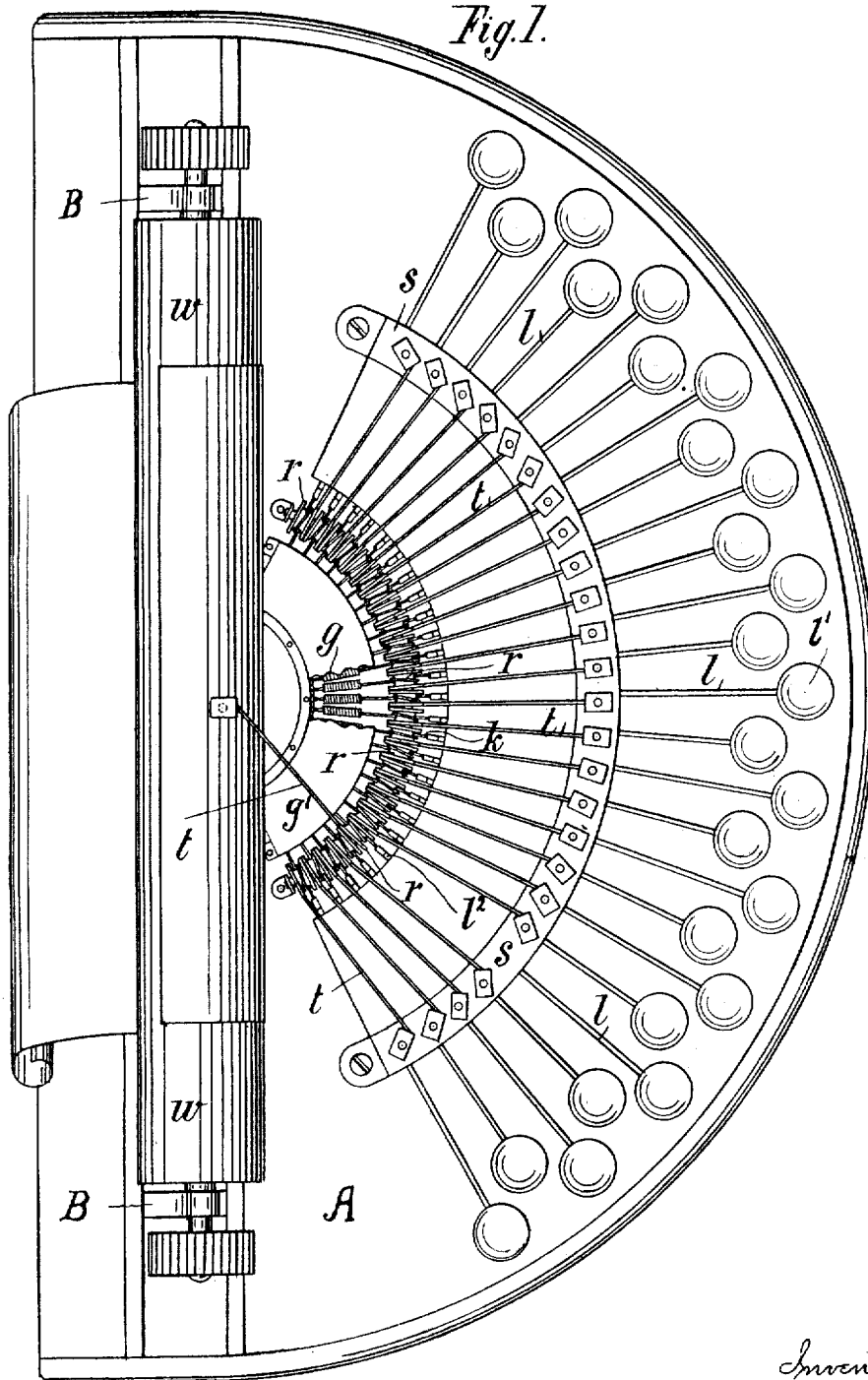


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APPLICATION FILED OCT. 2, 1906.

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Patented Jan. 11, 1910.
2 SHEETS—SHEET 1.



Witnesses
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by *Henry Orth* atty.

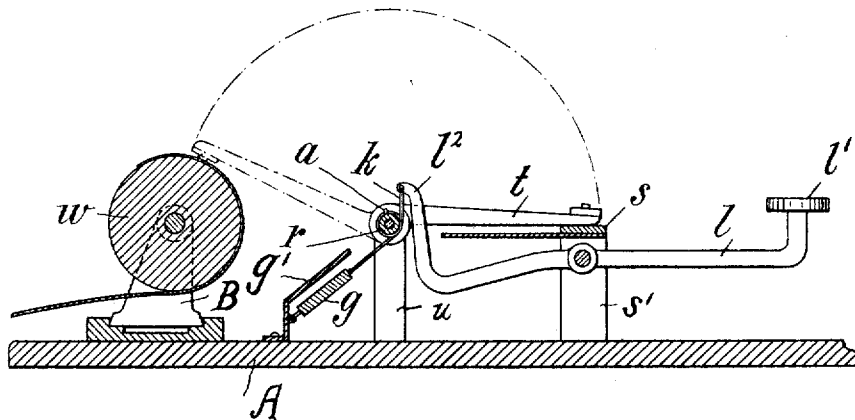
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Fig. 2.



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UNITED STATES PATENT OFFICE.

AUGUST FRIEDRICH WILHELM JULIUS VON WEDEL, OF HAMBURG, GERMANY.

TYPE-WRITING MACHINE.

945,829.

Specification of Letters Patent. Patented Jan. 11, 1910.

