E. B. HESS.

PLATEN AND PRESSURE FEED MEANS.

APPLICATION FILED MAY 10, 1917.

1,270,292.

Patented June 25, 1918.

2 SHEETS—SHEET 1.

Fig: 1.

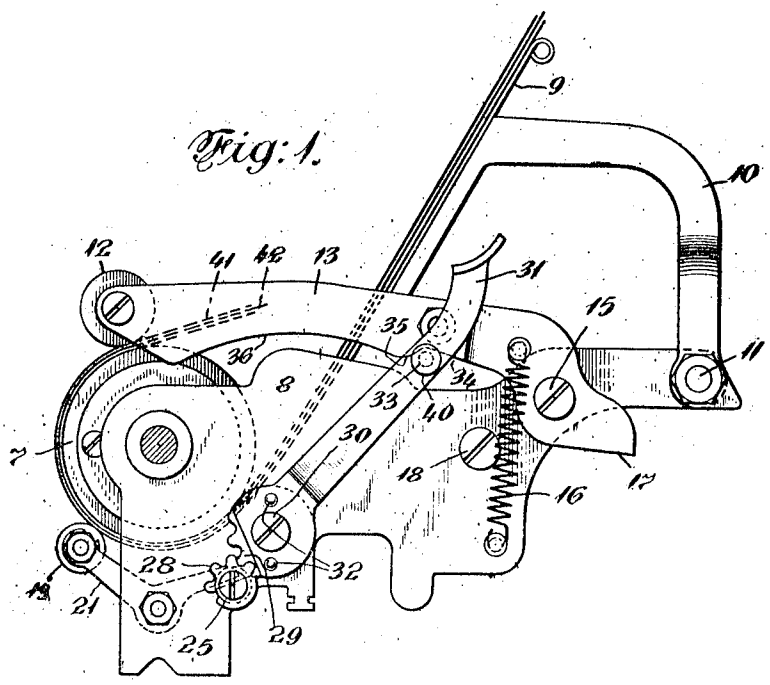
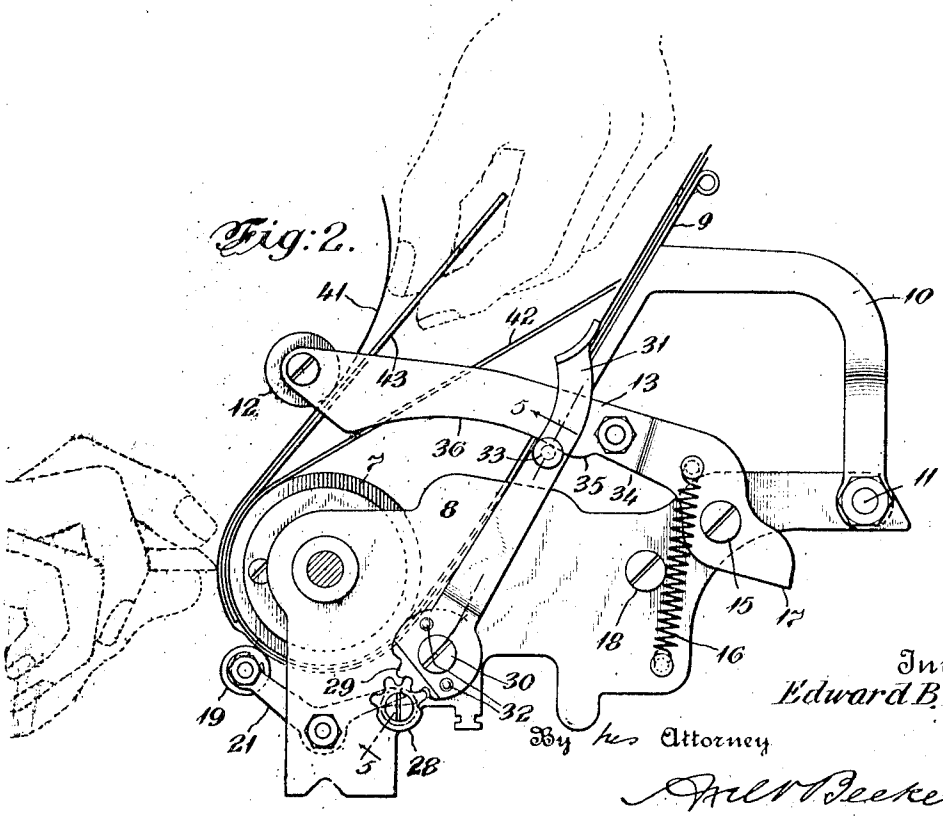


Fig: 2.



