W. J. NEIDIG.

TYPE WRITING MACHINE.

APPLICATION FILED SEPT. 23, 1912. RENEWED SEPT. 17, 1913.

Patented Apr. 21, 1914.

1,093,798.

Fig. 1.

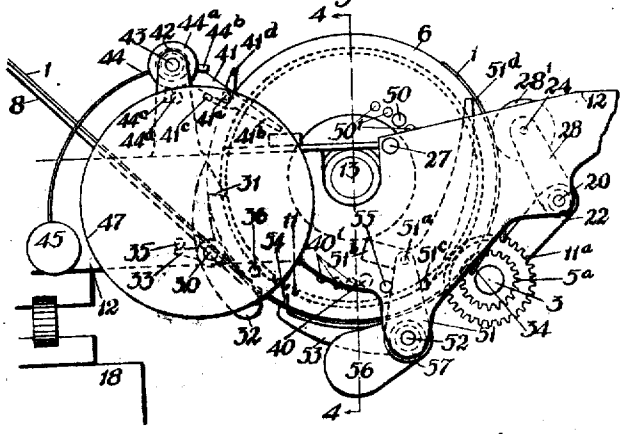


Fig. 2.

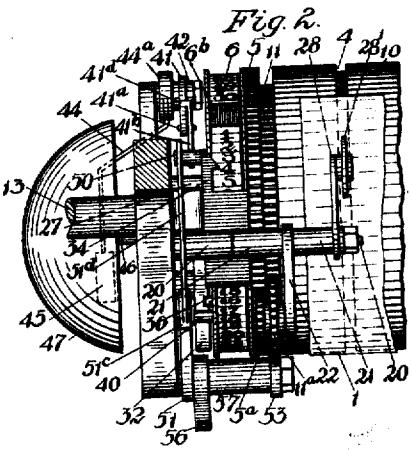


Fig. 3.

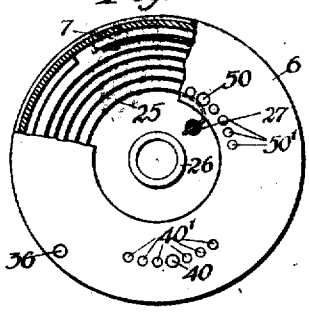


Fig. 4.

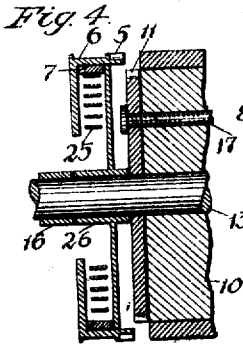


Fig. 5.

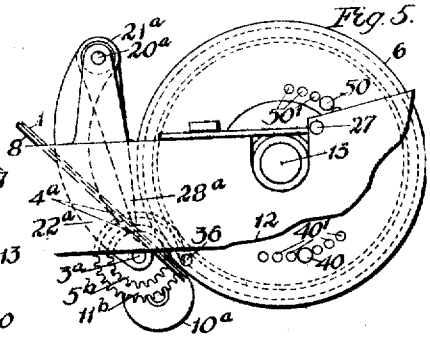


Fig. 8.

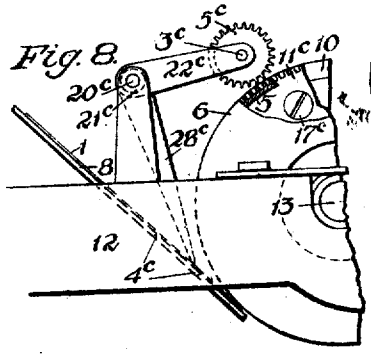


Fig. 6.

