

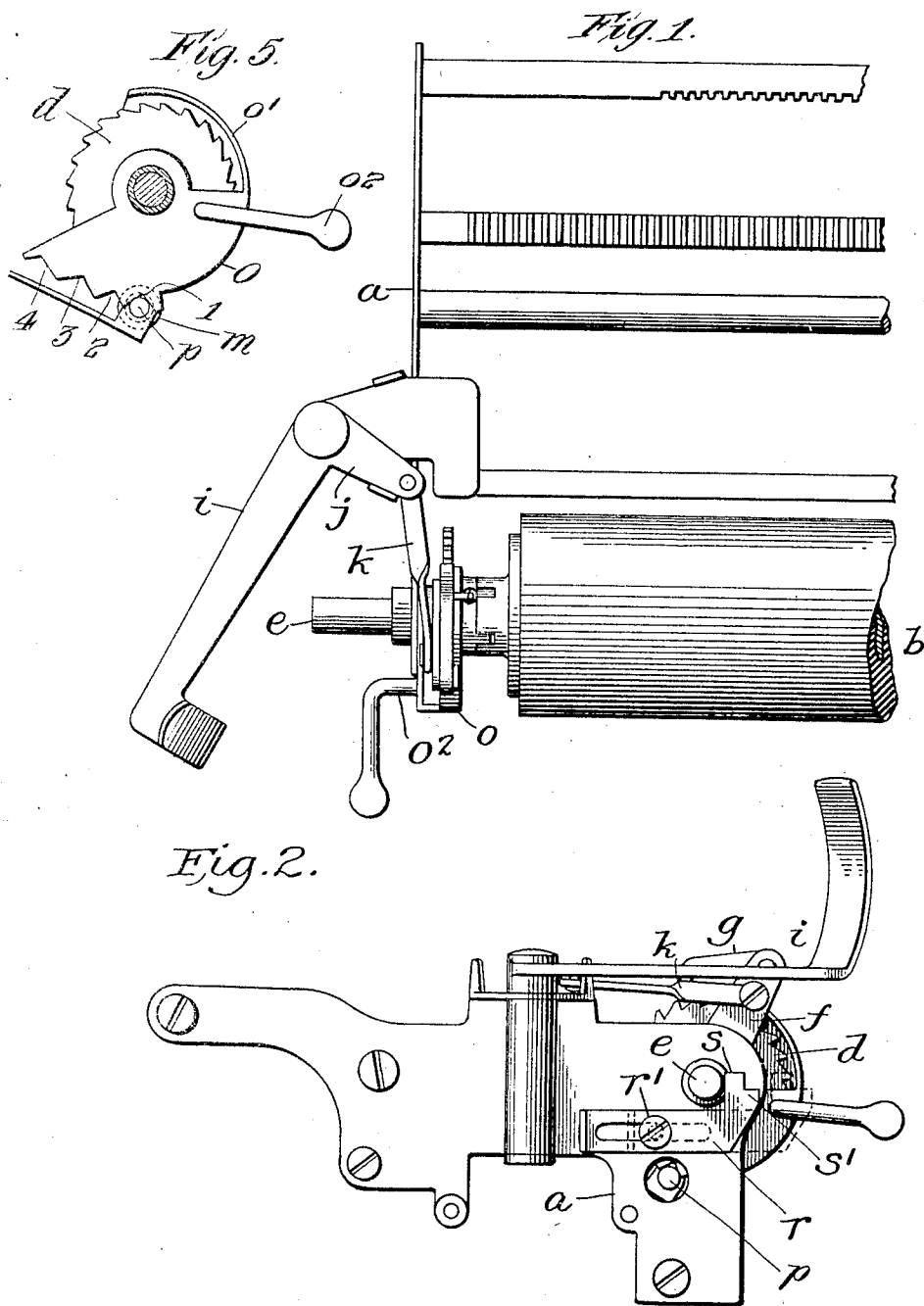
No. 856,869.

PATENTED JUNE 11, 1907.

E. B. HESS.
WRITING MACHINE.

APPLICATION FILED FEB. 16, 1906.

2 SHEETS—SHEET 1.



WITNESSES:

James F. Duhamel
L. F. Browning.

