single shift platen or cylinder of ordinary construction. The type bars *c*, which are forty-five in number, (though only one is here shown) are provided with typebars or blocks *g*, carrying two type, which coöperate with the single shift platen *b* in a manner well known. Each type bar *c* is provided with a guide-lug *d* which is adapted to engage with one or the other of two guide-slots *e* and *f*, formed in the guide-head *a*, which is secured to the machine as shown in the drawings, the upper end of the guide-head being thickened or enlarged at *b'*. The two guide-slots *e* and *f*, form with each other an angle of from 40° to 60°, and they are so positioned that the guide-lugs *d* of some of the bars, say about one-half thereof, engage with one of said slots while the remainder of said bars engage with the other slot. The bend *i* in the type bars is above instead of below the guide-head *b*, (as in the prior constructions) and I adopt a direction for guide lugs *d* (which are designed to engage within the guide slots *e, f*), which direction forms an acute angle with that of the type bar *c* and an obtuse angle with

that of the type block *g*; whereas in the old construction all of the guide lugs are parallel with the guide slot and also with the type block *g*. The angular arrangement is preferably obtained by means of two slots *e, f*, in the guiding head. It is clear that the torsion moment is thus rendered so inconsiderable that it can no longer influence the force of impact of the bar. By this arrangement, therefore, we not only are not obliged to relinquish the guide slot, but, by doubling the slot, we obtain even a better guiding effect inasmuch as the angle which the type bar forms with the guide slot always remains relatively acute and never approaches 90°, as in the machines hereinbefore referred to. Practically, it can always be kept less than 45°. With the better guiding there is also given a better guaranty for permanent alinement, with respect to which the prior construction left much to be desired, especially in so far as the laterally located bars were concerned.

A further advantage of the invention consists in the fact that the type bars can be made shorter than in the prior construction. They no longer converge to a point below the guiding head, but to a point *i* above the same, and consequently the entire journal segment becomes flatter, the type bars form a somewhat smaller angle one to another, and can more readily slide by each other without becoming entangled with each other,—a feature of the greatest importance for speed of writing, which, at present, is considered of the first moment.

The following features of industrial advantage are among those presented by this invention: increased speed of writing, softer stroke (because the levers are shorter and therefore of lesser weight), increased force of impact (because the torsion moment is less), and increased guaranty for alinement of the writing. Furthermore, the invention gives the possibility of considerably increasing the number of the type bars on each side, which could not be done in the prior construction without making the guiding of the bar in the guide slot without effect in consequence of the approach of the angle of deflection of the type bar to 90°.

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

1. In a typewriting machine, the combination of type-bars having type-heads, guide lugs, and guides coöperating with said lugs, the guide lugs of individual type-bars being deflected at an obtuse angle from the respective type-heads.

2. In a typewriting machine, the combination of type-bars having type-heads, guide-lugs and guides for said type-bars, the guide-lugs of individual type bars being deflected at an obtuse angle from the type-

head and at an acute angle from the type-bar; substantially as described.

3. In a typewriting machine, the combination of deflected type-bars having type-heads, guide-lugs and guides for said type-bars, the guide-lugs of individual type-bars being deflected, and the points of deflection of said guide-lugs being below that of the type-bars themselves.

4. In a typewriting machine, the combination of deflected type-bars having type-heads, guide-lugs and guides for said type-bars, the guide-lugs of individual type-bars being deflected, and both points of deflection of the guide-lug and of the type-bar being beyond said guides.

5. In a typewriting machine, means for guiding the type-bars in their forward stroke, consisting of a guide-plate having a plurality of guide-slots forming an angle with each other, in combination with a series of type-bars having type-heads provided with guide-lugs, some of which are adapted to engage with one of said slots and some of which are adapted to engage with another of said slots.

6. In a typewriting machine, means for guiding the type-bars in their forward stroke, consisting of a guide-plate having a plurality of guide-slots forming an acute angle with each other, in combination with a series of type-bars having type-heads provided with guide-lugs some of which are adapted to engage with one of said slots and some of which are adapted to engage with another of said slots.

7. In a typewriting machine, means for guiding the type-bars in their forward stroke, consisting of a guide-plate having a plurality of guide-slots forming an angle of from 40° to 60° with each other, in combination with a series of type-bars having type-heads provided with guide-lugs some of which are adapted to engage with one of said slots and some of which are adapted to engage with another of said slots.

8. In a typewriting machine, the combination of type-bars having type-heads, guide lugs for the type-bars arranged at different angles to the respective type-heads, and co-operating guide means for said guide lugs.

9. In a typewriting machine, the combination with the type-bars having type-heads provided with guide lugs, of a plurality of guides for different groups of type-bars, each guide adapted to coöperate with the guide lugs of each of a separate group of said type-bars.

10. In a typewriting machine, a type-bar having a type-head provided with a guide lug, in combination with a guide for said lug said guide making an obtuse angle with the type-head when said type-bar is in printing position.

11. In a typewriting machine, a type-bar

having a type-head provided with a guide
lug, in combination with a guide making an
acute angle with the type-bar and making an
obtuse angle with the type-head when said
5 type-bar is in printing position.

12. In a typewriting machine, a type-bar
having a type-head provided with a guide
lug, in combination with a guide making an
obtuse angle with the type-head when said
10 type-bar is in printing position, the guide

lug engaging said guide and being connected
to the type-head beyond the guide.

In testimony whereof, I have hereunto
set my hand in the presence of two subscrib-
ing witnesses.

GUSTAV MEZ.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.