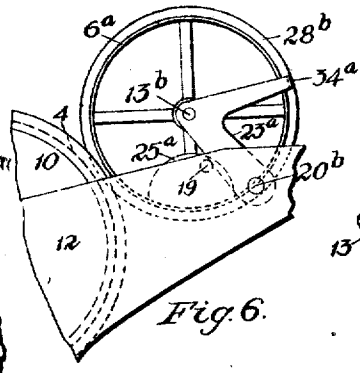
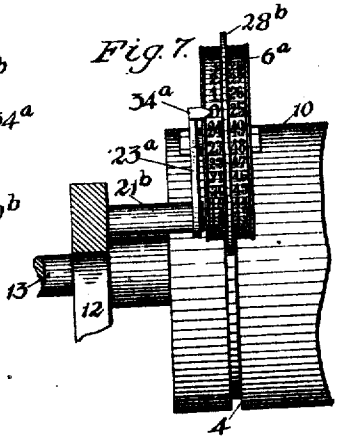


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM J. NEIDIG, OF MADISON, WISCONSIN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO CHICAGO TITLE AND TRUST COMPANY, A CORPORATION OF ILLINOIS, TRUSTEE.

TYPE-WRITING MACHINE.

1,093,798. Specification of Letters Patent. Patented Apr. 21, 1914.

Application filed September 23, 1912, Serial No. 721,785. Renewed September 17, 1913. Serial No. 790,353.

To all whom it may concern:

Be it known that I, WILLIAM J. NEIDIG, a citizen of the United States, residing at Madison, in the county of Dane, State of Wisconsin, have invented a certain new and useful Improvement in Type-Writing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

Certain principles and features of my invention as described herein are included within the generic invention which is described and claimed in my co-pending application filed April 20, 1908, Serial No. 428,212. One branch of my said generic invention supplies the operator of a typewriting machine with indicating means, controlled by the sheet upon which he is writing, for indicating successive positions of the leading end of the sheet and for warning him of the arrival of one or more points on the sheet a predetermined distance therefrom into printing position. The present invention supplies the operator with such means.

The present invention is distinguished by the employment of an operative member which is supplied with driving devices for giving it movement coördinate with that of the platen at a predetermined point in the progress of the leading end of the sheet, and which is releasable from the control of said devices, and which is supplied with means operating to return it into initial position when released from such control, and through which the said indicating means, comprising in this case indices and various types of visual, audible and machine-lock signaling devices, are called into operation at predetermined sheet-positions.

Certain features and combinations as shown, described and claimed herein are also intended for indicating uses in connection with other branches of my broader invention aforesaid.

In the drawings,—Figure 1 is a view in side elevation showing a portion of a typewriting machine with my invention applied thereto. Fig. 2 is a view in front elevation of a portion of the same, with the carriage indicated in section. Fig. 3 is a detail view, partly broken away and partly in section, of operative member 6 and some of its connections. Fig. 4 is a view in section of certain parts on the line 4—4, Fig. 1. Fig. 5 is an end elevation of a portion of a typewriter carriage showing a modification in the form and mounting of the sheet-controlled elements of Figs. 1 and 2. Fig. 6 is an end elevation of another modification. Fig. 7 is a front view of the parts shown in Fig. 6, with the platen arbor added. Fig. 8 is an end elevation partly broken away and partly in section of a modification in which the control is by the bottom end of the sheet instead of the leading end.

With reference to the drawings.—The usual stationary main frame of a typewriting machine is indicated at 18, and the end of the usual transversely movable carriage-frame at 12, in which is journaled platen arbor 13 bearing platen 10 attached thereon, the said platen and its arbor being rotated in usual manner by line-space mechanism not shown herein. As referred to, the parts are old in the art and may be of any approved type. Other usual typewriter parts not shown herein are or may be as in practice.

