

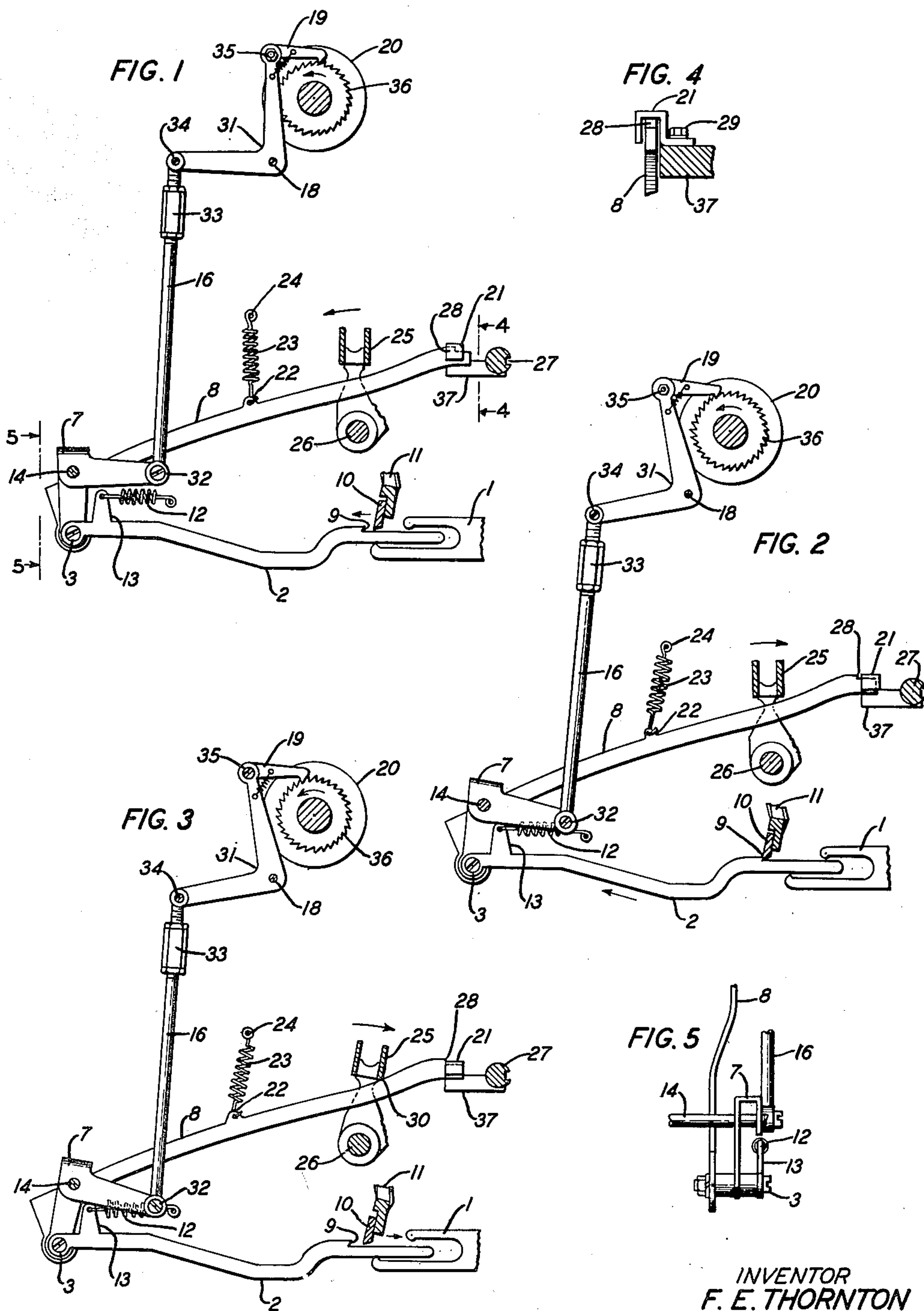
June 29, 1937.