INVENTOR:

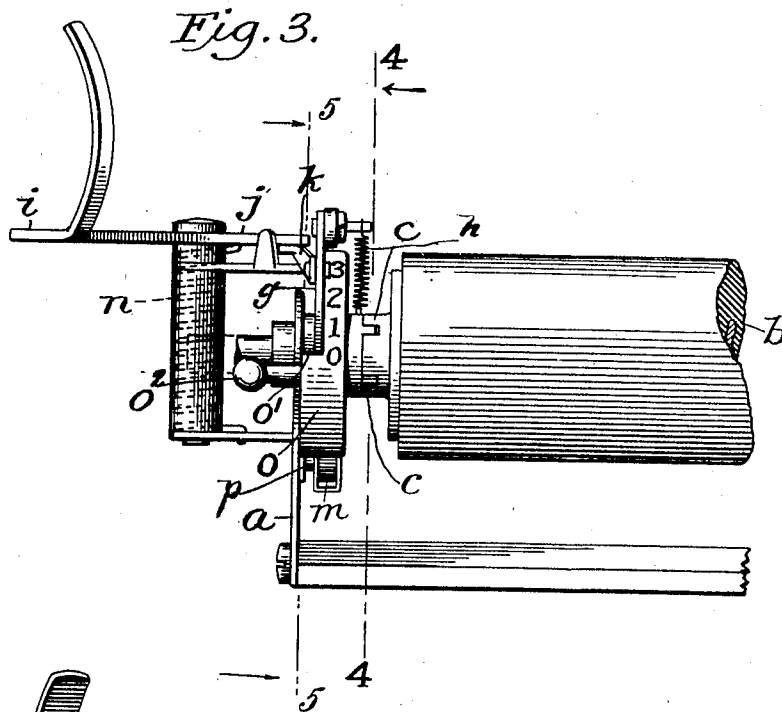
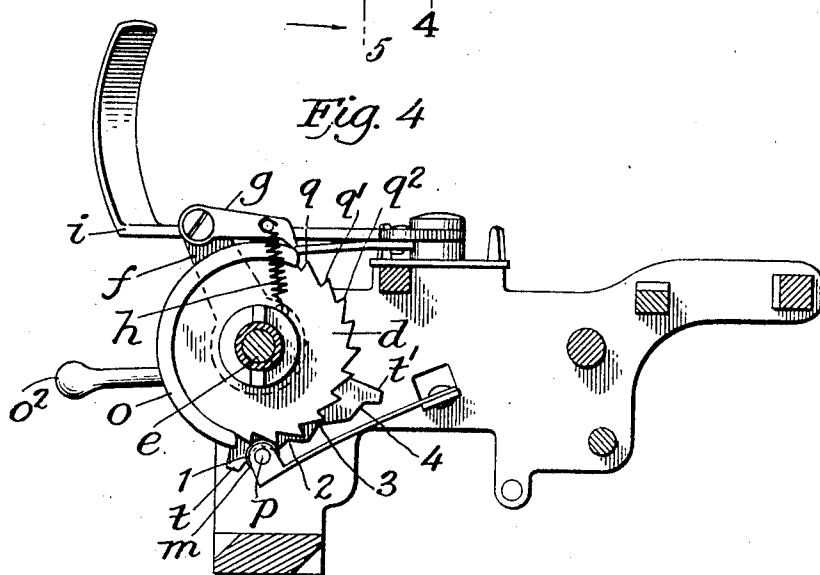
Edward B. Hess
By his Attorney
Edward C. Davidson.

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28 SHEETS—SHEET 2.



WITNESSES:

James I. Duhamel
L. F. Browning

INVENTOR:

Edward B. Hess
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Edward C. Davidson

UNITED STATES PATENT OFFICE.

EDWARD B. HESS, OF NEW YORK, N. Y., ASSIGNOR TO ROYAL TYPEWRITER COMPANY, OF HOBOKEN, NEW JERSEY, A CORPORATION OF NEW JERSEY.

WRITING-MACHINE.

No. 856,869.

Specification of Letters Patent.

Patented June 11, 1907.

Application filed February 16, 1906. Serial No. 301,362.

To all whom it may concern:

Be it known that I, EDWARD B. HESS, a citizen of the United States of America, residing in the borough of Brooklyn, city and State of New York, have invented certain Improvements in Writing-Machines, of which the following is a specification.

This invention relates to line space devices for a rotatable cylinder bar typewriting machine and consists of novel features of construction hereinafter set out in detail.

In the accompanying drawing: Figure 1 is a plan view of the left hand end of a platen and associated parts; Fig. 2, an end elevation thereof; Fig. 3, a front elevation; Fig. 4, a section on the line 4, 4, of Fig. 3; and Fig. 5 a detail transverse section taken just inside the side plate on the general line 5, 5, of Fig. 3.

