No. 682,870. Patented Sept. 17, 1901.

H. W. HIGHAM.

TYPE WRITING MACHINE.

(Application filed July 18, 1900.)

(No Model.)

Fig. 1.

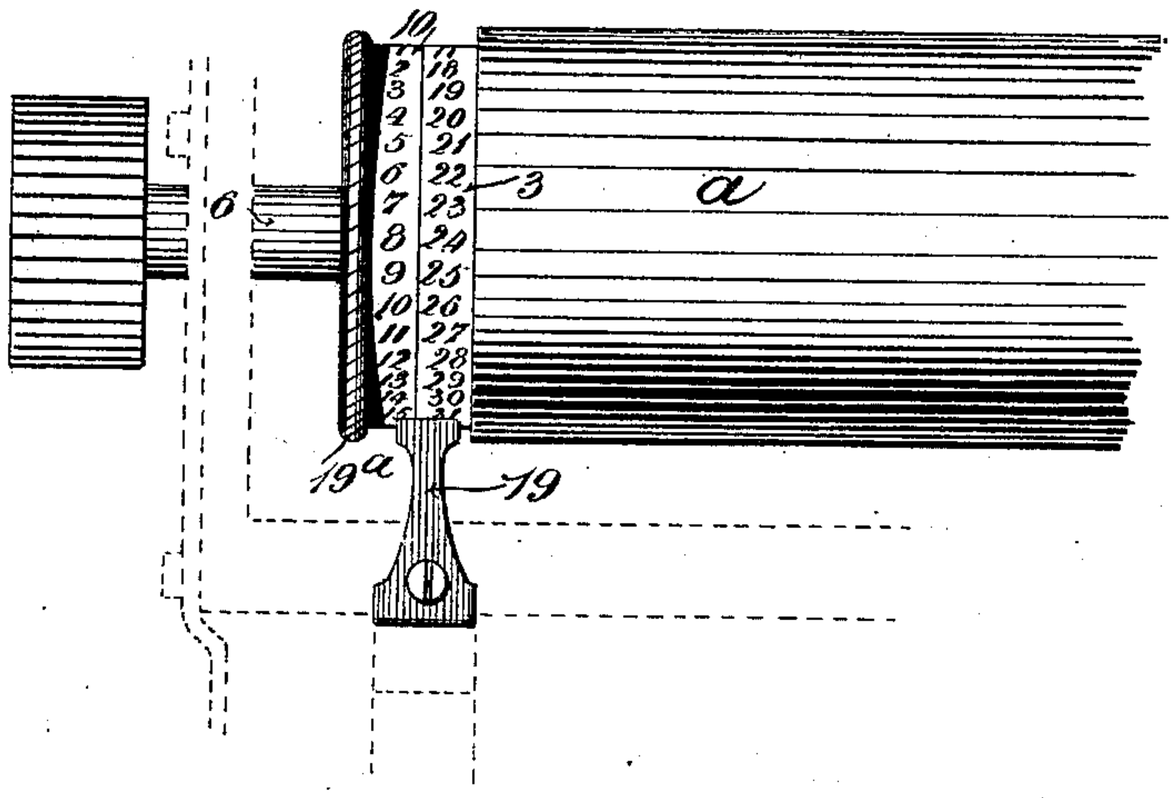


Fig. 2.

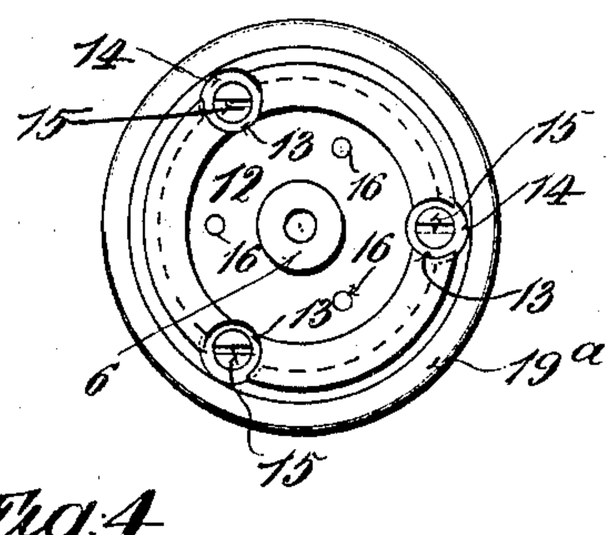


Fig. 3.