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2,085,175

TELETYPEWRITER

Filed March 5, 1936



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2,085,175

TELETYPEWRITER

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Application March 5, 1936, Serial No. 67,380

18 Claims. (Cl. 178—25)

This invention relates to teletypewriters and, more particularly, to means for suppressing all but the first of several consecutive line feed operations of a teletypewriter.

5 The invention is especially useful when applied to page teletypewriters monitoring on circuits over which a series of line feed signals are frequently sent, such as when the subscribers are using order forms or when the subscribers are
10 sending press dispatches which usually have a series of line spaces between the different items. Although this is the preferred use of the invention, it is to be understood that the invention is not limited to monitoring teletypewriters, but
15 may be applied to teletypewriters in general. Accordingly, the invention will be described as applied to a teletypewriter similar to the teletypewriter shown and described in Patent 1,904,164 granted April 18, 1933 to S. Morton et al. The
20 disclosure of this Morton et al patent is incorporated herein by reference as a part of this specification.

The operation of the invention is based upon the fact that, during line feed operations, the
25 printing bail of the teletypewriter does not move its full length of travel. Accordingly, when the teletypewriter performs a line feed operation in response to the reception by the teletypewriter of the first of a series of successive line feed
30 signals, a latch locks the line feed bell crank in its operated position. Then, when the remainder of the series of successive line feed signals are received by the teletypewriter, they are of no effect because the line feed push bar of the tele-
35 typewriter is held in its operated position which is clear of the function bail. After all the consecutive line feed signals have been received and a "space" or any character signal is received, the printing bail moves its full length of travel and
40 disengages the latch, thereby restoring the line feed push bar to its normal position.

The preferred embodiment of the invention will now be described in detail with reference to the drawing in which:

45 Fig. 1 is a side view of part of a teletypewriter, of the type shown in the Morton et al patent, as viewed from the left side of the teletypewriter and showing the line feed suppressing mechanism in its normal unoperated position;

50 Fig. 2 is a view similar to that of Fig. 1 showing the line feed suppressing mechanism locked in its operated position;

55 Fig. 3 shows the line feed suppressing mechanism being released from the locked position of Fig. 2;

Fig. 4 is a fragmentary sectional view taken along line 4—4 of Fig. 1 and illustrating details of the catch which holds the line feed mechanism in the locked position shown in Fig. 2; and

Fig. 5 is a fragmentary side view taken along 5 the line 5—5 of Fig. 1 representing the relation of the locking bar to the line feed bell crank and line feed push bar.

A general description of the various parts of the teletypewriter, described in detail in the Mor- 10 ton et al patent, shown in the drawing will now be given. The line feed function lever 1, of which a fragmentary view is shown, is one of the so-called "function levers." In addition to the print- 15 ing of characters it is necessary to provide for various functions such as line feed, platen shift, platen unshift, and automatic signaling. To perform these various functions special code, or function, levers are provided all of which are piv- 20 otally mounted on a function lever shaft (not shown) suitably mounted in the teletypewriter.

A fragmentary sectional view of function bail 11 is shown. This bail is mounted on bail shaft 26 but the mounting details are not shown in the drawing for the sake of simplification as they 25 may be found in the Morton et al patent. The purpose of function bail 11 is to impart to the bail blade 10, of which a cross-sectional view is shown, the necessary power to actuate the line feed push bar 2 and the other function push bars (not 30 shown). Function bail blade 10 is arranged to span all of the function push bars and to cooperate therewith as described in the Morton et al patent. Line feed push bar 2 is rotatably joined by the pin 3 to the lower arm of the line feed 35 bell crank 7. Push bar 2 is provided with a projection, or arm, 13. Attached to the top of arm 13 is one end of a spring 12 the other end of which is mounted on the frame of the teletypewriter. Spring 12 tends to pull line feed push bar 2 to the 40 right.