The embodiment of my invention that I prefer to employ is applied to the above-named typewriter structure as follows: A toothed wheel 11 is conveniently attached at the end of the platen by screws 17 so as to rotate in unison with the platen and serve as a driver. Adjacent to said wheel but operative independently thereof is operative member 6 having a toothed rim 5 attached thereto. Shouldered pin 20 on carriage frame 12 has journaled thereon sleeve 21, fixedly attached upon which is arm 22 bearing pin 3 upon which are journaled the toothed rider-wheels 5^a and 11^a, connected to rotate in unison, wheel 5^a being adapted to mesh with toothed rim 5 and wheel 11^a with toothed driver 11 so as to connect rim 5 to be driven by wheel 11. The relative diameter of the several wheels may be as desired—I prefer to gear down rim 5 so that it will revolve more slowly than the driver 11. Also fixedly attached upon sleeve 21 is paper-feeler 28 supplied with a paper-contacting roller-end 28′ journaled on pin 24 on the feeler. Platen 10 is supplied with a circumferential opening or slot 4, into which the roller portion 28′ of paper-feeler 28 has its path in the absence of the paper-sheet, the weight of arm 22 and wheels 5^a and 11^a tending to press the said

roller portion of the paper-feeler into the slot, which is made shallow so as to limit the entering movement thereof. Operative member 6 previously referred to is preferably given the form of a revoluble drum, supported from a central hub or bushing 26 (see Fig. 4) which is journaled on platen arbor 10. The outer or face wall of said drum (Fig. 3) has a central aperture therein, into which projects one end of a split post 27 attached to carriage frame 12. Inside said drum a resilient friction-ring 7 presses radially outward into frictional engagement with the rim of the drum. One end of a coiled spring 25 is attached to said ring, the other end being secured in the cleft of post 27. The purpose of the friction-ring is to prevent over-winding the spring. Drum 6 bears a fixed projection 36, in the path of which stop 31, pivoted on pin 30 on carriage frame 12, is maintained by an attached positioning-weight 32, which presses lug 33, also attached to stop 31, against position-stop 35 on the carriage-frame. Spring 25 tends to rotate the drum so as to bring the drum into initial position with projection 36 bearing against stop 31. Carriage frame 12 also bears on an upstanding portion thereof an inwardly projecting pin 43, on which is journaled sleeve 42 bearing fixedly attached arm 41 and fixedly attached hub 44^a. A resilient hammer-stem 44 bearing bell-hammer 45 springs from said hub. Coöperating with said hammer is bell 47, carried on carriage-frame 12 by central pin 46 (Fig. 2). The movement of sleeve 42 and its parts on pin 43 is limited by position-stop 44^d (Fig. 1) on carriage-frame 12 in cooperation with lugs 44^b and 44^c on hub 44^a. Arm 41 bears pin 41^a, on which is journaled arm 41^b, the movement of which on said pin is limited by lugs 41^c and 41^d, which are bent over to engage with arm 41 as against a stop. Arm 41^b projects into the path of projection 40, which is adapted to be screwed into any one of the threaded holes 40′ in the face wall of drum 6, thus being angularly adjustable upon said drum. Carriage-frame 12 also bears inwardly projecting pin 52, on which is journaled hub 57. Radiating from said hub in upward direction is arm 51 bearing pin 51^a, on which is journaled arm 51^d having a lug 51^c to engage upon said arm 51 and limit the movement of arm 51^d thereon. A working portion 51^b of said arm 51^d projects into the path of projection 50, which is adapted to be screwed into any one of the threaded holes 50′ in the face wall of drum 6, thus being angularly adjustable on said drum. A position-stop 55 on carriage-frame 12 limits the movement of arm 51 in one direction, while weight 56 fixedly attached on hub 57 tends to hold said arm against said stop. Hub 57 bears also a fixedly attached arm 53 supplied with a pawl-shaped tooth 54 adapted to enter between the teeth of toothed wheel 11 and lock said wheel against forward rotation, but normally maintained out of locking position by its own weight and that of weight 56. It will be understood that arms 41^b and 51^b operate in different planes, and that projections 40 and 50 move in radially different paths, so that projection 40 coöperates only with arm 41^b, and projection 50 only with part 51^b.