Inventor

Edward B. Hess

By his Attorney

Albert Becker

E. B. HESS.

PLATEN AND PRESSURE FEED MEANS.

APPLICATION FILED MAY 10, 1917.

1,270,292.

Patented June 25, 1918.

2 SHEETS—SHEET 2.

Fig: 3.

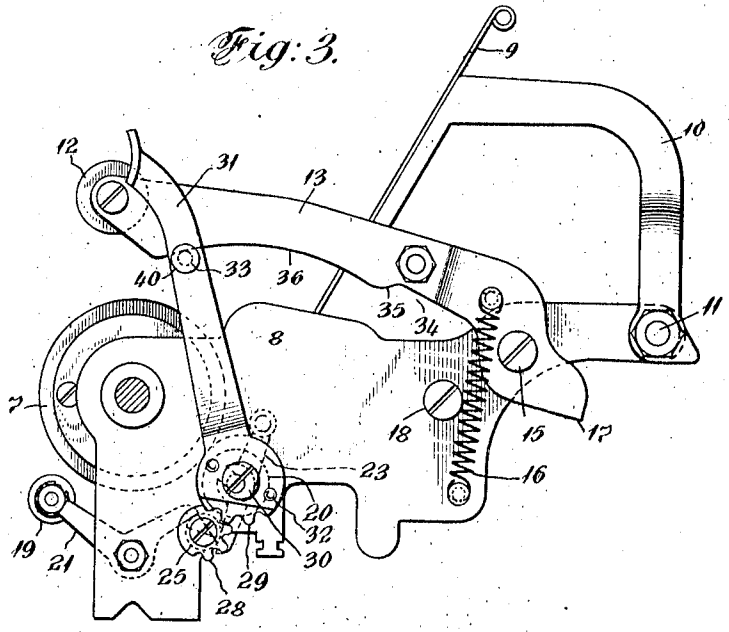
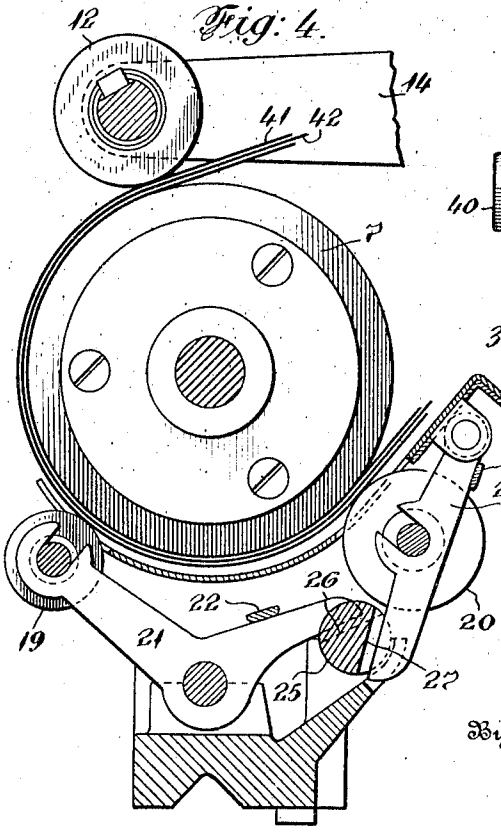
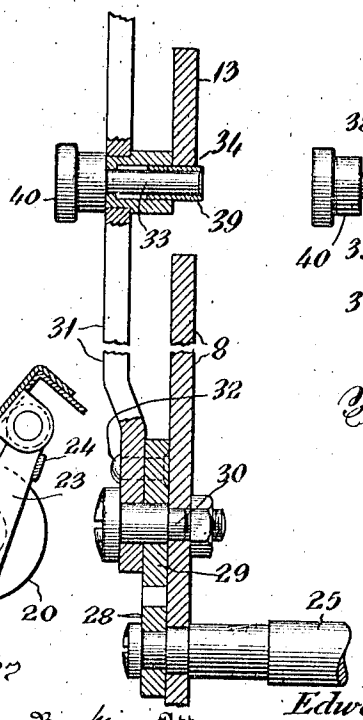


Fig: 5.