Line feed bell crank 7, which is pivotally mounted on pin 14, is also actuated by spring 12 through the pin 3 and tends to revolve around the pivot 14 in a counterclockwise direction. The right 45 end of line feed bell crank 7 is connected rotatably by a pin 32 to the line feed vertical link 16, the effective length of which may be adjusted by means of the turnbuckle 33. The line feed vertical link 16 is pivotally joined at its upper end by 50 the pin 34 to the line feed bell crank 31 which is pivotally mounted at 18 to the frame of the printer. Attached to the top arm of bell crank 31 by pivot 35 is the line feed pawl 19 which is adapted to cooperate with the line feed ratchet 55

36 fixedly attached to the platen 20. Rotatably mounted on bail shaft 26 is the printing ball 25. Bail shaft 26 is suitably journaled in the side frames of the printer. The front carriage track 27 is appropriately secured to the detail 37, of which a sectional view on the line 4-4 is shown in Fig. 4. Detail 37 is attached to the frame of the printer by the screw 29.

A description of the various parts which, when added to, and cooperating with, the teletypewriter of the Morton et al patent, constitute this invention, will now be given. Pivotaly connected by the pin 3 to the line feed bell crank 7 is the line feed locking bar 8 which is pulled upward by a spring 23 one end of which is connected to the bar 8 at point 22 and the other end to a pin 24 secured to the frame of the printer. The upper and right end of bar 8 is horizontally surfaced and is provided with a shoulder 28. Due to the upward pull of spring 23, this end of bar 8 normally rests against the inside surface of the inverted U member 21 which is secured to the detail 37 and the frame of the printer by the screw 29. A fragmentary view of bar 8 in this position is shown in Fig. 4. When bar 8 is moved to the left in Fig. 1, as will be hereinafter described, its shoulder 28 latches against the left edge of member 21, as shown in Fig. 2, thereby locking bar 8, bell crank 7, link 16, the line feed lever 31, and pawl 19 in their operated positions.

In Fig. 1, let it be assumed that the preassigned combination of significant current variations assigned to operate the line feed mechanism has been received by the teletypewriter and that the line feed function lever 1 has been selected in response to this code combination. Lever 1 now revolves in a clockwise direction around the function lever shaft (not shown) of the teletypewriter and engages the lower surface of push bar 2, and causes bar 2 to rotate counterclockwise around pin 3 upon which it is mounted together with the lower arm of the bell crank 7 and bar 8. This counterclockwise rotation of push bar 2 causes the notch 9 of push bar 2 to be placed in the path of blade 10 of the function bail 11 as shown in Fig. 2.

After selection of push bar 2 has been made in the manner described in the Morton et al patent, the function bail 11 causes blade 10 to engage notch 9 and move push bar 2 to the left against the tension of spring 12. Due to the pivotal connection of bell crank lever 7 by means of pin 3 with the push bar 2, line feed bell crank 7 is now forced in a clockwise direction around the shaft 14, against the tension of spring 12. This causes the vertical line feed link 16 to be pulled downward thereby imparting to the line feed lever 31 a counterclockwise rotation around pin 18. As a result, the line feed pawl 19 is pulled to the left to effect the counterclockwise rotation of ratchet 36 and platen 20. This causes the paper in the teletypewriter to be fed forward one line space as described in the Morton et al patent.

The clockwise movement of bell crank lever 7 forces the line feed locking bar 8 to move to the left due to its pivotal connection with bell crank lever 7 by means of pin 3 as shown in Fig. 5. The right end of bar 8 thus slides to the left under the inverted U-shaped member 21 and is pulled upward by spring 23. After bar 8 has moved a short distance to the left, its shoulder 28 latches with the left outer surface of member 21, as shown in Fig. 2, thereby holding bar 8, bell crank 7, link 16, lever 31, and pawl 19 in

their operated positions. At the same time, the printing ball 25 moves to the right in only a short arc which is not sufficient for ball 25 to touch bar 8. This is because ball 25 is designed, as described in the Morton et al patent, to move in a shorter arc in response to a line feed signal than it moves in response to an ordinary character signal. This restricted movement of ball 25 is necessary in order to prevent printing and movement of the carriage at this time.

