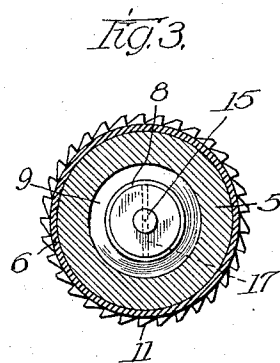
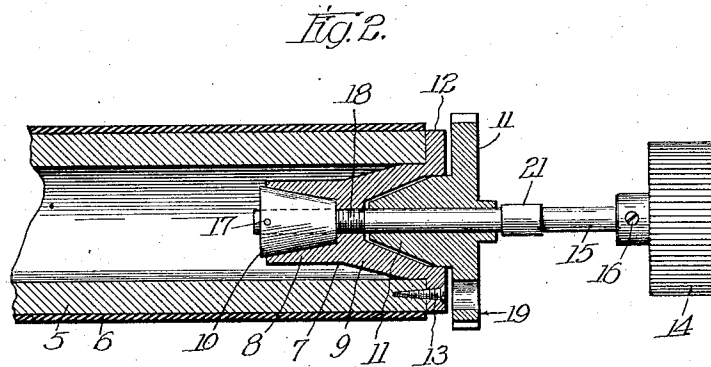
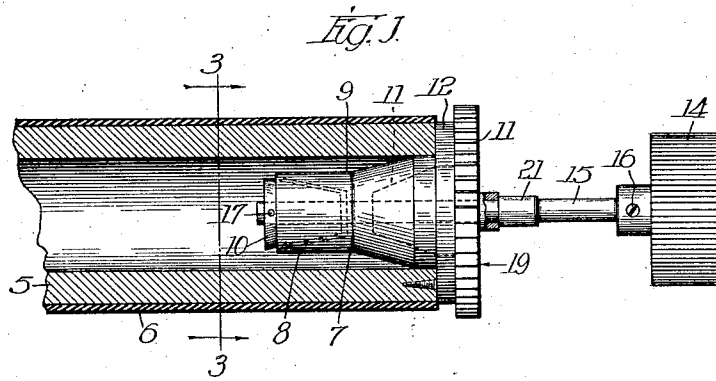


A. R. AMES.
TYPE WRITING MACHINE.
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1,011,551.

Patented Dec. 12, 1911.



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UNITED STATES PATENT OFFICE.

ARTHUR R. AMES, OF LA GRANGE, ILLINOIS.

TYPE-WRITING MACHINE.

1,011,551.

Specification of Letters Patent.

Patented Dec. 12, 1911.

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To all whom it may concern:

Be it known that I, ARTHUR R. AMES, a citizen of the United States, residing at La Grange, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to improvements in typewriting machines, and more particularly to line-spacing mechanism therefor.

One of the objects of my invention is to provide a novel mechanism whereby the platen and its shaft may easily and quickly be disconnected from the line-spacing ratchet.

Another object of my invention is to provide mechanism involving a relatively movable platen and hand wheel therefor, and clutches whereby relative movement of the platen and hand wheel may connect them for rotation together for rotation with the line-spacing ratchet, or for rotation together independently of said ratchet.

Still another object of my invention is to provide a line-spacing mechanism which shall utilize coacting clutch members so associated as to require no extraneous operating devices other than the hand wheels ordinarily provided upon the opposite sides of the machine.

Other and further objects of my invention will become apparent to persons skilled in the art from a consideration of the following description taken in conjunction with the accompanying drawings, wherein—

Figure 1 is a side elevation showing the application of my invention to an ordinary type-writer platen, with the platen shown in section, and with the line-spacing ratchet in rotatable engagement therewith; Fig. 2 is a central vertical section of the device showing the platen cylinder and hand wheel connected for rotation independently of the line-spacing ratchet; and Fig. 3 is a section on line 3—3 of Fig. 1.

In the practice of devices such as I have herein shown, it is, of course, highly advantageous that the mechanism be as simple as possible and that the process of changing the engagement between the platen and line-spacing ratchet shall require little movement of the parts, and not necessitate the provision of protruding levers, buttons, handles, or the like, to be used in operating the device. To the end of attaining such an advantageous construction, my invention con-

templates the provision, with the usual platen and line-spacing ratchet, of a hand wheel and its shaft together movable relatively to the platen and ratchet, and clutch means between the platen, ratchet, and hand wheel whereby relative movement of the hand wheel, in one direction, will connect the platen and hand wheel together for rotation independently of the ratchet, and relative movement of the hand wheel in the opposite direction will first disconnect all the parts and thereafter connect them for rotation in unison.

Specifically, in the embodiment herein shown, I provide, in connection with the ordinary platen cylinder, comprising the core 5 and platen sheath 6, a head 7 having oppositely facing, conical depressions, comprising clutch members 8 and 9, for frictional engagement with the coacting conical clutch members 10 and 11 associated respectively with the hand wheel shaft and the line-spacing ratchet. The head, 7, provides, further, a laterally extending rim 12 by means of which the head may be secured for rotation with the platen, as by screws 13, taking into the platen core 5.

The usual hand wheel 14 is mounted upon shaft 15 and secured for rotation therewith as by screw 16, said shaft having secured upon its opposite end, as by pin 17, the conical clutch member 10. Between shaft 15 and the platen head 7, I provide a screw-thread engagement as shown at 18, so that rotation of the hand wheel and shaft in one direction, relative to said platen, will cause clutch members 8 and 10 to come into frictional engagement, and rotation of said hand wheel and shaft in the opposite direction relative to the said platen will cause disengagement of said clutches.