Fig: 4.





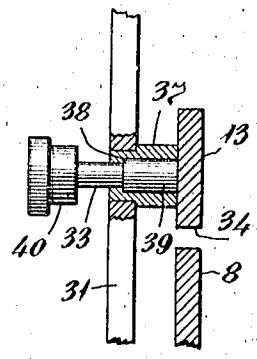


Fig: 6.

Inventor

Edward B. Hess

By his Attorney

Carl V. Becker

UNITED STATES PATENT OFFICE.

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

PLATEN AND PRESSURE FEED MEANS.

1,270,292. Specification of Letters Patent. Patented June 25, 1918.

Application filed May 10, 1917. Serial No. 167,641.

To all whom it may concern:

Be it known that I, EDWARD B. HESS, a citizen of the United States, and a resident of the borough of Brooklyn, in the city of New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Platen and Pressure Feed Means, of which the following is a specification.

The present invention relates generally to typewriting or other machines of a similar character, and has more particularly reference to an improvement in the construction and arrangement of the feed and guide pressure rolls associated with the platen.

In writing machines of the front-strike type, to which the present invention is more particularly applicable, it is customary to have lower pressure feed means usually consisting of rear and front feed rolls below the line of print of the platen, and also to have an overhead pressure roll above the print line. These several rolls are normally urged into contact with the platen, the lower rolls being spring-pressed and having suitable releasing means; and the overhead pressure roll being mounted on arms which have a pivotal support back of the paper table, whereby said overhead roll may be normally swung up out of the way into an idle position above the paper table. A spring is associated with this overhead pressure roll for urging it into either position, once the pivotal center is passed.

In the Hess Patent No. 950,326 is shown the general arrangement just described, and in the Hess Patent No. 1,100,301 is shown more particularly the releasing means for the lower pressure rolls.

In the prior art, as exemplified by the two patents mentioned above, it has been customary to have the control for overhead pressure roll and the control for the lower pressure rolls entirely separate and to move or release them necessitated distinct operations. This has been found disadvantageous in instances where it is required to release all of the rollers. So also, when the overhead pressure roll is lifted manually, it is, at present, necessary to elevate it to a point clear above the paper table where it then ceases to guide the paper and occupies an idle position.

The main object of the invention is to obviate these disadvantages and to obtain a more comprehensive control of the pressure rolls; and, further, to permit the release of the overhead pressure roll while maintaining it in a paper guiding position for certain purposes.

In carrying out the above objects, one feature of the invention resides in having an actuating member which controls both the lower and the overhead rolls, and in providing means whereby, when required, the releasing means for the lower rolls may be operated by the actuating member independently of the release of the overhead roll and vice versa.

The invention further consists in providing means whereby the overhead pressure roll may be lifted or elvated into a sustained paper guiding position out of contact with the platen, the parts being so arranged that it may be carried manually into the still higher idle position above the paper table.

In the embodiment in which the invention is herein clothed, the rock lever which operates the releasing means for the lower pressure rolls is provided with means for engaging the arms of the overhead pressure roll to lift said roll, during the initial movement of the rock lever, out of contact with the platen, and to sustain it in a paper guiding position during the remainder of its movement. During the subsequent movement of the rock lever, the releasing means for the lower pressure rolls are then operated, the overhead pressure roll remaining stationary in its sustained paper guiding position out of contact with the platen.