Application filed October 2, 1906. Serial No. 337,089.

To all whom it may concern:

Be it known that I, AUGUST FRIEDRICH WILHELM JULIUS VON WEDEL, a subject of the German Emperor, and resident of Hamburg, in the German Empire, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to type writing machines and refers more particularly to improvements in the type bar actuating mechanism of such machines wherein the vibrating movement of the type-bar is effected by means of a tension member moved from the key-lever, while the return movement of the type-bar to its position of rest is effected by the tension or pressure of a spring acting in the opposite direction. In known mechanisms of this class the one end of the tension member which is suitably connected with the type-bar engages the lower arm of the type-bar which is formed as a bell-crank lever. This arrangement permits, during the period of movement of the type-bar a favorable position of the point of engagement of the tension member relative to the pivot of the type-bar, only for a moment, as at the commencement of the movement the angle at which the tension member engages the type-bar arm is somewhat acute and at the close of the movement passes into a somewhat obtuse angle, whereby the transmission of power, apart from the above mentioned favorable middle position of the type bar, is not brought about favorably.

Now the object of the present invention is to remove the above mentioned drawback so that the pressure or tension exerted on striking a key always acts uniformly favorably and regularly on the type bar from the commencement to the end. The said object is realized by not having the tension member engage directly one arm of the type-bar but by letting it engage a pulley or toothed disk which is rigidly connected with the type-bar or is formed as the hub or boss thereof. With such an arrangement the tension member (chain, cord, belt, or the like) engaging the pulley or disk on transmission of the tension always assumes an equally favorable angular position relative to the lever arm of the pulley or disk moving the type bar and the power of the finger which depresses the key lever will at any instant act favorably on the movement of the type-bar,

a circumstance which considerably increases the duplicating capacity of the machine.

In the accompanying sheets of drawings: Figure 1 is a plan of a type writing machine constructed in accordance with and embodying my invention; Fig. 2 is a cross section of the machine showing the type bar actuating mechanism.

Similar letters refer to similar parts in both of the figures.

In the construction shown A designates the base of the machine and B the movable carriage in which is journaled on a horizontal axis the usual printing platen *w*. The mechanism for operating the carriage and platen may be of any preferred form and does not constitute a feature of my present invention. The height of the axis of the platen and the circumference of the latter enter into the operation of the type bar and its operating mechanism as hereinafter described.

Mounted in front of the platen and projecting upward from the base A are a series of standards *u* arranged in a curved line. On each standard, in the horizontal plane of the axis of the platen, is pivoted at one end a type-bar *t*, and in front of said standards and in said horizontal plane is a rest *s* for the free end of the type-bars. On the supports *s'* for the rest *s* beneath each type-bar is centrally pivoted a key-lever *l* the power end of which is provided with the usual finger piece *l'*, while the load end *l''* is shown as extending above the pivot of the type-bar. Fixed to each type-bar at its pivot is a pulley *r*, and surrounding each pulley and fixed thereto at one point of its periphery, preferably by means of a pin *a*, is a flexible member *k* which has one end secured to the load end of the lever *l* and its other end connected to one end of a coiled spring *g*, the free end of which spring is connected to a bracket *g'* preferably made in the form of a shield and connected to the base A. By the above described arrangement it will be readily understood that when the finger piece is pressed down the load end of the lever *l* is raised, and by means of the member *k* being fixed to the pulley *r* the latter is rotated, the spring distended and the type-bar swung from the rest *s* onto the platen, as indicated in dotted lines. The tension of the spring will, when pressure is removed from the finger piece, return the type-bar and lever to their normal positions.

With this invention the movement of the key *l* can be considerably reduced as on account of the uniform transmission and distribution of the power the radius of the pulley *r* can be considerably smaller than the usual actuating lever arm. Hence result extremely easy running of the mechanism and economy of power with the possibility of letting the type bar rock not only around an angle of about 45° as heretofore, but of increasing this angle if need be to such an extent that the type-bar describes almost a semi-circle in moving from the rest *s* to the platen *w*. The practical result of this arrangement which would be impossible with lever transmission, is to increase the capacity to take carbon copies, that is to say, to duplicate to an extent not heretofore obtained, and on the other hand to enable the machine to be made of a flatter and more convenient portable form. Very important also is the feature that with the present type-bar mechanism the length of the type bars can be considerably less than with known constructions. There is thus a diminution of the oscillation of the type-bar at the extremity so that special guiding devices for the type-bars can be dispensed with.

I claim:

1. In a type-writing machine, the combination with a platen, of a type-rest mounted in the same horizontal plane as the axis of the platen, a type-bar pivoted between the platen and rest in said plane and adapted to

engage the periphery of the platen above said pivot, a key lever centrally pivoted below the rest, a pulley fixed to the type bar at its pivot, a flexible member fixed to and surrounding the pulley having one end secured to the key-lever whereby the downward movement of the power end of the latter will throw the type-bar onto the platen, and a spring connected to the other end of the flexible member adapted to move the type bar from the platen to the type-rest.

2. In a type-writing machine, the combination with a platen, of a type-rest mounted in the same horizontal plane as the axis of the platen, a support for the rest, a type-bar pivoted in said plane between the platen and rest and adapted to engage the periphery of the platen above the horizontal plane of the pivot, a key-lever pivoted on the support below the rest and having its load end extending above the pivot of the type-bar, a pulley fixed to the type-bar at its pivot, a flexible member fixed to and surrounding the pulley having one end secured to the load end of the key lever to move the latter from its rest to the platen, and a spring connected to the other end of the flexible member to return the type-bar to its normal position.

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