Consequently, when the function bail 11 moves its blade 10 to the left in response to the reception by the teletypewriter of the second in the series of successive line feed signals, it cannot again push the line feed push bar 2 to the left because bar 2 is already held to the left by means of the latching engagement of shoulder 28 with member 21. As a result, the line feed pawl 19 is not operated by this second line feed signal. Subsequent successive line feed signals are likewise ineffective to cause the operation of line feed pawl 19 with the result that platen 20 is not rotated further.

However, when a "space" or character signal is received, ball 25 moves through its regular length of travel which is sufficient for ball 25 to strike against bar 8 at the point 30 as is shown in Fig. 3. When ball 25 hits against bar 8 at point 30, it does so with force sufficient to drive bar 8 downward against the tension of the spring 23. This causes shoulder 28 to disengage itself from its latching engagement with the left edge of the stationary member 21.

After thus being unlatched, bar 8 is moved to the right by the counterclockwise rotation of the bell crank 7 around the shaft 14 by spring 12. This counterclockwise movement of bell crank 7 also gives the line feed vertical link 16 a vertical upward motion which imparts a clockwise rotation to line feed lever 31. This causes the line feed pawl 19 to move to the right and assume its normal position as shown in the drawing. At the same time, the line feed push bar 2 is also moved to the right by means of spring 12. All of the line feed mechanism is thus restored to the position shown in the drawing and the teletypewriter is ready to respond to the next code signal combination.

It is to be understood that the above embodiment of the invention has been shown and described to illustrate the features and principles of operation of the invention. Various changes may be made in this specific embodiment without departing from the scope of the invention which is to be limited only by the claims appended hereto.

What is claimed is:

1. In a telegraph printer, printing mechanism, line feed mechanism, operating means for operating the line feed mechanism in response to line feed signals received by the printer, and control means for rendering the operating means ineffective to operate the line feed mechanism, said control means including a latch.
2. A teletypewriter having in combination normally unoperated line feed mechanism, means for operating the line feed mechanism in response to line feed signals received by the teletypewriter, a normally unoperated latch adapted to lock the line feed mechanism in its operated position, and an instrumentality for operating the latch when the line feed mechanism is operated.
3. A teletypewriter having in combination normally unoperated line feed mechanism, means for operating the line feed mechanism in response to

line feed signals received by the teletypewriter, a normally unoperated latch adapted to lock the line feed mechanism in its operated position, operating means for operating the latch, and an instrumentality for restoring the latch to its normally unoperated position.

4. A teletypewriter having a platen, line feed mechanism, said line feed mechanism including a line feed pawl for rotating the platen one space at a time, said line feed pawl having a normally unoperated position and an operated position, a line feed function lever for effecting the movement of the line feed pawl from one position to the other, suppressing means for preventing rotation of the platen by the line feed pawl, said suppressing means comprising holding means for effecting the holding of the line feed pawl in its operated position, and operating means for operating the suppressing means.

5. A teletypewriter having a platen, line feed mechanism, said line feed mechanism including a line feed pawl for rotating the platen one line space at a time, said line feed pawl having a normally unoperated position and an operated position, a line feed function lever for effecting the movement of the line feed pawl from one position to the other, suppressing means for preventing rotation of the platen by the line feed pawl, and operating means for operating the suppressing means.

6. A teletypewriter having a platen, line feed mechanism, said line feed mechanism including a line feed pawl for rotating the platen one line space at a time, said line feed pawl having a normally unoperated position and an operated position, a line feed function lever for effecting the movement of the line feed pawl from one position to the other, suppressing means for preventing rotation of the platen by the line feed pawl, operating means for operating the suppressing means, and control means for discontinuing the operation of the suppressing means.

7. A teletypewriter having a platen, line feed mechanism, said line feed mechanism including a line feed pawl for rotating the platen one line space at a time, said line feed pawl having a normally unoperated position and an operated position, a line feed function lever for effecting the movement of the line feed pawl from one position to the other, a line feed locking bar for preventing rotation of the platen by the line feed pawl, operating means for operating the line feed locking bar, and locking means for latching the line feed locking bar in its operated position.