The result is that, the movement of the rock lever first lifts the overhead pressure roll into a paper guiding position, the parts being so arranged that the said roll may be moved manually still higher into its idle position, and then, if desired, sequentially releases the lower pressure rolls. In consequence, a partial movement of the rock lever elevates the upper roll away from the platen into a paper guiding position, while the lower rolls hold the paper firmly. With the parts in this position a card may be inserted between manifold sheets and an erasure may be made on the first sheet without making an impression on the remaining sheets, and this may be done without moving the sheet from the printing line on the

platen. In addition, should it be desired to print on a card of relatively heavy stock, it is often advantageous to guide the stock above the printing line without necessarily confining it closely to the curve of the platen. In such cases the partial elevation of the overhead pressure roll permits this to be done. Again should it be desired to release the lower pressure rolls, without releasing the overhead pressure roll, means are provided for disconnecting the rock lever from the arms of the overhead pressure roll so that the lower pressure rolls only are released. Finally, when it is desired to release both overhead and lower pressure rolls this may be done by carrying the rock lever through its full movement.

In the specific form of the invention herein disclosed, one of the arms of the overhead pressure roll is provided with a cam surface having an active portion and an idle portion, the latter preferably being defined by an arc drawn from the center of the rocking movement of the rock lever.

In the accompanying drawings the invention is disclosed in a concrete and preferred form, and in these drawings:

Figure 1 is a side elevation of the platen and pressure rolls, together with associated elements, the platen shaft being in section, and showing the parts in the position which they normally occupy.

Fig. 2 is a view similar to Fig. 1, showing the overhead pressure roll raised into a sustained paper guiding position, the hands of the operator being also shown, and a backing being inserted between manifold sheets while an erasure is being made.

Fig. 3 is a view similar to Fig. 1 showing all of the rolls released.

Fig. 4 is a vertical sectional view just inside the end frame of the carriage with the near arm of the overhead pressure roll and with the controlling means removed, the parts being in the same position as in Fig. 1.

Fig. 5 is a sectional detail view on the line 5—5 of Fig. 2.

Fig. 6 is a fragmentary view of a portion of the parts shown in Fig. 5 but with the pin on the rock lever withdrawn to prevent movement of the overhead pressure roll.

7 indicates the platen of any suitable construction and mounted in the customary manner in the end frames 8 of the carriage. 9 is the paper table extending upwardly from the rear of the platen, and mounted to tilt by means of arms 10 swung from the center 11 remote from the platen. The overhead pressure roll 12 engages the platen at a point above the line of print and is here shown as being carried by two arms 13 and 14 which have their pivotal support 15 in rear of the paper table. Normally the overhead pressure roll rests against the platen, as shown in Fig. 1, in front of the paper table, but it may be swung manually up to an idle position above the paper table in a manner well understood in the art. The spring 16 connects the arm 13 with the end frame 8 of the carriage and is so related to the parts that it will urge the roll into either its active or idle position, once the arms pass the pivotal center 15. A projection 17 by its engagement with the stop 18 limits the movement of the roll in a rearward direction.

The lower pressure feed means in the present instance take the following form: 19 indicates the lower front pressure roll and 20 the lower rear pressure roll, both below the printing line of the platen. The roll 19 is carried by the pivotal lever 21 and is normally urged into contact with the platen by means of the spring 22. The roll 20 is carried by the pendent pivoted lever 23 and is normally urged against the platen by the spring 24. Suitable means are provided for releasing said lower pressure rolls, in this instance taking the form of a releasing cam bar 25 rotatably mounted in the carriage. This cam bar is provided with two cam surfaces here shown as transverse notches 26 and 27 into which extend the ends of the levers 21 and 23 so that when this cam bar is turned said levers are actuated and the rolls 19 and 20 are released from contact with the platen. The end of the cam bar 25 is provided with a gear sector 28 which engages with the gear sector 29 on the stud 30. 31 is a rock lever also mounted on the stud 30 and secured to the gear sector 29 by means of the pins 32 or otherwise. The rock lever 31 therefore constitutes an actuating means for the releasing means of the lower rolls.