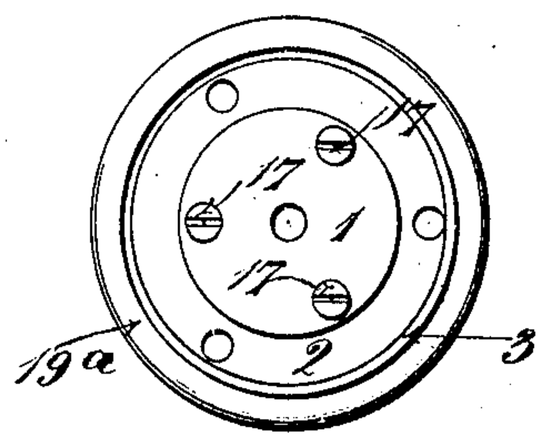


Fig. 4.

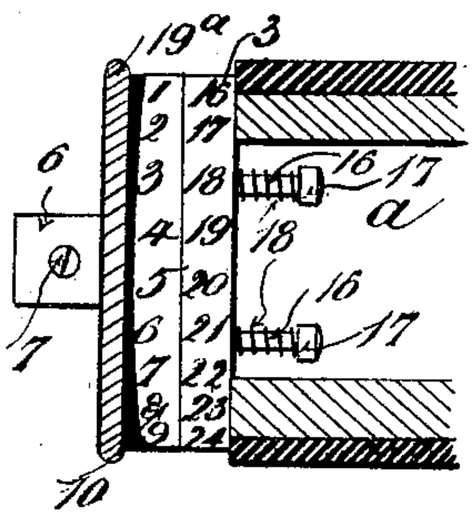


Fig. 5.

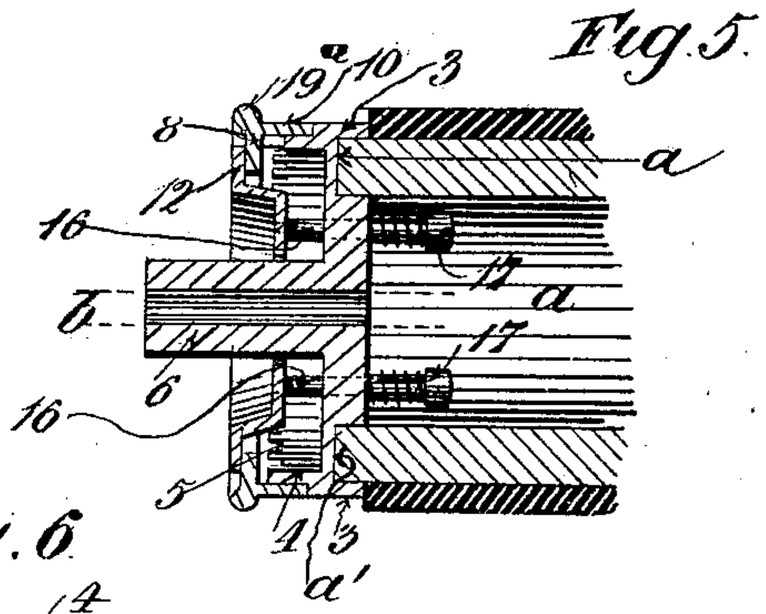
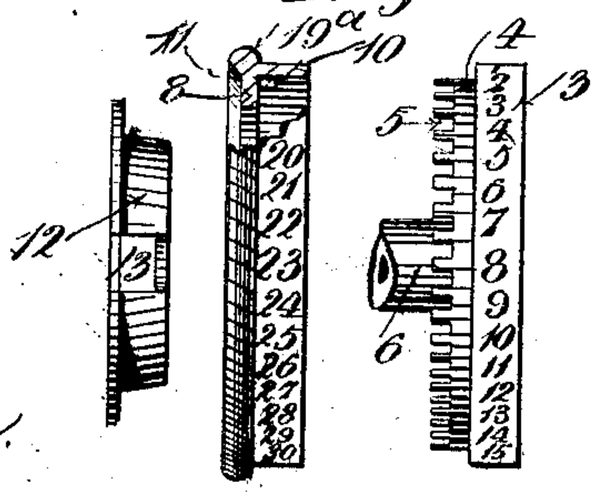


