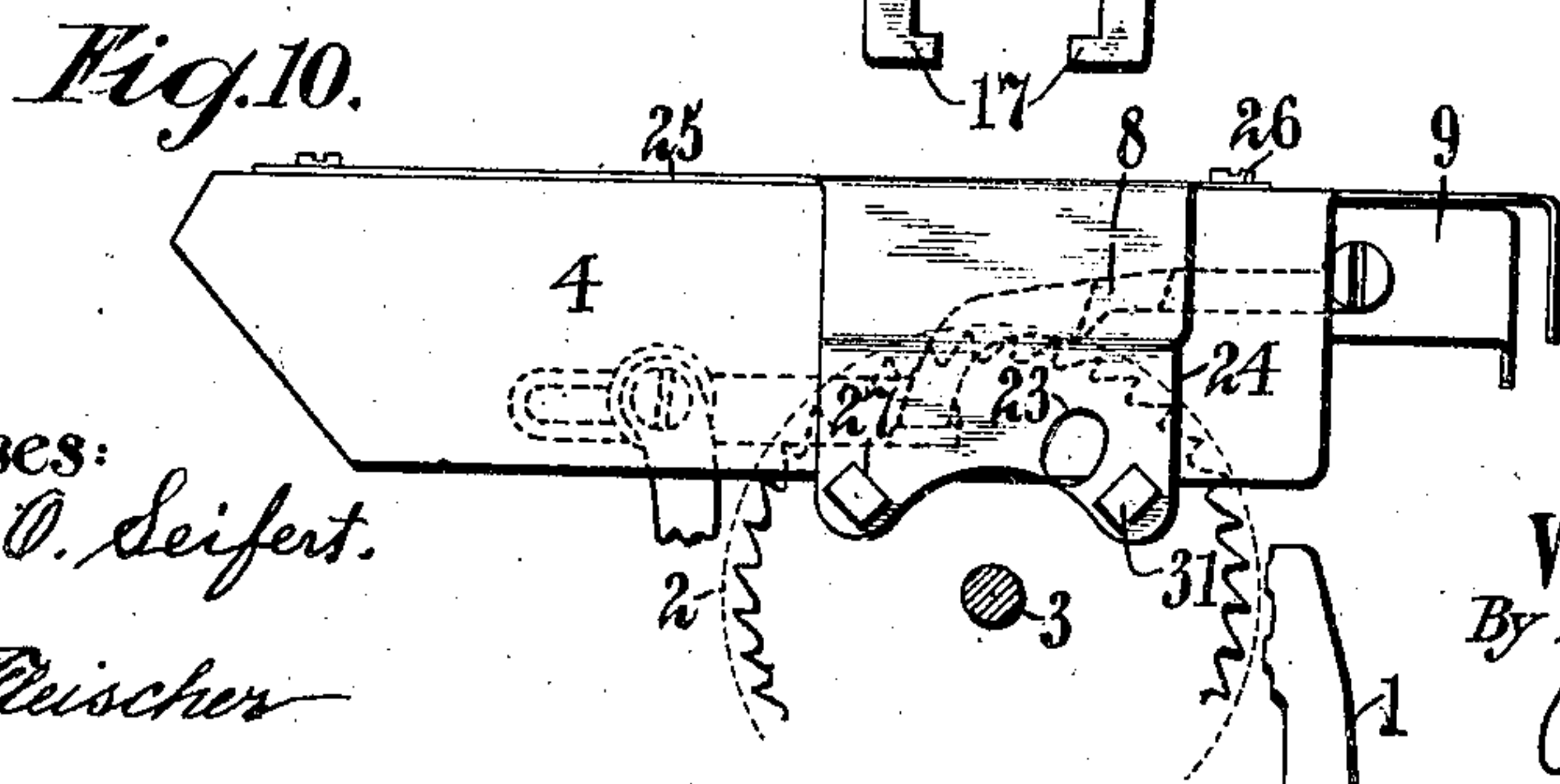
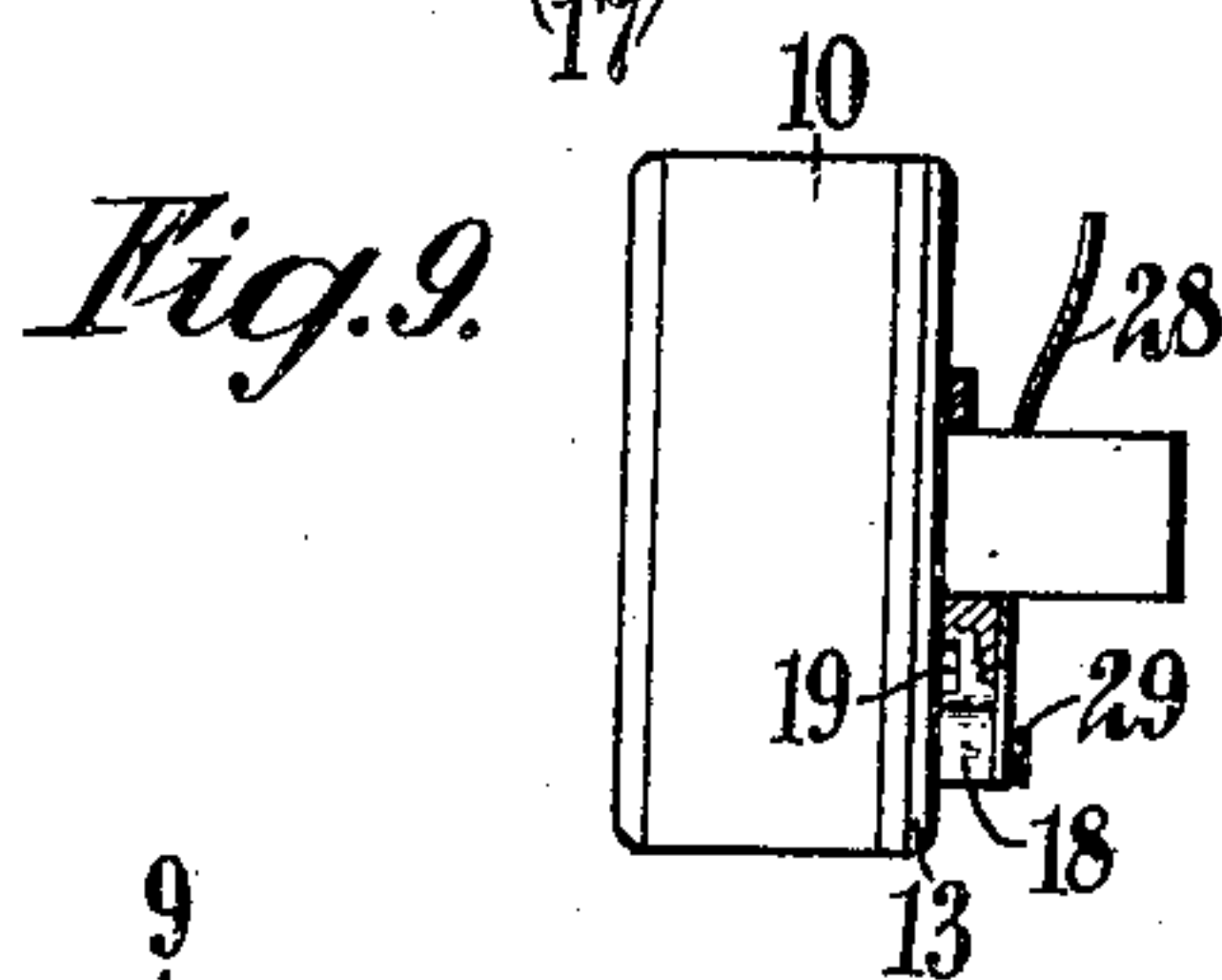