Drum 6 is supplied with indices, preferably arranged in ascending order, and is thus an index-carrier. A coöperating stationary index 34 is attached to carriage-frame 12 in convenient position. It is immaterial whether the indices be of the kind shown, or in any especial order, or that the indication begin with any especial position of the sheet. A color-segment 6^b of paper or the like may be attached as by means of paste in any desired angular position upon the drum, to coöperate with index 34.

The mechanism operates as follows: In the absence of the sheet the roller portion of paper-feeler 28 has a position in slot 4, wheels 5^a and 11^a are out of engagement with wheels 5 and 11, and drum 6, free of engagement with the platen, stands at rest with projection 36 held against stop 31 by spring 25. The paper-sheet is entered in usual manner down paper-table 8 on carriage frame 12, and advanced as usual by the platen, which as regarded herein is the principal feed-roll for feeding the sheet through the machine. Eventually the leading end of the sheet encounters the roller portion of paper-feeler 28 and raises it out of slot 4, thereby rocking sleeve 21 and throwing wheels 5^a and 11^a into engagement with wheels 5 and 11, thereby connecting drum 6 with the platen. The drum thereafter moves coördinately with the sheet, and may be supplied with indices that will indicate the progress of the sheet. When the first line-position on the sheet comes into printing position, for instance, the point on the drum or index-carrier then in indicating position adjacent to the fixed index 34 may be supplied with an index 1, and for the next line-position with an index 2, and so on, at will. Continued advance of the sheet will bring color-segment 6^b into view from behind shield-pointer 34 at the predetermined time, thus giving the operator a visual signal that his sheet has arrived into predetermined position. Projection 40 will also be brought against arm 41^b at a predetermined time, and press it downwardly, raising bell-hammer 45, which with continued movement of said projection will be released when the projection clears said arm and strike the bell, giving the operator an audible signal as to his sheet-position. And projection 50 will be brought into engagement with part 51^b likewise, rocking lever 51 at the predeter-

mined time and through hub 57 causing arm 58 to lift tooth 54 into locking engagement with wheel 11, thus rendering a portion of the typewriter mechanism, namely in this case the sheet-advancing means, inoperative for use. The operator is enabled at will to release the locked mechanism by pressing arm 51^a toward the platen arbor until projection 50 clears part 51^b.

The knuckle-joint relationship between arms 41 and 41^b hereinbefore described is a provision to permit projection 40 to move backwardly past arm 41^b, lug 41^c separating from arm 41 in such an action, and lug 41^d preventing displacement of the parts. Projection 50 may be backed past part 51^b in a similar manner, lug 51^c separating from arm 51, and projection 36 moved forwardly past stop 31, lug 33 separating from position-stop 35 and permitting the movement.

In Fig. 5 is illustrated a modification in the form and position of the sheet-controlled parts of the mechanism. Carriage-frame 12 bears inwardly projecting pin 20^a, on which is journaled sleeve 21^a having fixed thereon arm 22^a and paper-feeler 28^a, the arm 22^a being mounted between the carriage-frame and the paper-feeler, and having a pin 3^a thereon. Journaled upon this pin and revolving in unison are the rider-wheels 5^b and 11^b, adapted to mesh with wheels 5 and 11 previously described. Instead of the circumferential slot 4 in the platen, a slot 4^a in the paper-table is employed into which paper-feeler 28^a has its path for a limited distance. The remainder of the mechanism is as has been described. The paper-sheet is entered in usual manner down paper-table 8, the leading end thereof raising paper-feeler 28^a out of slot 4^a, thereby rocking sleeve 21^a and throwing wheels 5^b and 11^b into mesh with wheels 5 and 11. The leading end of the sheet is advanced into the angle between feed-roll 10^a and the platen in usual manner, before the platen is turned. The platen is then revolved, advancing the sheet and also moving drum 6 from its preattained initial position. When the sheet is advanced into the first line position that portion of drum 6 adjacent to stationary index 34 may be supplied with an index 1 if desired, and with an index 2 for the next line position and so on, as before. The paper-feeler in this case does not terminate in an anti-friction roller, the figure being intended in connection with the earlier figures to illustrate something of the different forms and positions of paper-feelers possible to be used in such a mechanism.