The carriage comprises side plates *a*, one only being shown, coupled by transverse rods. The platen *b* is connected by interlocking or clutch joint *c* with the hub of ratchet wheel *d*. These parts turn with the platen shaft *e*, to which they are connected by appropriate set screws or otherwise. On the outer side of the ratchet wheel and rocking loosely upon the hub thereof is a radial arm *f* in the end of which is pivoted a push-pawl *g* constantly drawn toward the periphery of the ratchet wheel by a coiled spring *h*. Pivoted in a bracket on the carriage side plate in rear of the platen is an elbow lever *i*, the longer end of which extends toward the front of the machine and is provided with a thumb piece. Its shorter arm *j*, is connected by a link *k* with the rocking radial arm *f*. When the long arm of the bell crank elbow lever is pushed inwardly, or toward the end of the platen, link *k* carries arm *f* rearwardly and pawl *g* engaging a tooth of the ratchet will move it the desired distance for spacing the printing lines upon the platen. A spring supported yielding roller detent or stop *m* bears upon the periphery of the ratchet wheel and holds it in the position to which it may be thrown by the push pawl, and against movement by reason of frictional contact of the pawl with the ratchet wheel on the return movement of the pawl. The elbow lever is restored to normal position by spring *n*.

To afford variation of line space, a rocking

guard or shield *o* is applied to the ratchet wheel and by its position determines the point in the stroke of pawl *g* at which it engages a tooth of the ratchet wheel. This shield consists of a plate mounted to rock upon the ratchet wheel hub on the inner side of the wheel. A portion of the plate, constituting the ratchet guard, is of a radius slightly in excess of that of the ratchet wheel and is circular throughout approximately a half diameter and is formed with an over-turned flange like portion *o* embracing the periphery of the ratchet wheel but cut away at *o'* (Fig. 3) to permit play of the rocking radial arm *f*. Another portion of the guard plate, also of greater radius than the ratchet wheel, is provided with a series of notches 1, 2, 3 and a cam part 4 of still greater radius. The edge of this latter part of the rocking guard plate is engaged by a projecting end of the shaft *p* of yielding roller detent *m* acting upon the ratchet wheel. These parts are so related that when the roller is pressed into the space between the points of two ratchet teeth and so tends to hold the ratchet wheel in position, the end of shaft *p* rests in one of the notches in the edge of the guard plate and retains the latter in position. Experience has shown that this arrangement of what is practically the same detent acting simultaneously upon the ratchet wheel and guard plate in the same radial lines and substantially diametrically opposite the push pawl, has advantages not only on the score of economy of construction but affords also improved operation. In the position shown in the drawings when the pawl moves forward it will engage ratchet tooth *q* (Fig 4) and move the ratchet wheel through a space represented by three of its teeth. In this position, the shaft *p* is seated in notch 1 of the guard. When the guard, by means of its handle *o'* is moved to carry its upper edge forward (or in the direction of thrust of pawl *g*) until shaft *p* rests in notch 2, then the pawl will engage ratchet *q'* and throw the ratchet a space represented by two of its teeth. When the guard is further swung to bring the shaft *p* in the notch 3, then the pawl will engage ratchet *q''* and move ratchet wheel through a space represented by one tooth only. When the guard is further moved until shaft *p* runs out on the portion 4

of the guard, the detent *m* is held out of engagement with the teeth of the ratchet wheel and the push pawl *g*, if operated, will not engage any tooth of the ratchet. With the parts in this position, the platen may, by means of the usual thumb wheel, be set for printing upon any line.