Fig. 6.



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TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 682,870, dated September 17, 1901.

Application filed July 18, 1900. Serial No. 24,016. (No model.)

To all whom it may concern:

Be it known that I, HARRY WILLIAM HIGHAM, a subject of the Queen of Great Britain and Ireland, and a resident of Glen Lyn, Sanderstead Hill, in the county of Surrey, England, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to an improved adjustable position-scale for type-writers; and it has for its object to provide an adjustable scale whereby the operator may easily and readily determine the exact position of any given line on the paper in the machine without displacing the roller or lifting the carriage supporting the said roller, or in such cases as those where the roller is neither rocked nor lifted and where the writing is invisible, owing to a carbon-sheet being placed over it, obviating the removal of the said carbon.

This device is intended more especially for use in making type-writer records of sales or duplicates of invoices, the idea being to make a carbon record of a number of separate invoices upon a single sheet. The latter cannot be placed in the machine in the same relation to all of the several invoice-sheets, because in such a case the type impressions of one record would be made over those of another record and the whole would be undecipherable. It is necessary to have the records of the several sales appear one below another upon the record-sheet, and hence the several originals or invoice-blanks must be inserted in the machine one at a time in different relations to the single record-sheet. The first invoice-blank must be inserted, together with the record-sheet, in such a manner that the carbon impressions shall be produced upon the record-sheet near the top thereof. Then after the removal of the completed invoice from the machine the blank for the second invoice must be so inserted that the items shall appear at the usual place thereon, but below the previously-written items upon the record-sheet. Hence the relative positions of the second invoice and the record-sheet must be quite different from the relative positions of the first invoice and the record-sheet. After the second invoice is written and removed another invoice-blank must be inserted in a third position relatively to the record-sheet, so that the third sale shall appear upon said record-sheet below the second sale, and so on. It would be difficult, if not impossible, to insert the record-sheet and the second or third invoice-blank in the machine together in such a relation that the carbon impressions would appear in the proper place upon the record-sheet. This difficulty arises from the fact that the writing upon the record-sheet is hidden by the overlying carbon-sheet, so that it is impossible to determine just how far down the record-sheet the top edge of the invoice-blank should be placed. Moreover, it is always difficult to insert a number of sheets together in the machine unless their leading edges coincide. For these reasons it is desirable when manifolding several sales upon a single record-sheet to permit the latter to remain in the machine until filled, the several invoices being inserted and removed one at a time—that is to say, at first the record-sheet, carbon-sheet, and invoice are introduced all together. Then the invoice is written and afterward withdrawn without disturbing the record-sheet or the carbon. Then a new invoice is introduced, written, and withdrawn, and then a third invoice is introduced, and so on.

The main object of the present invention is to facilitate the operation of bringing to the printing point or line of the machine the proper portions of the invoices and also of the record-sheet, so that the invoices may be inserted and withdrawn with facility and so that the type impressions shall always appear at the desired places upon the several invoice-sheets and also upon the single record-sheet.

In applying the device to a machine of the Remington type I reduce the diameter of the circular platen at the left-hand end sufficiently to accommodate two bands of metal or other suitable material, upon which are stamped at equidistant intervals two series of letters or numerals which may be differently colored, the total number of each series being equal to the number of teeth upon the ratchet-wheel, by which the platen is actuated. The two series of numerals or the like lie side by side, but are not identical as

far as the position of each of the said numerals is concerned, the same being so arranged that the same numerals or letters in either series when adjusted indicate a position which would be reached were the roller actuated tooth by tooth through a certain predetermined portion of a revolution. The amount of rotation indicated by the position of the same letters or numerals is optional and readily adjusted in accordance with the depth of the heading of the paper being used and when once determined can be fixed. A pointer is attached to any convenient part of the carriage.