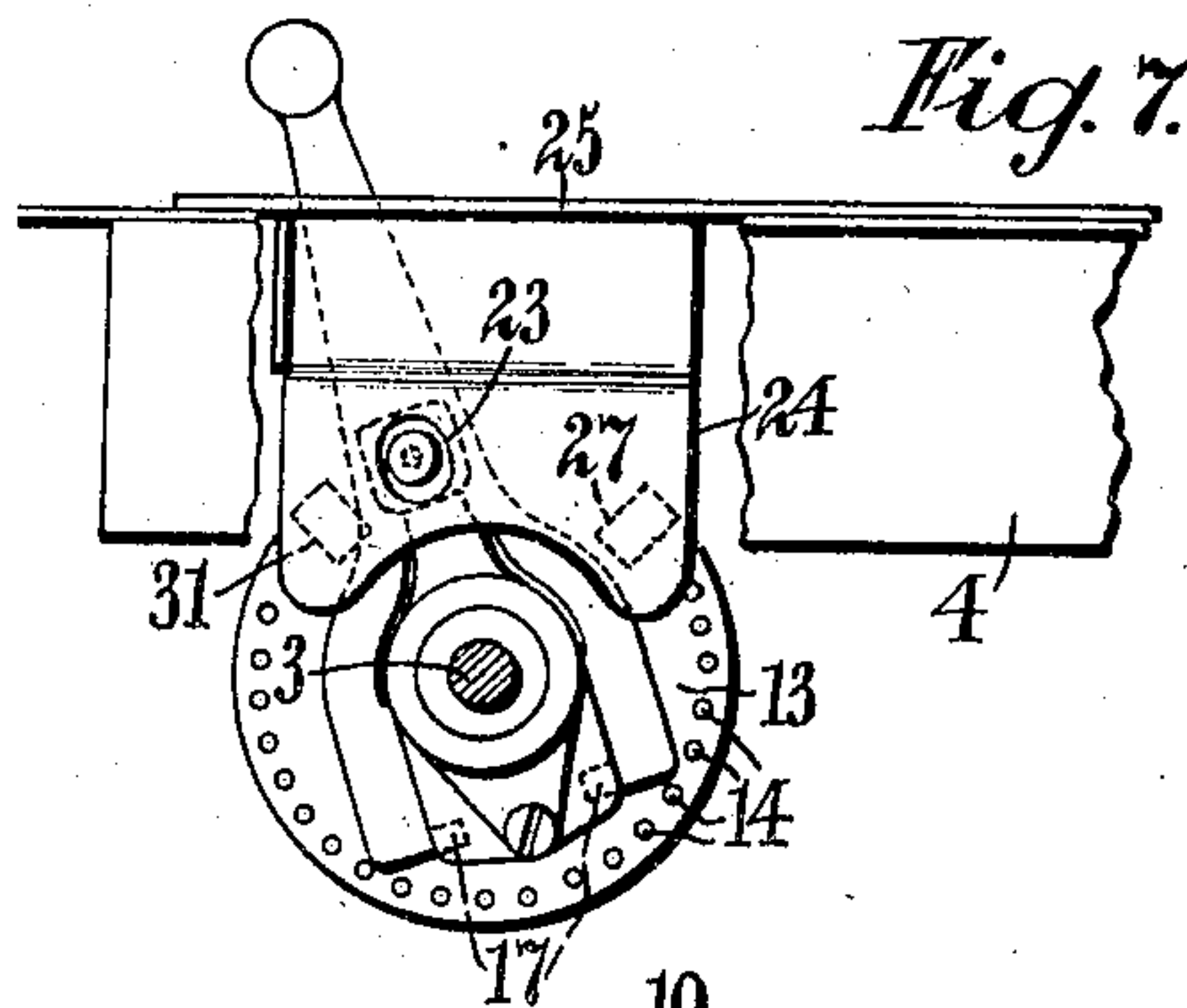
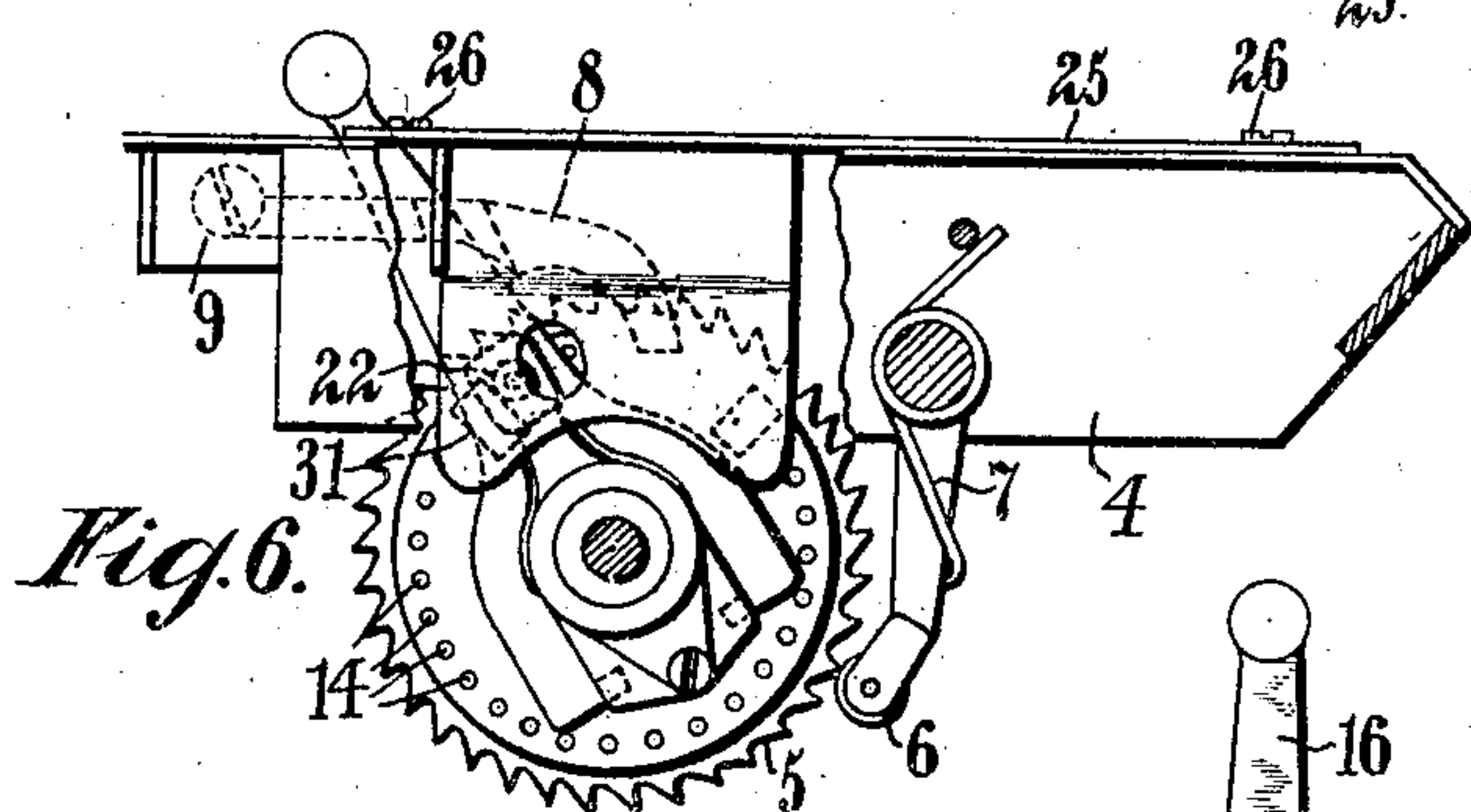
