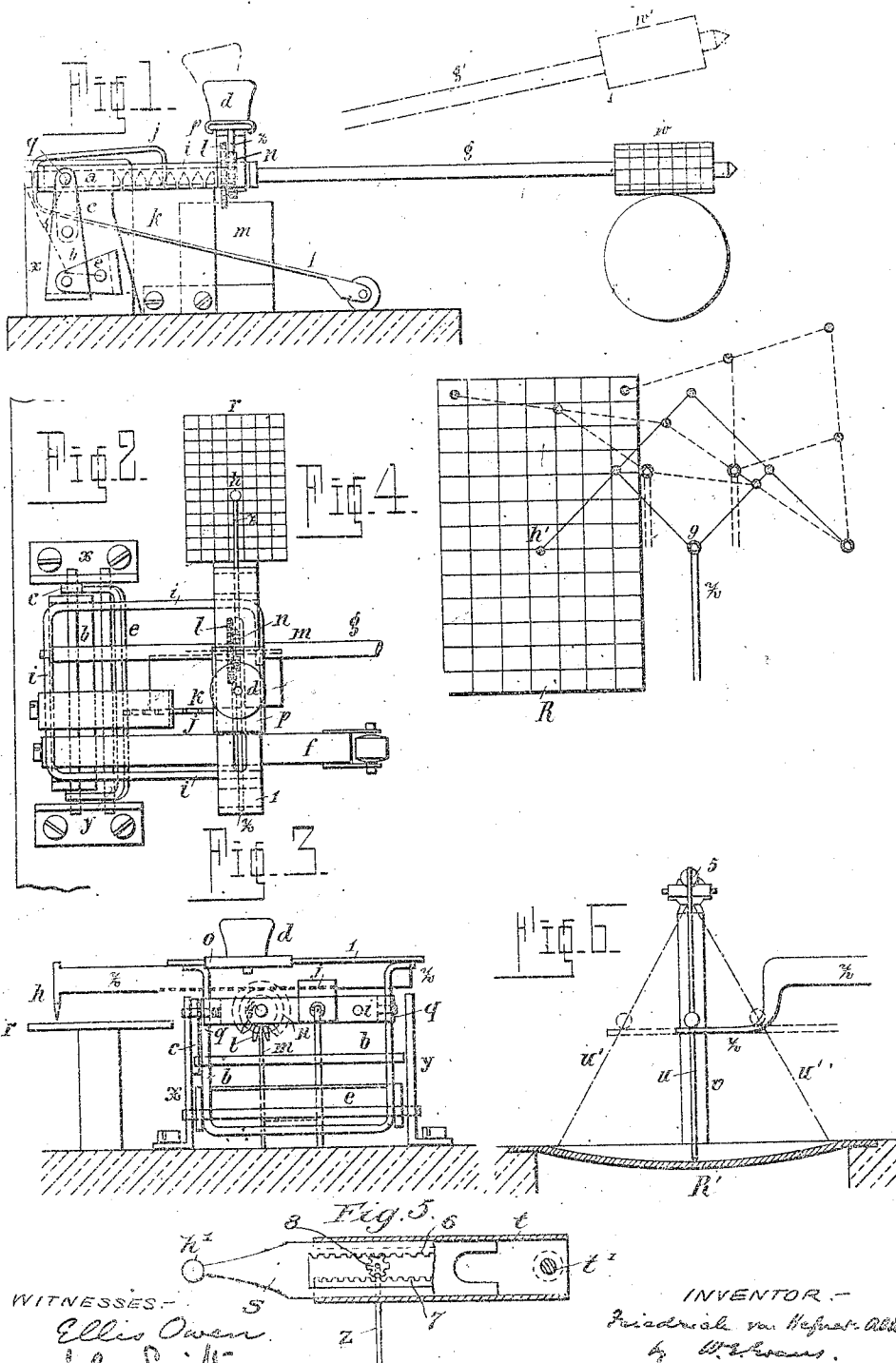


F. VON HEFNER-ALTENECK.
TYPE WRITER.
APPLICATION FILED JULY 7, 1902.

914,272.

Patented Mar. 2, 1909.



WITNESSES:
Ellis Owen
John Smith.

INVENTOR:
Friedrich von Hefner-Alteneck
by W. H. Brown.
ATTORNEY

UNITED STATES PATENT OFFICE.

FRIEDRICH VON HEFNER-ALTENECK, OF BERLIN, GERMANY.

TYPE-WRITER.

No. 914,272.

Specification of Letters Patent:

Patented March 2, 1909.

Application filed July 7, 1902. Serial No. 114,623.

To all whom it may concern:

Be it known that J. FRIEDRICH VON HEFNER-ALTENECK, Ph. D., a subject of the King of Bavaria, and resident of No. 10 Hildebrandt'sche Privatstrasse, Berlin, in the Kingdom of Prussia and Empire of Germany, have invented certain new and useful Improvements in Type-Writers, of which the following is a specification.

This invention relates to a typewriter having a typeroller but without a key board, which differs from known typewriters of the type referred to in that the adjustment or movement of the type as also the impression or printing of the same, requires only a very slight movement of the hand.

The impression of the type is effected by the employment of an oscillating mechanism provided with a handle or knob which latter permits of the rigid attachment of the typeroller upon the end of the type roller shaft which may project to any degree required from the machine, so that even by the slightest movement of the handle, the necessary movement is imparted to the type roller to effect the inking of the type roller and the impression of the type. For the adjustment of the type this slight movement of the handle is attained by the movement being regulated to an extent corresponding to the short distance apart of the type upon the type-roller, without taking into consideration the amount of the movement of the pointer upon the index plate. This amount of movement in both directions is made clearly apparent by means of a special device which has the effect of increasing or magnifying the extent of the movement.