The line-spacing ratchet 19 is mounted loosely upon the shaft 15 and may be made integral with the conical clutch member 11. Preferably also as an integral part of the ratchet, I provide a hub portion 20 for engagement with a shoulder 21 upon the shaft 15, so that ratchet 19 is included between the clutch member 9 of the platen and the shoulder 21 of the shaft.

In the operation of the device above described, it will be apparent that with the parts in the position shown in Fig. 2, the platen and hand wheel may be rotated together independently of the ratchet, since the coacting clutch members 8 and 10, be-

tween the platen and shaft, are in frictional engagement, and the clutch members 9 and 11, between the platen and ratchet, are out of engagement, the ratchet therefore being
 5 freely rotatable between clutch members 11 and 21. Further, it will be apparent that the existing coaction between the members 8 and 10 may be given the desired firmness by turning the hand wheel 14 relative to the
 10 platen (or relative to the opposite hand wheel, not shown, which in practice is fixedly secured to the platen). With the parts in the position shown in Fig. 2, the platen may be rotated to any desired alinement, as
 15 for convenience in writing upon ruled paper, and the clutch members 8 and 10 may be brought into such tight engagement by rotation of the shaft screw and are of such acute angle, that they will remain in contact
 20 for all ordinary work whether the hand wheel 14 be used to turn the platen backward or forward, without fear of disengaging the clutch. Now, if it is desired that the platen cylinder shall be again brought into
 25 engagement with the line-spacing ratchet 19, it is only necessary to disengage the clutch members 8 and 10, by rotation of the hand wheel 14 in direction opposite to that which brought them into engagement. Further,
 30 movement of the hand wheel in a direction which disengages the clutches 8 and 10, causes the shoulder 21 to abut against hub 20 of the line-spacing ratchet and thereby to move the conical clutch member 11 into
 35 frictional engagement with the coacting clutch member 9 of the platen. The platen, ratchet, and shaft are thus brought into tight engagement through the screw-threads 18, coacting clutch members 9 and 11, and
 40 coacting hub 20 and shoulder 21. Under these conditions, the platen will come to rest under the government of the line-spacing ratchet 17 as usual in typewriting machines.

In practice, the hand wheel 14 is effective
 45 to move the platen in either direction, since the force required to move the platen in a backward direction is less than the force applied in the opposite direction to bring the ratchet and platen into rotatable engagement.
 50 Thus, it will be seen that the only operative movement necessary to engage, or disengage, the platen from the line-spacing ratchet is simply the relative movement of the hand wheels of the machine. Further,
 55 the positions of engagement of the platen with the ratchet will not always coincide, so that the wear of the letters striking against the platen surface is distributed over its entire area, and does not fall always on a
 60 certain line, as usual in typewriting machines.

While I have herein described in some detail a particular embodiment of my invention, it will be apparent that many changes
 65 may be made in the specific structures em-

bodied, and that other specific means of engagement between the parts might be employed to embody the herein disclosed correlation of clutches, or other forms of the specific devices herein shown, without departure from the spirit of my invention and within the scope of the appended claims.

What I claim is:

1. In a line-spacing mechanism, the combination with a platen, a hand wheel, and a line-spacing ratchet, said platen, hand wheel, and ratchet being rotatable relative to each other, a clutch member rotatable with the ratchet, a platen head providing a coacting platen clutch member and a second
 75 platen clutch member, clutch members rotatable with said hand wheel between which said platen and ratchet clutch-members are included adapted and arranged for engagement respectively with said second platen
 80 clutch member and with said ratchet, and means to move said hand wheel clutch members into engagement with either the platen clutch member or the ratchet respectively to disconnect or to connect said platen and
 85 ratchet.

2. In a line-spacing mechanism, the combination with a platen, a hand wheel, and a line-spacing ratchet, said platen, hand wheel, and ratchet being rotatable relative to each
 95 other, of a clutch member rotatable with said ratchet, a clutch member rotatable with said platen, clutch members rotatable with said hand wheel, between which said ratchet and platen clutch members are included, and
 100 means to move said several clutch members into engagement to connect said platen and hand wheel for rotation independently of said ratchet, and to connect said platen and hand wheel for rotation with said ratchet.

3. In a line spacing mechanism, the combination with a platen, a hand wheel, and a line spacing ratchet, said platen, hand wheel, and ratchet being rotatable relative to each
 110 other; of a platen head providing a central screw-threaded portion and two clutch members between which said central screw threaded portion is located, a shaft passing through said platen head, having screw-threads for engagement with said threads of
 115 the platen head, and providing a clutch member within the platen for coaction with the inner of said platen clutch members and a clutch member without the platen for coaction with said ratchet, the ratchet having
 120 a clutch member for coaction with the remaining platen clutch member and a clutch for coaction with the outer of said shaft clutch members.

4. In a line spacing mechanism, the combination with a platen, a hand wheel, and a line spacing ratchet, said platen, hand wheel, and ratchet being rotatable relative to each
 125 other, of a platen head providing oppositely facing clutch members and an inter-

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mediate threaded bore, a hand wheel shaft loosely supporting said ratchet, and having threads engaging the threads of the platen head bore, and clutch members provided respectively upon the shaft and ratchet, whereby rotation of the shaft in one direction causes engagement between the inner platen clutch and the shaft, and rotation in the opposite direction causes engagement between the outer platen clutch, the ratchet, and the hand wheel shaft.

5. In a line spacing mechanism, the combination of a platen, a hand wheel, and a line spacing ratchet all relatively rotatable

with respect to each other, a platen head shaped to provide an inner and an outer clutch member, a hand wheel shaft passing through the head, and clutch members on the shaft, respectively within and without the head, respectively to engage the head and to force the ratchet into engagement therewith, substantially as described.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

ARTHUR R. AMES.

In the presence of—

W. LINN ALLEN,
MARY F. ALLEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