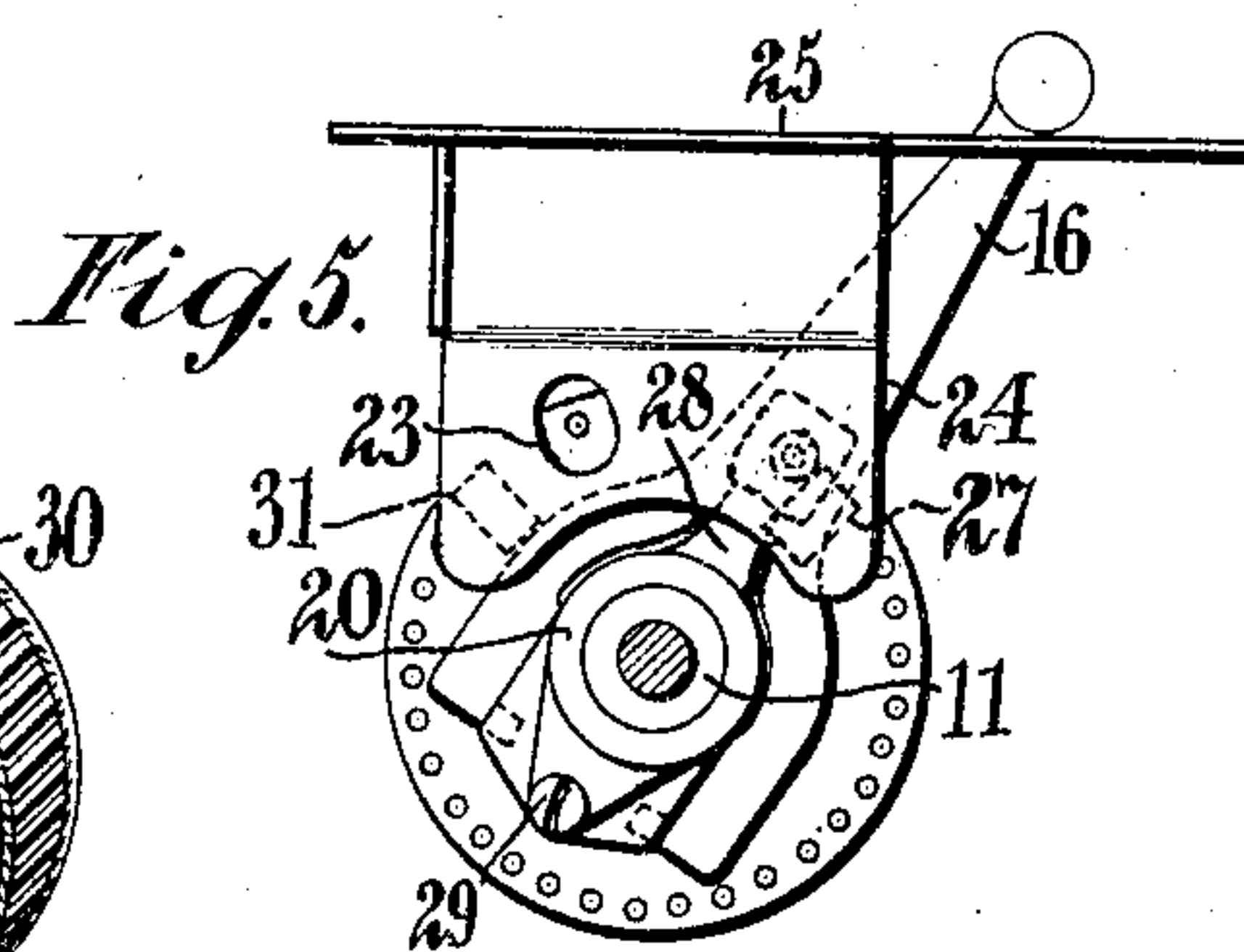