The invention is illustrated in the accompanying drawing in which similar characters refer to similar parts throughout the several views and in which—

Figure 1 is a side elevation of a typewriter provided according to the invention. Fig. 2 is a plan corresponding thereto. Fig. 3 is a front elevation corresponding to Figs. 1 and 2. Fig. 4 is a diagrammatic view of an ordinary pantographic device which may be employed. Fig. 5 is a plan of a modified form of pantograph and Fig. 6 is an elevation of a further modified form.

Referring to the drawing, the type-roller *w* is provided with type which is so arranged that when developed it would present a draft-board-like appearance although it is

not necessary for the type to be exactly square. The adjustment of the types for printing and the printing itself are effected from the handle *d*, which is movable laterally, backward and forward as well as vertically. To effect this, the type roller spindle *g* is movably journaled in a right angled but not entirely closed frame *i*, beyond which the said spindle projects to the other side of the writer. The frame *i* is rotatable upon a spindle, formed by two pivots, which is so guided by a straight and parallel guide, formed by two arch pieces *b*, *c* and a guide rod *e* so that it can move horizontally and parallel. One guide is shown in Fig. 1 in the left hand position by dotted lines. The type roller spindle *g* carries within the frame *i* a toothed wheel *n* which gears with a movable toothed rod *z* guided between two ledges and which is movable in a longitudinal direction towards the frame *i*, the said rod either directly carrying the handle *d*, or being preferably connected to a slide *c* sliding upon a special rail *l*, upon which the handle or knob is mounted. The toothed rod *z* carries on the left a pointer *h*, which indicates the movement of the knob *d* as required to determine the printing position upon a draft board or like surface *r*. This adjustment is first effected in the raised position, as shown in dotted lines in Fig. 1 of the knob *d* upon each subsequent pressing down of the knob, by means of which the impression is effected at the same time. When raising the knob or handle *d*, the type roller and its spindle are brought into the position indicated by the dotted lines *g'* and *w'* (Fig. 1). The adjustment is first completed or exactly corrected by the knife edge *j*, attached to the oscillating arm *i* falling into the recesses of the comb *k* fastened to the frame, as also by a similar knife edge *n* falling into the recesses of a star-wheel *l*, upon the type roller spindle *g* at the side of the tooth rod *z*. The raising of the knob *d*, and the parts oscillating with it is assisted by a spring *f* having a roller running on the base plate. As the knob *d* only makes slight movements, the index plate *r* with the (84) letters, not shown in the drawing will also make such slight movement that precision of working will be rendered difficult. To avoid this an arrangement is provided by means of which the movement upon the index plate is increased and the index plate is made correspondingly larger. As this fea-

ture is of importance in the application of the invention three modifications are shown in Figs. 4, 5 and 6 on the same scale as the remaining figures.

Fig. 4 shows an ordinary pantograph in diagrammatic plan. This construction is known, for which reason it need only be stated that the pointer *k* (Figs. 2 and 3) descending from the toothed rod *z* has the form of an arch from the axis *9*, through an eye of which in the middle joint of the pantograph the pointer thus passes so that its vertical movement can take place without being communicated to the pantograph and without even influencing it.

Fig. 5 shows a device operating in the same manner but neater in appearance. The pointer *k'* is fixed in a slide *s* which moves within a sheath or casing *t* rotatable upon a vertical axis *t'*. This slide *s* and the casing *t* are each provided with a toothed arm *6, 7* between which arms and engaging with both is a small toothed wheel *8* to which the descending end of the toothed rod *z* (Figs. 1, 2 and 3) is connected. Slots both in the pointer and in the sheath permit free movement to the same. The action or effect is exactly the same as in the construction shown in Fig. 4.

In the construction shown in Fig. 5 a wire *u* is employed as the pointer. The wire is journaled so as to rotate upon an arm *5* in any direction the said arm having its fulcrum upon a small pillar *v* located somewhat to the rear. The wire *u* is caused to pass through a conical enlarged eyelet at the end of the toothed rod *z* which is bent downward, and rests with an enlarged portion upon the edge of the eyelet. The index plate *R'* which is here located somewhat lower, is trough-like in form. In other respects the operation is the same as in the other

modifications with the unimportant difference that the enlargement is not exactly proportional, which may however be compensated for by minute unequal divisions upon the index.

What I claim as my invention and desire to secure by Letters Patent is—

In a typewriter having a type roller the combination of a type roller spindle carrying the type roller at one end, a frame in which the type roller spindle is journaled and from which the end of the spindle carrying the type roller projects, a shaft, transverse to said spindle, adapted to have a horizontal and vertical movement imparted to it upon the movement of the type roller spindle, said transverse shaft being located near the opposite end to said spindle, the frame being caused to oscillate upon the transverse shaft by means of guides, a handle movable transversely to the longitudinal axis of the type roller spindle, a toothed rod adapted to engage in a gear rigidly mounted on said type roller spindle, the said handle being by its manifold movement adapted to rotate the type roller spindle, a pointer secured to the said toothed rod, an index plate upon which the said pointer is adapted to move, a pantograph device adapted to increase the extent of the movement of said pointer in a straight line and in right and left hand directions, whereby the movement of the said pointer is more clearly indicated upon the index plate substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRIEDRICH VON HEFNER-ALTENECK.

Witnesses:

HENRY R. MCGINNIS,
CLARA I. PARKER.