In the appended drawings, illustrating the invention, Figure 1 is a plan of part of the carriage of a machine, showing the application of the device thereto. Fig. 2 is a front elevation of the device secured to the platen. Fig. 3 is a rear elevation of the scale removed from the platen. Fig. 4 is a side view of the scale attached to the platen. Fig. 5 is a section of the scale. Fig. 6 is a detached view of the component members of the scale.

Referring to the drawings, *a* is the platen of the machine, reduced somewhat at *a'* to accommodate the circular plate 1, undercut or recessed upon its inner face 2 to receive the end of the platen, and provided with a horizontal peripheral flange 3, upon which are stamped or otherwise produced a series of numerals running consecutively from "1" to "33" or to any number more or less in accordance with the number of teeth upon the ratchet by which the platen is rotated. The flange 3 is reduced at 4 and has formed upon such reduced portion a number of recesses 5, one to each numeral upon the flange 3, and with which numerals the said recesses are in line. (See Fig. 4.) The plate 1 has formed upon its inner face a boss 6, bored to receive the spindle *b* of the platen *a*, to which spindle the said disk or plate 1 is secured by means of a screw 7, tapped into the said boss and bearing upon the spindle. Mounted upon the reduced portion 4 is a ring 8, upon the periphery of which is a horizontal flange 10 of a diameter corresponding to that 3 already referred to as forming part of the disk 1. This latter flange has also indicated upon it in any suitable manner and in a different color a series of numbers the same as those upon flange 1. Upon the inside of the ring 8 is a projection 11, adapted when the two parts are placed side by side to engage with one of the recesses 5, and thereby prevent any movement of the parts irrespective of one another, so long as they are together. Upon the outside of the ring 8 is a dished washer 12, bored to permit of the passage therethrough of the boss 6 and having upon its edge slots 13, designed and arranged to coincide with slots 14, formed upon the inner edge of the ring 8 and provided to permit of the insertion of the screws 15, by which the plate 1 is secured to the end of the platen *a*. Secured to the washer 12 are a number of studs or projections 16, which pass through the plate 1, and between the heads 17 of which and the face of the said plate are compressed spiral springs 18, which thereby serve to keep the two parts of the scale always together, the projection 11, as aforesaid, then preventing any movement of the parts independently of one another.

19, Fig. 1, is a pointer of any suitable form and attached to the carriage *a*.

From the foregoing it will be seen that the position of the numbers upon each of the two component parts of the scale may be adjusted relatively to one another by pulling the part 8 by means of the milled portion 19ª until the projection 11 is free from its engagement with its recess, when the said part 8 may be freely turned in either direction and the adjustment readily effected. The two series of numerals, as aforesaid, are preferably in different colors.

In operation the wheel 10 is adjusted so that the numbers thereon coincide or agree with the numbers upon the wheel 3. Then the platen is rotated until the figure "1" upon each of said wheels stands opposite the index 19. Then the leading edge of an invoice-blank or bill-head is introduced between the platen and the pressure-roller in the customary way. Then the platen is given a partial rotation until, say, the figure "8" upon each wheel stands opposite said index. Then the leading edge of the record-sheet, together with a carbon-sheet, is inserted in the machine between the invoice and the platen. If desired, the invoice, carbon, and record-sheet may be inserted simultaneously with their leading edges coinciding; but this would leave an unnecessary blank space at the top of the carbon-sheet, corresponding to the space occupied by the usual printed heading at the top of the invoice. The object of feeding the invoice partly around the platen—say to the extent of eight or more notches, according to the size of the heading—is to enable the said invoice to have a lead or advance over the record-sheet, so that the writing will appear in the proper place upon the invoice and so that the carbon duplicate will appear near the top of the record-sheet, and thereby enable more items to be recorded upon the latter. The platen is then given another partial rotation to bring the proper portion of the invoice to the printing-center of the machine, and at this time the index 19 is found to point to, say, the number "20" upon each of the line-space number-wheels. The first partial rotation of the platen, from "1" to "8," is for the purpose of giving the invoice a lead over the record-sheet; but the subsequent partial rotation, from "8" to "20," is for the purpose of bringing both sheets around the platen, so that the type impressions may fall at the proper locations thereon. Now before the printing begins and while the platen is stationary the number-wheel 10 is adjusted to bring