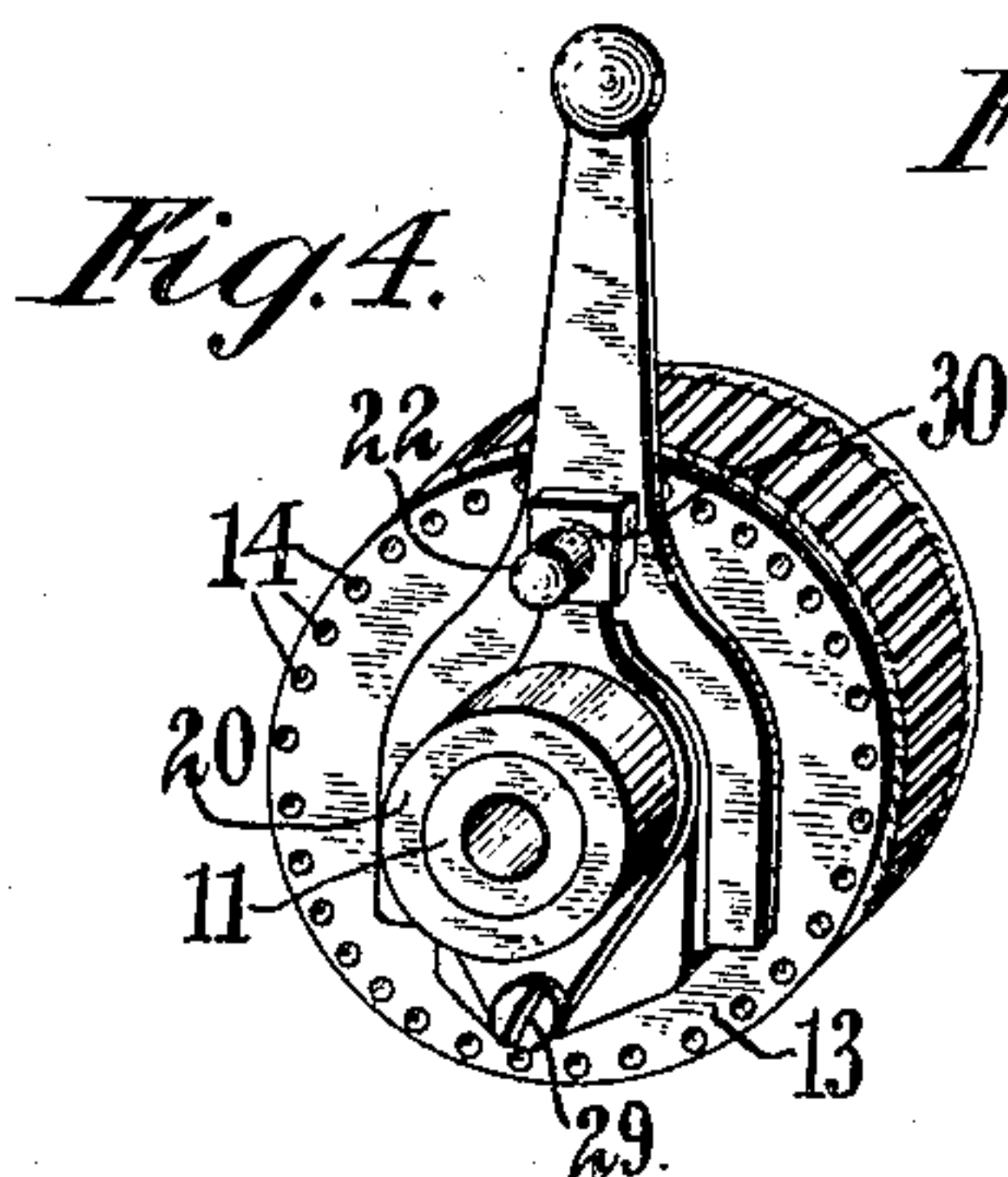
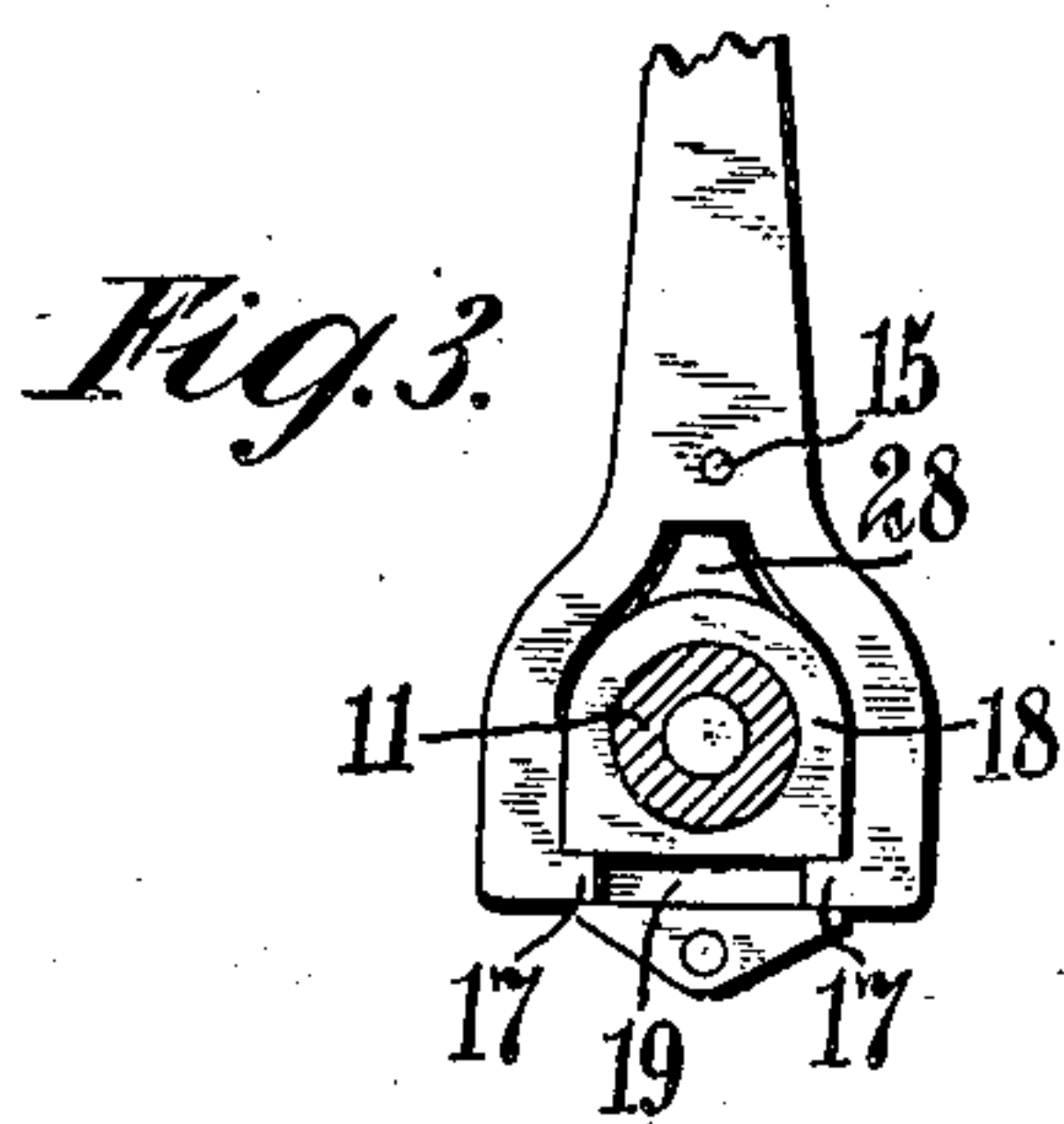