Still a different form of paper-feeler is illustrated in Figs. 6 and 7, at 28^b. Carriage-frame 12 bears inwardly projecting pin 20^b, on which is journaled sleeve 21^b bearing arm 23^a, one branch of which is supplied with a pointer 34^a. Pin 13^b carried on said arm has journaled thereon drum 6^a, supplied with indices in a double row, the second row being a continuation of the first, so as to give a range of indication of two revolutions of the drum. Platen 10 is supplied with the same circumferential slot previously described in connection with the earlier figures, into which paper-feeler 28^b, which here takes the form of a ridge or slot-entering circumferential feeling and driving paper-contacting part upon the periphery of the drum, has its path in the absence of the sheet, being maintained out of engagement with the bottom of the slot by position-stop 19 on carriage-frame 12 in coöperation with arm 23^a. A weight 25^a is eccentrically attached upon the drum. During the absence of the sheet, as in the illustrations, the drum 6^a is brought into and maintained in a constant initial position by the action of weight 25^a. The sheet is entered and advanced as usual. When the leading end thereof encounters paper-feeler 28^b it lifts it out of slot 4. Thereby drum 6 is caused to rest upon the sheet. Further advance of the sheet causes a rotation of the drum through the frictional contact of the driver or paper-feeler 28^b with the sheet, from said initial position of the drum, and the line-positions relatively to the leading end of the sheet can be indicated as before by indices on the drum, except that in this case the drum is not geared down, and after one revolution thereof the indices are continued in a second column or row for the remainder of the progress of the sheet. It is to be noted that in both the preferred form of the device and in the several modifications the device is automatically reset.

Fig. 8 is a representation of a modification in which the indicating mechanism described in connection with Figs. 1 to 4 is controlled by the botton end of the sheet, instead of by the leading end, and in which the various indicating features are automatically operated with relation to the position of the bottom end of the sheet. Attached to platen 10 by convenient means, such as screws 17^c, is toothed wheel 11^c, to act as the driver element of the mechanism. Drum 6 having toothed rim 5 attached, is constructed as before described, so as to be returned into initial position by spring 25, with projection 33 resting against stop 31, and the other parts of the mechanism are constructed as described in connection with Figs. 1 to 4, except that the upstanding portion of carriage frame 12 bears the inwardly projecting axle 20^c, which is longer than axle 43 in Figs. 1 and 2, and which in addition to having journaled thereon sleeve 42 adjacent said frame, as in Figs. 1 and 2 (but not necessary to be shown in Fig. 8) has also journaled thereon at the end of said sleeve the independent sleeve 21^c, upon

which is fixedly attached an arm 22ᶜ bearing pin 3ᶜ at the end thereof, and upon which is also fixedly attached a paper-feeler 28ᶜ having movement into a slot or opening in the paper-table 8, indicated at 4ᶜ. A rider-gear 5ᶜ is journaled on pin 3ᶜ in such manner as to engage with both toothed wheels 11ᶜ and 5 when arm 22ᶜ is lowered, but to be clear of engagement with said wheels when paper-feeler 28ᶜ resting on sheet 1 maintains arm 22ᶜ in raised position, as in the illustration. It will be understood that axle 20 of Figs. 1 and 2 and the parts mounted thereon are not employed in this modification, nor is the circumferential slot 4 in the platen. This mechanism operates as follows: The paper sheet 1 is entered as usual down paper-table 8, the leading end thereof raising paper-feeler 28ᶜ out of slot 4ᶜ, thereby rocking sleeve 21ᶜ on axle 20ᶜ, raising arm 22ᶜ, and causing wheel 5ᶜ to be disengaged with wheels 11ᶜ and 5. Spring 25 thereupon acts rotatively upon drum 6 and returns it into initial position, with projection 36 resting against stop 31. In this position the parts remain until the bottom end of the sheet passes from under the paper-feeler, permitting the feeler to enter slot 4ᶜ and wheel 5ᶜ to engage with wheels 11ᶜ and 5. It will be understood that the weight of the parts 5ᶜ, 3ᶜ, 22ᶜ and 28ᶜ tends to cause said paper-feeler to enter said slot and said wheels to engage. Drum 6 will thereafter rotate with the platen, and as it always begins its movement from a constant starting position, and when the bottom end of the sheet is a constant distance from the printing point, indices can be supplied that will indicate the progress of the bottom end of the sheet relatively to the printing point. The other visual, audible and machine-lock indicating devices hereinbefore described as operating with the arrival of the leading end of the sheet into a predetermined position will be used with this modification to indicate the arrival of the bottom end of the sheet into predetermined position.