In order to control the overhead pressure roll from the rock lever 31, there is provided a pin 33 which engages with the cam 34 conveniently carried by the arm 13 of the overhead pressure roll. This cam has two portions, one 35 an active portion, and the other 36 an idle portion. The portion 36 is curved to correspond to an arc drawn from the rocking center or stud 30. The result is that when the rock lever 31 is moved to the left in Fig. 1, the pin 33 will engage the active portion 35 and will lift the overhead pressure roll to the position indicated in Fig. 2. Any further movement of the rock lever 31 to the left will have no effect upon the overhead pressure roll but will merely sustain it in the position which it already occupies. In order to prevent the release of the lower pressure rolls 19 and 20 during the period that the pin 33 engages the active portion 35 of the cam 34, the parts are so arranged that there is a lost motion during the initial movement of the rock lever 31. This may be effected in various ways. For instance,

the notches 26 and 27 may be cut so deep that the cam bar 25 must be turned some distance before it becomes effective against the ends of the levers 21 and 23, or, as herein shown, the sectors 28 and 29 are mutilated and are so related that the teeth thereof do not act to turn the cam bar 25 until the pin 33 has passed to the idle portion 36 of the cam 34. The pin 33 is slidingly mounted in the rock lever 31. For this purpose a bushing 37 is carried by the rock lever 31 and said bushing is provided with a contracted portion 38. The pin 33 passes through the lever 31 and bushing 37 and has an enlarged portion 39 at its inner end, said enlarged portion 39 forming a stop against the contracted portion 38 when the pin is drawn outwardly. The pin 33 also has a head 40 which forms a stop against the rock lever 31 when the pin is pushed inwardly. When the pin is pushed inwardly, it extends underneath the arm 13 of the overhead pressure roll, as shown in Fig. 5, and when it is moved outwardly, it lies at a point outside the plane of the arm 13 as shown in Fig. 6. In the latter instance, a movement of the rock lever 31 will have no effect upon the overhead pressure roll.

When it is desired to make an erasure upon the paper in the machine, the lever 31 is moved to the left in Fig. 1 until the overhead pressure roll assumes the position shown in Fig. 2. It will be noted that said roll is now out of contact with the platen, but is still in a paper guiding position. When in this position, the manifold sheets 41—42 will be prevented from collapsing over the front of the machine. It is now possible to introduce a backing 43, as shown, behind the overhead pressure roll, between the sheets 41 and 42 and to bring the same down behind 41 until the printing point is reached. Any erasure now made will not show on the subsequent sheets. The same operation may be followed if it is desired to print a private mark on the first sheet which it is not desired to have appear on the subsequent sheets. It will further be noted that the lower rolls are not released but hold the sheets firmly and against displacement out of the line of print. So also when heavy stock is being passed through the machine and it is desired not to bend it unduly against the platen, the overhead pressure roll may be moved into the position shown in Fig. 2. Should it be desired to remove the overhead pressure roll entirely from the field of operation, it may be lifted manually into an idle position above the paper table. If, for any reason, it should be desired to release all of the pressure rolls, it is only necessary to throw the lever 31 to the left in Fig. 1 to its full extent, when the overhead pressure roll will be released first and sequentially thereafter the lower pressure rolls will be released. Again, if it is desired to release only the lower pressure rolls, the pin 33 is withdrawn outwardly from the position shown in Fig. 5 to the position shown in Fig. 6, when the movement of the lever 31 will not affect the position of the loverhead pressure roll, but will only release the lower pressure rolls.

The cam bar 25 acts not only as a releasing means, but also as a means for locking the lower pressure feed rolls in their released position. For, it will be readily understood that, when the lever 31 is moved to its extreme position to the left as in Fig. 3, the free ends of the levers 21 and 23 are resting upon the high portion of the cam bar 25 which, in consequence, prevents the return of the lower pressure feed rolls into engagement with the platen.

I claim:

1. In a front strike typewriting machine: a platen, an overhead pressure roll above the line of print normally in engagement with the platen, releasing means for elevating the overhead pressure roll into a sustained paper guiding position, lower pressure feed means located below the line of print and normally in engagement with the platen, releasing means for said lower pressure feed means, and an actuating member for sequentially releasing both of said releasing means in the order in which they are named to admit, at will, of the release of the upper roll independently of the lower roll.