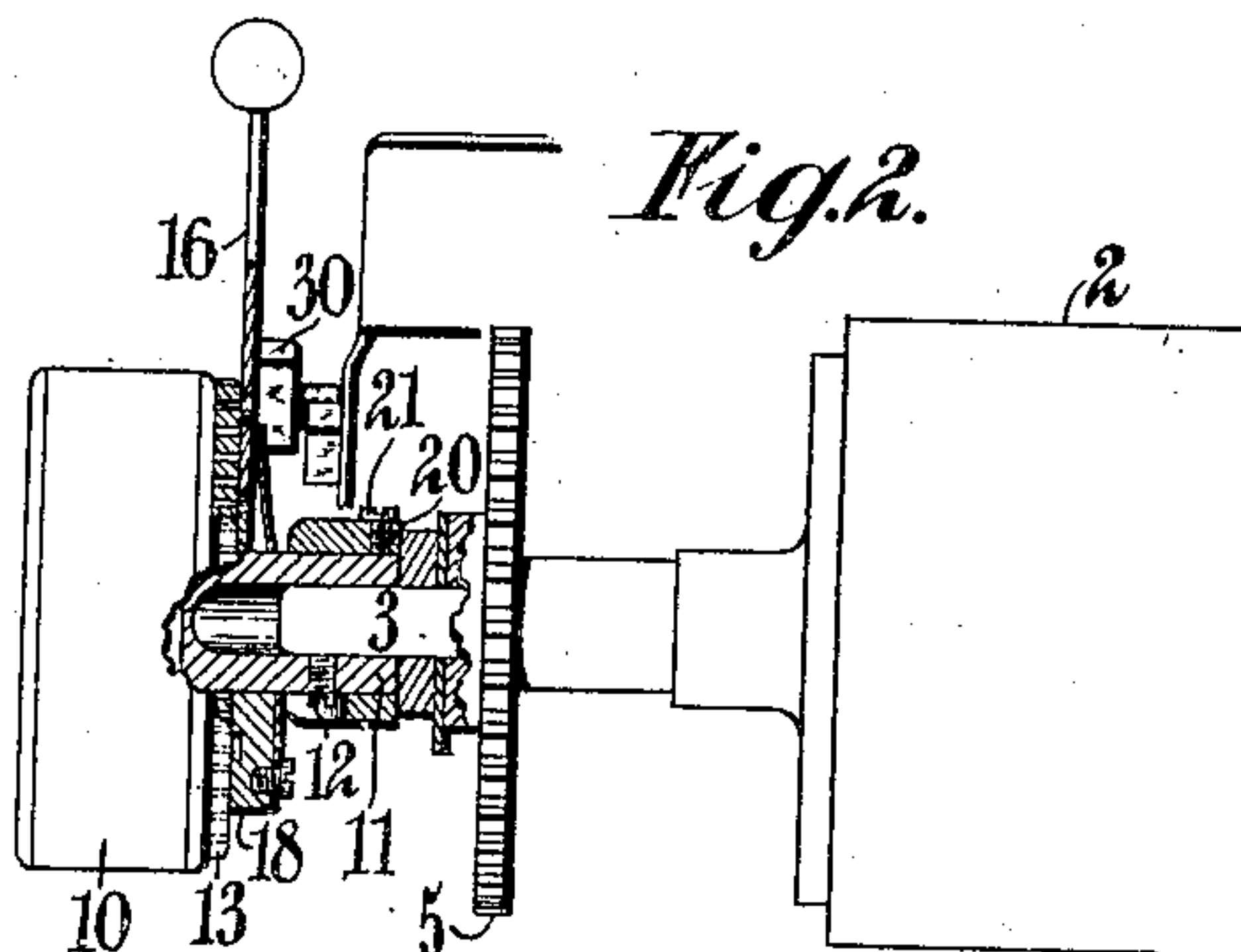
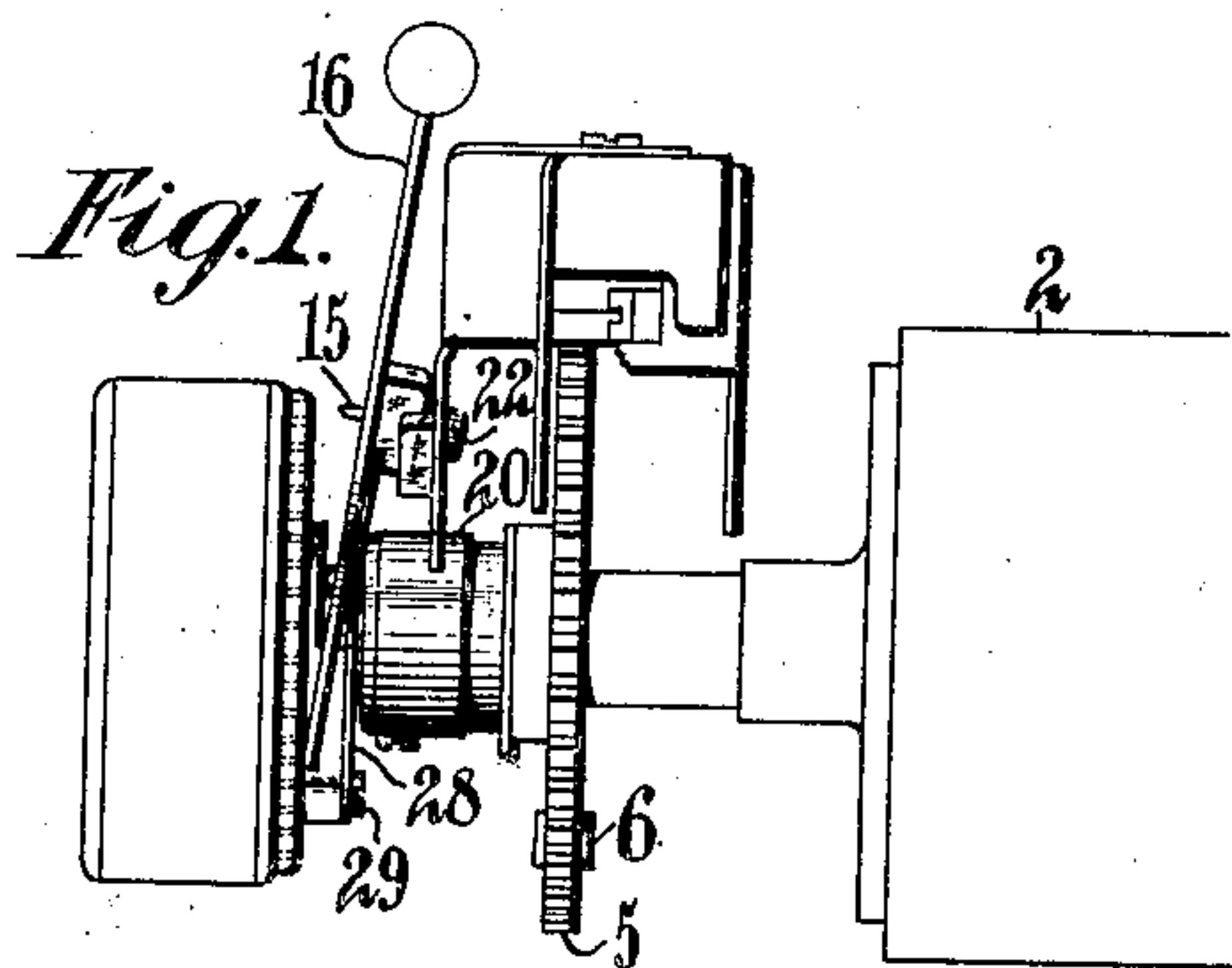