The devices shown in the drawings and described herein are part of a series of closely related inventions or improvements which are presented in a number of co-pending applications for Letters Patent filed by me. The said devices have a number of general objects in common with those forming the subject-matter of different applications in the said series, and to a certain extent embody and utilize various principles and features which are common to the devices shown and described in one or another of the said applications. Some of the said common principles and features are claimed broadly in my application filed April 20, 1908, aforesaid, and in my applications filed Dec. 13, 1909, Serial No. 532,928; Dec. 15, 1909, Serial No. 533,309; Dec. 22, 1909, Serial No. 534,559; May 20, 1912, Serial No. 698,440; and Dec. 5, 1912, Serial No. 735,108; and are made more especially the subject of claim in the said applications. The branch of the general invention that is covered hereby is distinguished by the characteristic features specified in the following claims.

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

1. In a typewriting machine, in combination, a platen, an operative member, indicating means called into operation through said member, means acting to give said member a constant starting position when disconnected from the platen, and means under the control of the leading end of the sheet for connecting said member to move with the platen from said starting position.

2. In a typewriting machine, in combination, a platen, an operative member, indicating means called into operation through said member, a paper-feeler, driving devices rendered effective by said paper-feeler beginning with the control of the feeler by the entered sheet for giving said operative member movement coördinate with that of the platen, and devices operating to give said member a constant starting or initial position when released from the control of said driving devices.

3. In a typewriting machine, in combination, a platen, an index carrier bearing indices, means acting to return said carrier into initial position when disconnected from the platen, a paper-feeler, and means rendered effective by said paper-feeler beginning with the control thereof by the entered sheet for giving said carrier movement with the platen.

4. In a typewriting machine, in combination, a platen, an operative member, indicating means called into operation through said member, means including a spring and co-operating stop devices for giving said member a predetermined initial position, and means under the control of the leading end of the sheet for giving said member movement coördinate with that of the platen from such position.

5. In a typewriting machine, in combination, a platen, an index-carrier having indices, means including a spring for returning said carrier into initial position, and means under the control of the leading end of the sheet for giving said member movement coördinate with that of the platen from such position.

6. In a typewriting machine, in combination, a platen, an index-carrier supplied with indices, means including a spring for returning said carrier into initial position, a paper-feeler, and toothed gearing connectible under control of said paper-feeler for actuating said member to move with the platen from said initial position.

7. In a typewriting machine, in combination, a platen, an operative member, visual signaling means called into operation through said member, means acting to give said member a constant starting position when disconnected from the platen, a paper-feeler, and means rendered effective by said paper-feeler beginning with the control thereof by the sheet for giving said operative member movement coördinate with that of the platen from said starting position.

8. In a typewriting machine, in combination, a platen, an operative member, visual signaling means called into operation through said member, means including a spring for returning said member into initial position, a paper-feeler, and toothed gearing connectible under control of said paper-feeler for actuating said operative member to move with the platen from said initial position

9. In a typewriting machine, in combination, a platen, an operative member, an audible signaling means called into operation through said member, means acting to give said member a constant starting position when disconnected from the platen, a paper-feeler, and means rendered effective by said paper-feeler beginning with the control thereof by the sheet for giving said operative member movement coördinate with that of the platen from said starting position.