2. In a front-strike typewriting machine, a platen, lower pressure feed means located below the line of print and normally in engagement with the platen, releasing means for said lower pressure feed means, an overhead pressure roll above the line of print also normally in engagement with the platen, releasing means for said overhead pressure roll, an actuating member operating both releasing means, and means permitting the actuating member to operate the releasing means of the overhead pressure roll independently of the releasing means for the lower pressure feed means.

3. In a front-strike typewriting machine, a platen, lower pressure feed means located below the line of print and normally in engagement with the platen, releasing means for said lower pressure feed means, an overhead pressure roll above the line of print also normally in engagement with the platen, releasing means for said overhead pressure roll, an actuating member operating both releasing means, and means permitting the actuating member to independently operate the releasing means of the lower pressure feed means or the releasing means of the overhead pressure roll at will.

4. In a front strike typewriting machine: a platen, an overhead pressure roll above the line of print normally in engagement with

the platen, releasing means for elevating the overhead pressure roll into a sustained paper guiding position, lower pressure feed means located below the line of print and normally in engagement with the platen, releasing means for said lower pressure feed means, an actuating member for sequentially releasing both of said releasing means in the order in which they are named to admit, at will, of the release of the upper roll independently of the lower roll, and means for operating said second releasing means from the actuating means for the first releasing means and before the latter is actuated to admit, at will, of independent actuation of said second releasing means.

5. In a front-strike typewriting machine, a platen, an overhead pressure roll above the line of print normally in engagement with the platen, releasing means for said overhead pressure roll, lower pressure feed means located below the line of print also normally in engagement with the platen, releasing means for said lower means, an actuating member for operating the two releasing means sequentially in the order named, and means for disconnecting said actuating member from the releasing means of the overhead pressure roll to permit independent release of the lower pressure means.

6. In a front-strike typewriting machine, a platen, a paper table extending upwardly from the rear of the platen, lower pressure feed means below the line of print of the platen, an overhead pressure roll above the line of print, releasing means for the lower means, means for elevating the overhead pressure roll partially into a sustained position above the platen in front of the paper table, said means permitting further lifting manually of the overhead pressure roll into a still higher and idle position above the paper table, an actuating member operating both the releasing means of the lower pressure means and the elevating means for the overhead pressure roll, and means permitting the actuating member to operate the elevating means of the overhead roll independently of the releasing means of the lower means.

7. In a front-strike typewriting machine, a platen, a paper table extending upwardly from the rear of the platen, lower pressure feed means below the line of print of the platen, an overhead pressure roll above the line of print, releasing means for the lower means, means for elevating the overhead pressure roll partially into a sustained position above the platen in front of the paper table, said means permitting further lifting manually of the overhead pressure roll into a still higher and idle position above the paper table, an actuating member operating both the releasing means of the lower means pressure roll, and means permitting the actuating member to independently operate the releasing means of the lower means or the elevating means of the overhead pressure roll at will.

8. In a front-strike typewriting machine, a platen, an overhead pressure roll in contact with the platen above the line of print, pivotally supported arms, whose pivotal center is remote from the center of rotation of the platen, carrying said overhead pressure roll, a cam associated with said arms, a rock lever, and means between the rock lever and cam for lifting said arms by the movement of the rock lever.

9. In a front-strike typewriting machine, a platen, an overhead pressure roll in contact with the platen above the line of print, pivotally supported arms, whose pivotal center is remote from the center of rotation of the platen, carrying said overhead pressure roll, a cam associated with said arms, a rock lever, means between the rock lever and cam for lifting said arms by the movement of the rock lever, lower pressure feed means below the printing point of the platen, and releasing means for said lower means operated by the rock lever.

10. In a front-strike typewriting machine, a platen, an overhead pressure roll in contact with the platen above the line of print, pivotally supported arms carrying said overhead pressure roll, a rock lever, a cam associated with said arms having an active portion and an idle portion defined by an arc described from the center of rocking of the rock lever, and means between the rock lever and cam for lifting said arms by the initial movement of the rock lever and for sustaining said arms in an elevated position during the subsequent movement of the rock lever.