No. 897,248.

PATENTED AUG. 25, 1908.

W. E. BARNARD.
TYPE WRITING MACHINE.
APPLICATION FILED JULY 15, 1907.



Witnesses:
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UNITED STATES PATENT OFFICE.

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TYPE-WRITING MACHINE.

No. 897,248.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Application filed July 15, 1907. Serial No. 383,880.

To all whom it may concern:

Be it known that I, WALTER E. BARNARD, a citizen of the United States, residing in Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to the paper-controlling devices of typewriting machines, and especially to those in which the paper is fed around a cylindrical platen, and more particularly to those in which types strike upon the front side of the platen.

One of the main objects of my invention is to make it more convenient to make erasures or corrections in machines in which the types strike upon the front side of the platen. In such machines the line of writing on the paper is awkward to reach with an erasing implement, especially in machines in which the carriage frame lies in front of the platen. To overcome this objection, I contrive to give the platen, whenever desired, an advance movement of a quarter of a revolution or a little less to bring the line of writing to the top of the platen where said line is not only accessible, but also in convenient position for the use of the eraser. Upon making the erasure the platen is rotated back and mechanically arrested in its initial position, so that the writing may proceed. This movement of the platen, I effect by means of a lever or crank which is normally stationary during the rotation of the platen, but is connectible at any time to the platen to rotate the same forwardly until the crank and platen are arrested by a stop in such a position that the line of writing is at or near the top of the platen. Then the lever is used to turn the platen backwardly until it is restored to its initial position. The connection of the crank with the platen is maintained mechanically during both the advance and return movements of the crank. Upon reaching initial position, however, a spring disconnects the crank from the platen, and moves said crank into engagement with the detent. I also make use of the same crank to turn the platen backwardly from normal position through a fraction of an ordinary line-space, for convenience in writing exponents, accents, fractions, etc.; a stop serving to limit such backward movement of the lever from normal position, and said

spring action serving to disconnect the crank from the platen and reengage it with the detent.

In the accompanying drawings, Figure 1 is a front elevation of the left hand end of the platen and platen frame of an Underwood front strike typewriting machine showing my improvements applied thereto; the platen rotating-crank being shown in its normal positions of disuse. Fig. 2 is a similar view partly in longitudinal section, and showing the crank connected to the platen to rotate the latter. Fig. 3 is a face elevation of the crank, and illustrates the method of swiveling the same upon a collar which is loosely mounted upon a hub of a hand wheel. Fig. 4 is a perspective view of a crank and its connected parts. Fig. 5 is a sectional elevation looking towards the left at Fig. 1, but showing the crank as having been advanced to bring the line of writing to the top side of the platen. Fig. 6 is a view similar to Fig. 5, but showing the crank as having been retracted from normal position to permit the writing of exponents, etc. Fig. 7 is a view similar to Fig. 5, but showing the crank in normal position. Fig. 8 is an elevation of the crank. Fig. 9 is a detail of the collar upon which the crank is swiveled and of the spring which restores the crank. Fig. 10 is a view looking towards the right at Fig. 1 and showing the end of the platen frame, and also the platen and the type-bar.

Types 1 strike against the front side of a platen 2, which is journaled by means of an axle 3 in a platen frame of the usual construction and comprising ends, such as 4. Fixed upon the platen axle is a notched line-space wheel 5, with which coöperates a detent 6 pressed into the notches of the wheel by a spring 7. The platen is advanced line by line by the usual reciprocatory line-spacing mechanism comprising a pawl 8 mounted upon a slide 9 and operated by a lever.

A hand wheel 10 is secured by means of a hub 11 and screw 12 upon the end of the platen axle 3. Outside of the platen frame to the inner end of said hand wheel is secured a disk or wheel 13 having perforations, openings or notches 14 at line-space intervals, there being as many of said perforations as there are teeth in the line space wheel 5. A projecting pin or tooth 15 is adapted to enter any of said openings 14; said pin

being fixed upon the outer side of a crank 16 which is swiveled by means of prongs 17 upon a collar 18 which is mounted loosely upon the hub 11, so that the platen axle 5 may turn independently of the crank in the usual line-spacing operation. The prongs 17 are mounted loosely in a transverse recess 19 in said collar below the main opening, to permit the crank to have a limited swiveling action longitudinally of the platen from the Fig. 1 to the Fig. 2 position. A collar 20 is fixed by a screw 21 upon the inner end of the hub 11 to confine the loose collar 18 against the face of the wheel 13, thereby retaining the prongs 17 in the socket 19.

Upon the inner face of the crank is fixed a pin or stop 22 which normally projects through a perforation 23 formed in a vertical plate 24, which depends from the outer side of the platen frame, and is fixed thereon by a flange 25 and screws 26.