the figure "1" thereon opposite the pointer 19. By this operation it will be understood that the figure "1" upon said wheel becomes separated twenty points or notches from the figure "1" upon the other wheel. It will be further understood that the same separation occurs between the other figures upon the two wheels—that is to say, any figure upon either wheel will be found to be separated just twenty points from the corresponding figure upon the other wheel. The keys are then operated in the usual way to write the desired entries upon the invoice and cause the carbon impressions to be made upon the record-sheet. It then becomes necessary to withdraw the original or invoice sheet without disturbing the carbon or the record sheet. This operation may be performed in the usual manner by first operating the usual pressure-roller-release lever to cause the sheets to be released from the platen and then grasping the invoice and withdrawing it. The carbon-sheet and record-sheet remaining in the machine may be pressed against the platen by the thumb of the operator to prevent their being disturbed at the withdrawal of the outside sheet. The last line of writing upon the record-sheet remains at the printing point or center of the machine. The platen is now given a partial reverse rotation. Then a fresh invoice is inserted, and the platen is given a partial forward rotation, the movement of the platen in each direction being equal to twenty notches of the line-space wheel. In order to give the platen just this amount of rotation, it is only necessary to observe what number upon the wheel 3 stands opposite the pointer at the moment and then rotate the platen reversely until the corresponding number upon the wheel 10 stands opposite the pointer, it being understood that said numbers are exactly twenty points or notches apart, as above explained, and that the purpose of the two wheels is to avoid the necessity of either making mental calculations or counting the notches during the rotations of the platen. The second invoice is inserted, and then the platen is rotated forwardly twenty notches to bring the same part of the record-sheet over the printing-center of the type-writing machine. The platen is also given a slight additional forward rotation—say four or five notches—so that a blank space may appear between the two sales upon the record-sheet. The second invoice is then written and afterward withdrawn in the described manner, and then the platen is rotated reversely twenty notches. A third invoice is introduced, the platen is rotated forwardly the same twenty notches plus four or five notches for clearance, and the keys are operated to make the entries, and so on. It will be seen that by this operation the records of from one to ten invoices may be made upon a single sheet, thus economizing stationery and rendering the record much more convenient for reference. It will also be seen that the sheets are accurately positioned without the necessity of calculating or counting notches and that invoices may be typed and records made with even more facility than is the case where a separate record-sheet is used for each invoice. It is obvious that the number of copies in the one case and the point at which the typing is commenced upon the page may be easily and readily varied at the will of the operator in accordance, in the case of ordinary correspondence, with the amount of space occupied by the note or bill heading, as the case may be.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A position-scale for type-writers comprising a disk 1 immovably attached by screws or the like to the end of the platen of the machine and provided with a peripheral flange, upon one part of which are stamped or otherwise indicated a series of numerals or letters, the other part of the flange being reduced and having formed upon the edge thereof a number of recesses to equal the numerals or the like, and also provided with a central boss bored to receive the spindle of the platen and secured thereto by means of a screw or the like, a ring, also provided with a flange upon which are indicated numerals as in the preceding case, and of an internal diameter to fit the reduced part aforesaid, an internal projection adapted to be engaged at will with any one of the recesses upon the first flange and a means such as a dished washer and compressed springs to hold the two parts together and a suitable pointer secured to the carriage of the machine all arranged, constructed and operating substantially in the manner herein set forth and illustrated by the appended drawings.