11. In a front-strike typewriting machine, a platen, an overhead pressure roll in contact with the platen above the line of print, pivotally supported arms carrying said overhead pressure roll, a rock lever, a cam associated with said arms having an active portion and an idle portion defined by an arc described from the center of rocking of the rock lever, means between the rock lever and cam for lifting said arms by the initial movement of the rock lever and for sustaining said arms in an elevated position during the subsequent movement of the rock lever, lower pressure feed means below the printing point of the platen, and releasing means for said lower means unaffected during the initial movement of the rock lever and while the overhead roll is being elevated and actuated by the rock lever during its subsequent movement while the overhead pressure roll remains elevated.

12. In a front-strike typewriting machine, a platen, an overhead pressure roll in con-

pivotally supported arms, whose pivotal center is remote from the center of rotation of the platen, carrying said overhead pressure roll, a rock lever, and cam means between said rock lever and arms for lifting the arms by the movement of the lever.

13. In a front-strike typewriting machine, a platen, an overhead pressure roll in contact with the platen above the line of print, pivotally supported arms, whose pivotal center is remote from the center of rotation of the platen, carrying said overhead pressure roll, a rock lever, cam means between said rock lever and arms for lifting the arms by the movement of the lever, lower pressure feed means below the printing point of the platen, and releasing means for said lower means operated by the rock lever.

14. In a front-strike typewriting machine, a platen, an overhead pressure roll in contact with the platen above the line of print, pivotally supported arms, whose pivotal center is remote from the center of rotation of the platen, carrying said overhead pressure roll, a rock lever, and cam means between the said rock lever and the arms whereby the initial movement of the rock lever lifts the arms, and the subsequent movement of the rock lever sustains said arms in an elevated position.

15. In a front-strike typewriting machine, a platen, an overhead pressure roll in contact with the platen above the line of print, pivotally supported arms, whose pivotal center is remote from the center of rotation of the platen, carrying said overhead pressure roll, a rock lever, cam means between the said rock lever and the arms whereby the initial movement of the rock lever lifts the arms, and the subsequent movement of the rock lever sustains said arms in an elevated position, lower pressure feed means below the printing point of the platen, and releasing means for said lower means unaffected during the initial movement of the rock lever and while the overhead roll is being elevated and actuated by the rock lever during its subsequent movement while the overhead pressure roll remains elevated.

16. In a front-strike typewriting machine, a platen, an overhead pressure roll in contact with the platen above the line of print, pivotally supported arms carrying said overhead pressure roll, a rock lever, cam means between the said rock lever and the arms whereby the initial movement of the rock lever lifts the arms, and the subsequent movement of the rock lever sustains said arms in an elevated position, lower pressure feed means below the printing point of the platen, releasing means for said lower means unaffected during the initial movement of the rock lever and while the overhead roll is being elevated and actuated by the rock lever during its subsequent movement while the overhead pressure roll remains elevated, and means for permitting the rock lever to operate the releasing means for the lower means without lifting the arms.

17. In a front-strike typewriting machine, a platen, an overhead pressure roll in contact with the platen above the line of print, pivotally supported arms carrying said overhead pressure roll, a rock lever, a cam associated with said arms having an active portion and an idle portion defined by an arc described from the center of rocking of the rock lever, and a pin extending from said rock lever in under said cam for lifting said arms by the initial movement of the rock lever and for sustaining said arms in an elevated position during the subsequent movement of the rock lever.

18. In a front-strike typewriting machine, a platen, an overhead pressure roll in contact with the platen above the line of print, pivotally supported arms carrying said overhead pressure roll, a rock lever, a cam associated with said arms, a pin extending from said rock lever in under said cam for lifting the arms by the movement of said rock lever, lower pressure feed means below the printing point of the platen, releasing means for said lower means operated by the rock lever, and means for withdrawing the pin from engagement with the cam to permit the rock lever to operate the releasing means of the lower means independently of the movement of the overhead pressure roll.