When it is desired to make a correction, the crank 16 is swung to the left from the Fig. 1 to the Fig. 2 position, thereby causing the pin 22 to enter and interlock with one of the holes 14 in the wheel 13 which is fixedly connected to the platen, and turns about the platen axis. This movement of the crank withdraws the projection or stop 22 from the perforation 23, so that the crank is permitted to rotate about the axis of the wheel 13. The crank is then pushed rearwardly to turn the platen forwardly, through a quarter of a revolution or a little less, until the projection 22 engages a stop 27 projecting outwardly from the plate 24, thereby arresting the crank together with the platen as soon as the line of writing is brought to the top side of the platen. The plate 24 serves as a guard to maintain the lever in the Fig. 2 position, that is, in interlocking engagement with the wheel 13. The erasure is then made, and the hand wheel 11 is turned to rotate the platen backwardly until the projection 22 comes opposite the opening 23 in the guard plate, whereby a spring 28 swings the crank from the Fig. 2 to the Fig. 1 position withdrawing the projection 22 from the wheel 13 and snapping the projection 22 into the opening 23, the latter serving as a detent to hold the crank against revolution about the platen axis. The spring 28 is secured by a screw 29 to the collar 18, and its upper end engages with a notch formed in the lower edge of a block 30 fixed upon the face of the lever and serving as a base for the pin 22. Instead of using the hand wheel 10 to restore the platen to normal position, the crank 16 may be employed, the operator gently pressing the same to the right as he rotates the platen backwardly, whereby the pressure of the operator's finger insures the pin 22 entering the notch 23, so that the forward edge of the latter may serve as a stop, to limit the re-

turn movement of the crank and connected platen. I also provide upon the guard plate 24 a front-stop 31 close to the opening 23, and usable when writing exponents, fractions, etc. In this operation, the crank 70 is swung to the left as before to engage it with the wheel 13, and then the crank is pulled forwardly until the pin or stop 22 engages the stop 31 as seen at Fig. 6, thus retracting the platen to a fraction of a line-space and enabling figures or letters to be written a little above the line of writing. The platen may be returned to normal position by means of the crank 16 or by means of the spring 7 acting through the detent 6 80 to return the line space wheel 5 to normal position; and the spring 28 restores the crank to the normal position of Fig. 1. The stop 31 may however, be omitted in some cases.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. In a typewriting machine, the combination with a revoluble platen, a platen frame, and a reciprocatory line-spacing mechanism, of a wheel connected to the platen and having notches or openings at line-space intervals, a crank mounted for revolution about the axis of said wheel, said crank being also movable in a direction longitudinal of said wheel axis to engage said notches or openings, means mechanically maintaining such engagement during the rotation of the platen to and fro by said crank through an arc greater than the movement of the platen effectible by said line-spacing mechanism, and stops for limiting the backward and forward throws of said crank and platen.

2. In a typewriting machine, the combination with a revoluble platen, a platen frame, and a reciprocatory line-spacing mechanism, of a wheel connected to the platen and having notches or openings at line-space intervals, a crank mounted for revolution about the axis of said wheel but normally disconnected from the wheel, a detent normally engaging said crank, said crank being also movable in a direction longitudinal of said wheel axis both to become released from said detent and to engage said notches or openings, means mechanically maintaining such engagement during the rotation of the platen to and fro by said crank through an arc greater than the movement of the platen effectible by said line-spacing mechanism, stops for limiting the backward and forward throws of said crank and platen, and a spring to disengage the crank from said notched wheel.

3. In a typewriting machine, the combination with a revoluble platen, a platen frame and a reciprocatory line-spacing mechanism, of a crank mounted for revolution but nor-

5 mally disconnected from the platen, said crank being also movable in a direction longitudinal of the axis of such revolution, means connecting said crank to said platen at said movement of the crank, and means mechanically maintaining such connection during the rotation of the platen to and fro by said crank through an arc greatly in excess of the movement of the platen effectible by said line-spacing mechanism.

10 4. In a typewriting machine, the combination with a revoluble platen and a platen frame, of a crank mounted for revolution but normally disconnected from the platen, said crank being also movable in a direction longitudinal of the axis of such revolution, means connecting said crank to said platen at said movement of the crank, means mechanically maintaining such connection during the rotation of the platen to and fro by said crank, and a spring to effect disconnection of the crank from the platen upon their return to starting position.

20 5. In a typewriting machine, the combination with a revoluble platen, and a platen frame, of a wheel connected to the platen and having notches or openings at line-space intervals, a crank mounted for revolution about the wheel axis, a detent to hold said crank stationary during the usual rotation of the platen, said crank being mounted for a movement longitudinally of the platen to become released from said detent, and having means to engage said notched wheel at said releasing movement, a stop for limiting the forward rotation of the platen effected by said crank as soon as the line of writing is brought from the printing point to the top of the platen, and a spring to effect disconnection of the crank from the platen upon their return to starting position.

35 6. In a typewriting machine, the combination with a revoluble platen and a platen frame, of a wheel connected to the platen and having openings or notches at line-space intervals, a guard plate upon the platen frame parallel with said wheel, a crank revoluble about said wheel axis and also swiveled to vibrate longitudinally of said wheel axis, a projection upon said crank, a spring normally pressing said projection into an opening in said guard plate, a tooth upon said crank to engage said notched wheel when the crank is withdrawn from the opening in said guard plate, and a stop for limiting the throw of the platen effected by said crank; said guard plate effective to maintain the engagement of said crank with said wheel during the excursion of the crank from and back to its starting point.

60 7. In a typewriting machine, the combination with a revoluble platen and a platen frame, of a wheel connected to the platen and having openings or notches at line-space intervals, a guard plate upon the platen frame

parallel with said wheel, a crank revoluble about said wheel axis and also swiveled to vibrate longitudinally of said wheel axis, a projection upon said crank, a spring normally pressing said projection into an opening in said guard plate, a tooth upon said crank to engage said notched wheel when the crank is withdrawn from the opening in said guard plate, and a stop for limiting the throw of the platen effected by said crank; said guard plate effective to maintain the engagement of said crank with said wheel during the excursion of the crank from and back to its starting point; said crank being mounted between said wheel and said guard plate, and the latter having a stop to limit the throw of the crank.

8. In a typewriting machine, the combination with a revoluble platen, an axle therefor, a finger wheel fixed thereto, and a platen frame, of a wheel fixed to the finger wheel outside of the platen frame and having openings or notches at line space intervals, a guard plate being provided upon the platen frame parallel with said wheel, a collar loose upon the platen axle, a crank between said plate and wheel and swiveled upon said collar to vibrate longitudinally of the platen axis, a projection upon one side of said crank, a spring normally pressing said projection into an opening in said guard plate, a tooth upon the opposite side of said crank to engage said notched wheel when the lever is withdrawn from the opening in said guard plate, and a stop for limiting the throw of the platen effected by said crank; said guard plate effective to maintain the engagement of said crank with said wheel during the excursion of the crank away from and back to its starting point.

9. In a typewriting machine, the combination with a revoluble platen and a platen frame, of a wheel connected to the platen and provided with notches or openings at line-space intervals, a collar loosely mounted on the axis of said wheel, a crank swiveled upon said collar to move along said axis, a detent, a spring normally holding said crank in engagement with said detent, said crank being movable out of engagement with said detent and into engagement with said wheel, means to maintain the engagement of the crank with the wheel, and a stop to limit the throw of the platen effected by said crank.