In the use of a typewriting machine the operator has some particular line space commonly used by him and when for some special work he has thrown the shield to disengage the ratchet from its detent and hold the pawl out of operative engagement with the ratchet for the purpose already described; it is desirable that in returning the shield to normal position its movement should be limited by a positive stop. This may be accomplished in a variety of ways: one that experience has shown to be convenient and efficient is disclosed in Fig. 2. On the outer face of the side plate *a* is a horizontally movable slotted stop plate *r* held in any adjusted position by a set screw *r'*. Its upturned end is formed with two stop surfaces *s*, *s'*. When this plate is in the retracted position indicated in the position shown in Fig. 2, the shield may be moved freely in either direction to the full extent of its throw. If, however, plate *r* is projected so that its stop surface *s* is in the path of the part *o*² of the shield handle, the shield will be arrested in such position that permits the push pawl to move the ratchet wheel through a space represented by one tooth; and if the stop plate *r* is adjusted so that its surface *s'* is in the path of the handle, the shield will be arrested in such position that the push pawl will move the ratchet through a space represented by two of its teeth. The figures 0, 1, 2, 3 are placed upon the flange of the shield as shown, in Fig. 3; the figure in sight at the top of the series indicating the operative position of the shield. Thus, in Fig. 3, it appears that the parts are in position for the platen to be moved through a space represented by three of the ratchet teeth. If the shield were moved upwardly as viewed in this figure, so that the figure 2 occupies the position in which 3 now stands, the indication would be that the platen would be moved through a space represented by two ratchet teeth. As is well understood, the roller ratchet detent pressing into the intervals between points of adjacent teeth serves to justify or align the platen in the event of slight overthrow or slightly inadequate extent of movement of the ratchet wheel by its operating means. The projections *t*, *t'* at the respective ends of the notched projecting edge of the guard serve by engaging the pintle *p* to determine the throw of the latter.

I claim as my invention:

1. Line space devices for a writing machine, comprising the combination of a platen and its ratchet wheel, arm rocking

about the axis of the wheel, a push pawl pivoted in the end of the arm and arranged in the plane of the ratchet wheel, a spring normally tending to draw the pawl into engagement with the wheel, a shield rocking about the axis of the wheel and having a flange embracing the wheel throughout part of its circumference, one end of such flange being interposed between the pawl and wheel and acting to regulate the space through which the pawl will move the platen, a yielding detent operating upon the ratchet wheel to hold it in determined position to which it may be moved and a second detent operating upon the shield to hold it in the position to which it may be adjusted.

2. Line space devices for a writing machine, comprising a rotatable platen and its ratchet wheel, a pawl actuated to engage and move the ratchet wheel, a shield determining the point in the stroke of the pawl at which it shall engage the wheel, two detents respectively engaging the ratchet wheel and shield for the purpose set forth, and a yielding support by which both detents are carried.

3. Line space devices for a writing machine, comprising the combination of a rotatable platen and its ratchet, a pawl actuated to engage and move the ratchet, a yielding detent acting upon the ratchet, an adjustable shield applied to the ratchet to determine the point in the stroke of the pawl at which it shall engage the ratchet and having an edge with notches one for each position of the shield and a cam part, a yielding detent adapted to engage such notches and cam part and means whereby when such detent engages the latter surface the detent of the ratchet wheel is thrown out of engagement with it.

4. Line space devices for a writing machine, comprising the combination of a rotatable platen and its ratchet, a pawl actuated to engage the ratchet to partially rotate it, a shield rocking about the axis of the ratchet and having two portions, one serving as a guard to determine the point in the throw of the pawl at which it shall engage the ratchet wheel, and another portion having notches and a surface 4 of greater radius, a yielding arm, two detents carried thereby, one acting on the ratchet wheel and the other upon the last named portion of the guard, the arrangement being such that the ratchet detent remains in operative relation to the ratchets in all positions of the guard, except that in which the guard detent engages the surface 4 when the ratchet detent is carried out of engagement with the ratchet wheel.

5. Line space devices for a writing machine, comprising the combination of a rotatable platen, and its ratchet, means for rotating the ratchet through variable distances to determine the line space, a guard rocking about the axis of the ratchet and acting to

determine the tooth of the ratchet that shall be engaged by the operating means to thereby determine the line space, such guard having a notched edge of greater radius than the ratchet wheel which edge has a portion 4 of still greater radius, a spring arm, and two detents carried thereby, one detent engaging the ratchet wheel and the other the edge of the last named portion of the guard, the parts operating substantially as described.

6. Line space devices for a writing machine, comprising the combination of a rotatable platen, its ratchet, a pawl for actuating the ratchet through variable distances to afford different line spaces, an adjustable shield rocking about the axis of the ratchet and having on one side of said axis a flange embracing the ratchet and normally inter-

posed between it and the pawl and, on the other side of the axis, an edge of greater radius than the ratchet provided with notches and a portion 4 of still greater radius, a yielding detent engaging the ratchet, a yielding detent engaging the notched edge of the shield, and means whereby when the portion 4 of the shield is moved to a position to engage the shield detent the ratchet detent is thrown out of operative relation to the ratchet.

In testimony whereof, I have hereunto subscribed my name.

EDWARD B. HESS.

Witnesses:

EDWARD C. DAVIDSON,
L. F. BROWNING.