2. The combination with a rotatable type-writer platen of a scale on one end thereof composed of two independently-revoluble members each numbered or lettered upon its periphery the whole device being secured to and rotating with the platen substantially as herein set forth and illustrated by the appended drawings.

3. In a type-writing machine, the combination with a revoluble platen of a line-space number-wheel mounted concentrically therewith and rotatable relatively thereto, and a series of devices arranged at line-space intervals and constructed to coöperate with said platen and said number-wheel to hold the latter in the different positions to which it is adjusted.

4. In a type-writing machine, the combination with a revoluble platen of a line-space number-wheel mounted concentrically therewith and rotatable relatively thereto, a series of notches arranged at line-space intervals, and a tooth constructed to enter said notches to hold said number-wheel after the latter is adjusted.

5. In a type-writing machine, the combination with a revoluble platen of a line-space number-wheel mounted concentrically therewith and rotatable relatively thereto, a series of notches, a tooth adapted to said notches, and a spring.

6. In a type-writing machine, the combination with a revoluble platen of a line-space number-wheel mounted concentrically therewith and rotatable relatively thereto, positioning devices 5, tooth 11, studs 16, and springs 18.

7. In a type-writing machine, the combination with a revoluble platen of a line-space number-wheel mounted at one end thereof and rotatable relatively thereto, positioning devices 5, teeth 11, washer 12, studs 16, and springs 18.

8. In a type-writing machine, the combination with a revoluble platen of a pair of line-space number-wheels, one of which is mounted to rotate with the platen, and the other of which is independently adjustable.

9. In a type-writing machine, the combination with a revoluble platen of a line-space number-wheel mounted concentrically therewith and adjustably connected thereto, an indicator carried by the platen and rotating therewith, a platen-frame, and an indicator carried by the platen-frame.

10. In a type-writing machine, the combination with a revoluble platen of a pair of line-space number-wheels mounted concentrically therewith, one constructed to rotate with the platen and the other adjustable relatively thereto.

11. In a type-writing machine, the combination with a revoluble platen of a pair of line-space number-wheels mounted at the end of the platen and in close proximity to each other, one of said wheels being fixed to the platen and the other being adjustable relatively thereto, a platen-frame, and an index mounted on said platen-frame and extending to both of said wheels.

12. In a type-writing machine, the combination with a revoluble platen having a line-space number-wheel of a second line-space number-wheel mounted by the side thereof and rotatable relatively thereto, and means for adjusting said second wheel at line-space intervals.

13. In a type-writing machine, the combination with a revoluble platen having a line-space number-wheel of a second line-space number-wheel mounted by the side thereof, a series of notches arranged at line-space intervals, and a tooth constructed to engage said notches to hold said second number-wheel after adjustment of the latter.

14. In a type-writing machine, the combination with a revoluble platen having a line-space number-wheel of a second line-space number-wheel mounted by the side thereof, a series of notches, a tooth adapted to said notches, and a spring.

15. In a type-writing machine, the combination with a revoluble platen and a line-space wheel of a pair of number-wheels mounted concentrically with the platen and each having one number for each tooth of the line-space wheel, said numbers being arranged in numerical order in a single column extending around the periphery of each wheel, and means for adjusting one of said wheels relatively to the other.

16. In a type-writing machine, the combination with a platen of a platen-head, a series of line-space numbers extending around the periphery thereof, and a line-space number-wheel mounted concentrically with said platen-head and adjustable relatively thereto.

17. In a type-writing machine, the combination with a platen having a head, of a series of line-space numbers extending around the periphery thereof, and a line-space number-wheel adjustably mounted upon said platen-head.

18. In a type-writing machine, the combination with a platen of a pair of line-space scales, one fixed to the platen and the other adjustable relatively thereto.

Signed at 19 and 20 Holborn Viaduct, London, in the county of London, England, this 5th day of July, A. D. 1900.

HARRY WILLIAM HIGHAM.

Witnesses:
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EDMUND H. HARBERD.