10. In a typewriting machine, the combination with a revoluble platen, a platen frame, and a reciprocatory line-space mechanism including a toothed line-space wheel and a detent therefor, of an index wheel connected to said platen, an index normally disconnected from said index wheel, but movable into engagement therewith, to rotate with the platen from its initial position through an arc greater than the movement of the platen effectible by said line-space

mechanism, a stop to arrest such movement of the index and platen, means to maintain the engagement of the index and index wheel during the back and forth rotations of the platen, a stop to arrest the index and platen upon return to initial position, and a stop to limit to less than a single line space the rotation of said index together with said platen in the opposite direction from the starting point.

11. In a typewriting machine, the combination with a revoluble platen, a platen frame, and a reciprocatory line-space mechanism including a toothed line-space wheel and a detent therefor, of an index wheel connected to said platen, an index normally disconnected from said index wheel, but movable into engagement therewith, to rotate with the platen from its initial position through an arc greater than the movement of the platen effectible by said line-space mechanism, a stop to arrest such movement of the index and platen, means to maintain the engagement of the index and index wheel during the back and forth rotations of the platen, a stop to arrest the index and platen upon return to initial position, a stop to limit to less than a single line-space the rotation of said index together with said platen in the opposite direction from the starting point, and a spring to disconnect the index from the index wheel upon the completion of the return movement of the platen in either direction to starting position.

12. In a typewriting machine, the combination with a revoluble platen, a platen frame, and a line-space mechanism including a line-space wheel and a detent therefor, of a wheel having openings at line-space intervals and connected to the platen, a crank mounted for revolution about the platen axis, means for connecting the crank to the last mentioned wheel to rotate the platen either forwardly from initial position to bring the line of writing from the printing point to the upper side of the platen, or backwardly for a distance less than a line space from initial position, stops to arrest the forward and return movements of the platen and crank, and a stop to limit the movement of the platen backward from initial position to less than a line space.

13. In a typewriting machine, the combination with a revoluble platen, a platen frame, and a line-space mechanism including a line-space wheel and a detent therefor, of a wheel having openings at line-space intervals and connected to the platen, a crank mounted for revolution about the platen axis, means for connecting the crank to the last mentioned wheel to rotate the platen either forwardly from initial position to bring the line of writing from the printing point to the upper side of the platen, or backwardly for a distance less than a line-space from initial

position, stops to arrest the forward and return movements of the platen and crank, a stop to limit the movement of the platen backward from initial position to less than a line space, and a spring to disconnect the crank from the platen upon the return of the platen in either direction to starting position.

14. In a typewriting machine, the combination with a revoluble platen, a platen frame, and a line-space mechanism including a line-space wheel and a detent therefor, of a wheel having openings at line-space intervals and connected to the platen, a crank mounted for revolution about the platen axis, means for connecting the crank to the last mentioned wheel to rotate the platen forwardly from initial position to bring the line of writing from the printing point to the upper side of the platen, stops to arrest the movements of the platen and crank, one stop limiting the movement to less than a line space, a spring to disconnect the crank from the platen upon the return of the platen to starting position, and a detent normally holding the crank against movement.

15. In a typewriting machine, the combination with a revoluble platen, a platen frame, and a reciprocatory line-spacing mechanism, of a crank mounted for revolution about the platen axis, a detent normally holding said crank stationary during the rotation of the platen, said crank being rotatable either forwardly or backwardly from normal position, a spring normally holding said crank in engagement with said detent, said crank being mounted for a releasing movement from said detent, a wheel connected to the platen and having notches or openings at line-space intervals, said notches engageable by said crank at its releasing movement, and said crank capable of turning said platen through an arc much greater than the movement of the platen effectible by said line-spacing mechanism, a stop to limit the rotation of the connected crank and platen from normal position through said arc, and a stop to limit the throw of the crank and platen in the opposite direction from normal position.

16. In a typewriting machine, the combination with a revoluble platen, a platen frame, and a reciprocatory line-spacing mechanism, of a wheel connected to the platen and having notches or openings at line-space intervals, a crank mounted for revolution about the axis of said wheel but normally disconnected from the wheel, a detent normally engaging said crank, said crank being also movable in a direction longitudinal of said wheel axis both to become released from said detent and to engage said notches or openings, means mechanically maintaining such engagement during the rotation of the platen to and fro by said crank through an arc greater than the movement

of the platen effectible by said line-spacing mechanism, a stop for limiting the throw of said crank through said arc, and a stop for limiting the throw of the crank and platen to less than a line-space from normal position.

17. In a typewriting machine, the combination with a revoluble platen and a platen frame, of a wheel connected to the platen and having openings or notches at line-space intervals, a guard plate upon the platen frame parallel with said wheel, a crank revoluble about said wheel axis and also swiveled to vibrate longitudinally of said wheel axis, a projection upon said crank, a spring normally pressing said projection into an opening in said guard plate, a tooth upon said crank to engage said notched wheel when the crank is withdrawn from the opening in said guard plate, a stop for limiting the throw of the platen effected by said crank; said guard plate effective to maintain the engagement of said crank with said wheel during the excursion of the crank from and back to its starting point; and a stop to limit the throw of the crank and platen to less than a line space.

18. In a typewriting machine, the combination with a revoluble platen, an axle therefor, a finger wheel fixed thereto, and a platen frame, of a wheel fixed to the finger wheel outside of the platen frame and having openings or notches at line space intervals, a guard plate being provided upon the platen frame parallel with said wheel, a crank between said plate and wheel and swiveled to vibrate longitudinally of the

platen axis, a detent normally holding said crank, a spring normally pressing said crank away from said notched wheel, means upon said crank to engage said notched wheel when the lever is withdrawn from the detent, and a stop for limiting the throw of the platen effected by said crank; said guard plate effective to maintain the engagement of said crank with said wheel during the excursion of the crank away from and back to its starting point.

19. In a typewriting machine, the combination with a revoluble platen, an axle therefor, and a platen frame, of a wheel upon the platen axle and connected to the platen and having notches or openings at line-space intervals, a manually operable member rotatable about the platen axle, a detent, a spring normally holding said manually operable member in engagement with said detent, said manually operable member being movable along the platen axle to become disengaged from said detent and engaged with said wheel, to rotate the latter and the platen, means to maintain the engagement of the manually operable member with the toothed wheel, and stops to limit the throws of the platen from normal position effected by said manually operable member, one of said stops set at less than a line-space and the other set at several line-spaces from the normal position of the crank.

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Witnesses:

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