10. In a typewriting machine, in combination, a platen, an operative member, an audible signaling means called into operation through said member, means including a spring for returning said member into initial position, a paper-feeler, and toothed gearing connectible under control of said paper-feeler for actuating said member to move with the platen from said initial position.

11. In a typewriting machine, in combination, typewriter mechanism including a platen, an operative member, means called into operation through said member for rendering a part or parts of the typewriter mechanism inoperative for use, means acting to give said member a constant starting position when disconnected from the platen, a paper-feeler, and means rendered effective by said paper-feeler beginning with the control thereof by the sheet for giving said operative member movement coördinate with that of the platen from said starting position.

12. In combination, typewriter mechanism including a platen, an operative member, means called into operation through said member for rendering a part or parts of the typewriter mechanism inoperative, means including a spring for returning said member into initial position, a paper-feeler, and toothed gearing connectible under control of said paper-feeler for actuating said operative member to move with the platen from said initial position.

13. In a typewriting machine, in combination, a platen, an operative member, indicating means called into operation through said member, means including a spring for returning said member into initial position, and toothed gearing connectible under control of the sheet for giving said member movement with the platen from such position.

14. In a typewriting machine, in combination, a platen, an operative member, indicating means called into operation through said member, a stop member, for stopping said member in a constant starting position, a spring for actuating said member against said stop, and toothed gearing connectible under control of the sheet for giving said member movement with the platen from said starting position.

15. In a typewriting machine, in combination, a platen, an operative member, indicating means called into operation through said member, means for giving said member a constant starting position, toothed wheels, one thereof connected with said member and one rotating in unison with the platen, and a sheet-controlled rider-gear for connecting said operative member through said toothed wheels to move with the platen from said starting position.

16. In a typewriting machine, in combination, a platen, an operative member, indicating means called into operation through said member, means including a spring for returning said member into initial position, toothed wheels, one thereof connected with said member and one rotating in unison with the platen, a paper-feeler, and means controlled by said paper-feeler for connecting said operative member through said toothed wheels to move with the platen from said starting position.

17. In a typewriting machine, in combination, a platen having a circumferential opening, a paper-feeler having movement into said opening, a revoluble member, indicating means called into operation through said member, a stop for stopping said member in starting position, a spring for actuating said member against said stop, and means controlled by said paper-feeler for connecting said revoluble member to rotate in unison with the platen from said starting position.

18. In a typewriting machine, in combination, a platen, a revoluble member, indicating means called into operation through said member, a stop for stopping said member in starting position, a spring for actuating said member against said stop, toothed wheels, one thereof connected with said member and one rotating in unison with the

platen, a paper-feeler, and means controlled by said paper-feeler for connecting said member through said toothed wheels to rotate in unison with the platen from said starting position.

19. In a typewriting machine, in combination, a platen, an index carrier bearing indices, a stop for stopping said carrier in starting position, a spring for actuating said carrier against said stop, a paper-feeler, and toothed gearing connectible under control of said paper-feeler for giving said carrier movement with the platen from said starting position.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM J. NEIDIG.

Witnesses:
CLIFFORD A. ROHE,
ALFRED BARSTOW.

Correction in Letters Patent No. 1,093,798.

It is hereby certified that in Letters Patent No. 1,093,798, granted April 21, 1914, upon the application of William J. Neidig, of Madison, Wisconsin, for an improvement in "Type-Writing Machines," an error appears in the printed specification requiring correction as follows: Page 5, line 81, after the word "stop" strike out the word and comma "member,"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 12th day of May, A. D., 1914.

[SEAL.]

J. T. NEWTON,
Acting Commissioner of Patents.