8. A teletypewriter having a platen, line feed mechanism, said line feed mechanism including a line feed pawl for rotating the platen one line space at a time, said line feed pawl having a normally unoperated position and an operated position, a line feed function lever for effecting the movement of the line feed pawl from one position to the other, a line feed locking bar for preventing rotation of the platen by the line feed pawl, operating means for operating the line feed locking bar, locking means for latching the line feed locking bar in its operated position, and control means for unlocking the line feed locking bar.

9. A teletypewriter having a platen, line feed mechanism, said line feed mechanism including a line feed pawl for rotating the platen one line space at a time, said line feed pawl having a normally unoperated position and an operated position, a line feed function lever for effecting the movement of the line feed pawl from one posi-

tion to the other, a line feed locking bar for preventing rotation of the platen by the line feed pawl, operating means for operating the line feed locking bar, locking means for latching the line feed locking bar in its operated position, control means for unlocking the line feed locking bar, said control means being responsive to certain preassigned teletypewriter signals for striking against the line feed locking bar whereby the line feed locking bar becomes unlatched.

10. A teletypewriter having a platen, a printing bail, line feed mechanism, said line feed mechanism including a line feed pawl for rotating the platen one line space at a time, said line feed pawl having a normally unoperated position and an operated position, a line feed function lever for effecting the movement of the line feed pawl from one position to the other, a line feed locking bar for preventing rotation of the platen by the line feed pawl, operating means for operating the line feed locking bar, locking means for latching the line feed locking bar in its operated position, and control means for unlocking the line feed locking bar, said control means including the printing bail, said printing bail being responsive to certain preassigned teletypewriter signals for striking against the line feed locking bar whereby the line feed locking bar becomes unlatched.

11. A teletypewriter having feeding means for feeding stationery through the teletypewriter, operating means for operating the feeding means, and control means for rendering the operating means ineffective to operate the feeding means, said control means including a locking bar.

12. A teletypewriter having feeding means for feeding stationery through the teletypewriter, operating means for operating the feeding means, control means for rendering the operating means ineffective to operate the feeding means, and suppressing means for preventing the operating means from operating the feeding means, said suppressing means including a U member.

13. A teletypewriter having feeding means for feeding stationery through the teletypewriter, said feeding means having an unoperated position and an operated position, operating means for moving the feeding means from one position to the other, and control means for locking the feeding means in one of its positions, said control means including a latch.

14. A teletypewriter having feeding means for feeding stationery through the teletypewriter, said feeding means having an unoperated position and an operated position, operating means for moving the feeding means from one position to the other, control means for locking the feeding means in one of its positions, and releasing means for unlocking the feeding means after it has been locked in one of its positions.

15. A teletypewriter having in combination line feed mechanism, operating means for operating the line feed mechanism in response to line feed signals received by the printer, and control means for preventing at least one of a series of successive line feed signals from effecting operation of the line feed mechanism by the operating means, said control means including a locking device.

16. A teletypewriter having in combination line feed mechanism having an unoperated position and an operated position, operating means for operating the line feed mechanism in response to line feed signals received by the printer, and control means for preventing certain line feed signals in a series of successive line feed signals

from effecting operation of the line feed mechanism by the operating means, said control means including an instrumentality for locking the line feed mechanism in one of its positions.

- 5 17. A teletypewriter having in combination line feed mechanism, operating means for operating the line feed mechanism in response to line feed signals received by the teletypewriter, control means for preventing all but the first of a series
10 of successive line feed signals from effecting operation of the line feed mechanism, said control means including a normally unactuated suppressing device for rendering the operating means ineffective to operate the line feed mechanism,
15 and actuating means for actuating the suppressing means.

18. A teletypewriter having in combination line

feed mechanism, operating means for operating the line feed mechanism in response to line feed signals received by the printer, and control means for preventing all but the first of a series of successive line feed signals from effecting operation
5 of the line feed mechanism, said control means including normally unoperated suppressing means for rendering the operating means ineffective to operate the line feed mechanism, said operating means being adapted to effect the operation of
10 the suppressing means in response to the first line feed signal received by the teletypewriter thereby preventing the remainder of the line feed signals in the series from effecting operation of the line feed mechanism by the operating means. 15

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