19. In a front-strike typewriting machine, a platen, an overhead pressure roll in contact with the platen above the line of print, pivotally supported arms carrying said overhead pressure roll, a rock lever, a cam associated with said arms having an active portion and an idle portion defined by an arc described from the center of rocking of the rock lever, a pin extending from said rock lever in under said cam for lifting said arms by the initial movement of the rock lever and for sustaining said arms in an elevated position during the subsequent movement of the rock lever, lower pressure feed means below the printing point of the platen, releasing means for said lower means unaffected during the initial movement of the rock lever and while the overhead roll is being elevated and actuated by the rock lever during its subsequent movement while the overhead pressure roll remains elevated, and means for withdrawing the pin from engagement with the cam to permit the rock lever to operate the releasing means of the lower means independently of the movement of the overhead pressure roll.

20. In a front-strike typewriting machine, a platen, lower pressure feed means below the line of print of the platen, releasing means for said lower means, actuating means

for said releasing means, an overhead pressure roll above the line of print of the platen, releasing means for said overhead pressure roll, and means for operating said second releasing means from the actuating means of the first releasing means and before the latter is actuated to admit, at will, of independent actuation of said second releasing means.

21. In a front-strike typewriting machine, a platen, a paper table abjacent to the rear of the platen, an overhead pressure roll pivotally supported at a point in rear of the paper table and normally engaging the platen above the line of print and in front of the paper table, and means for sustaining the pressure roll in an elevated paper guiding position adjacent to the platen but out of contact therewith and in front of the paper table.

22. In a front-strike typewriting machine, a platen, a paper table adjacent to the rear of the platen, an overhead pressure roll pivotally supported at a point in rear of the paper table and normally engaging the platen above the line of print and in front of the paper table, a spring for normally urging the pressure roll against the platen, and means for sustaining the pressure roll, in opposition to the action of the spring, in an elevated paper guiding position adjacent to the platen but out of contact therewith and in front of the paper table.

23. A platen, a pivotally supported overhead pressure roll capable of moving from a paper guiding position in contact with the platen above the line of print to an idle position out of contact with the platen, spring means for holding said pressure roll in either position, and means for sustaining said pressure roll in an intermediate paper guiding position adjacent to the platen but out of contact therewith.

24. A platen, a paper table adjacent to the rear of the platen, a pivotally supported overhead pressure roll capable of moving from a paper guiding position in contact with the platen above the line of print to an idle position above the paper table, spring means for holding said roll in either position, and means for sustaining said pressure roll in an intermediate paper guiding position adjacent to the platen but out of contact therewith and in front of the paper table.

25. A platen, a paper table adjacent to the rear of the platen, an overhead pressure roll pivotally supported at a point in rear of the paper table and capable of moving from a paper guiding position in contact with the platen above the line of print to an idle position above the paper table, and means for sustaining said pressure roll in an intermediate paper guiding position adjacent to the platen but out of contact therewith and in front of the paper table.

26. A platen, a paper table adjacent to the rear of the platen, an overhead pressure roll pivotally supported at a point in rear of the paper table and capable of moving from a paper guiding position in contact with the platen above the line of print to an idle position above the paper table, spring means for holding said roll in either position, and means for sustaining said pressure roll in an intermediate paper guiding position adjacent to the platen but out of contact therewith and in front of the paper table.

27. In a front strike typewriting machine: a platen, an overhead pressure roll above the line of print and normally in engagement with the platen, releasing means for said overhead pressure roll, lower pressure feed rolls located below the line of print and normally in engagement with the platen, releasing and locking means for said lower pressure feed means, and an actuating member for operating both releasing means in the order in which they are named to admit, at will, of independent operation of the first named releasing means.

28. In a front-strike typewriting machine, a platen, an overhead pressure roll above the line of print normally in engagement with the platen, releasing means for said overhead pressure roll, lower pressure feed means located below the line of print also normally in engagement with the platen, releasing and locking means for said lower means, and an actuating member for operating the two releasing means sequentially in the order named.

Signed at New York city, in the county of New York and State of New York, this 8th day of May, 1917.

EDWARD B. HESS.