A. S. DENNIS.

TYPE-WRITING MACHINE.

APPLICATION FILED MAR. 23, 1914. RENEWED DEC. 30, 1915.

1,239,466.

Patented Sept. 11, 1917.

5 SHEETS—SHEET 1.

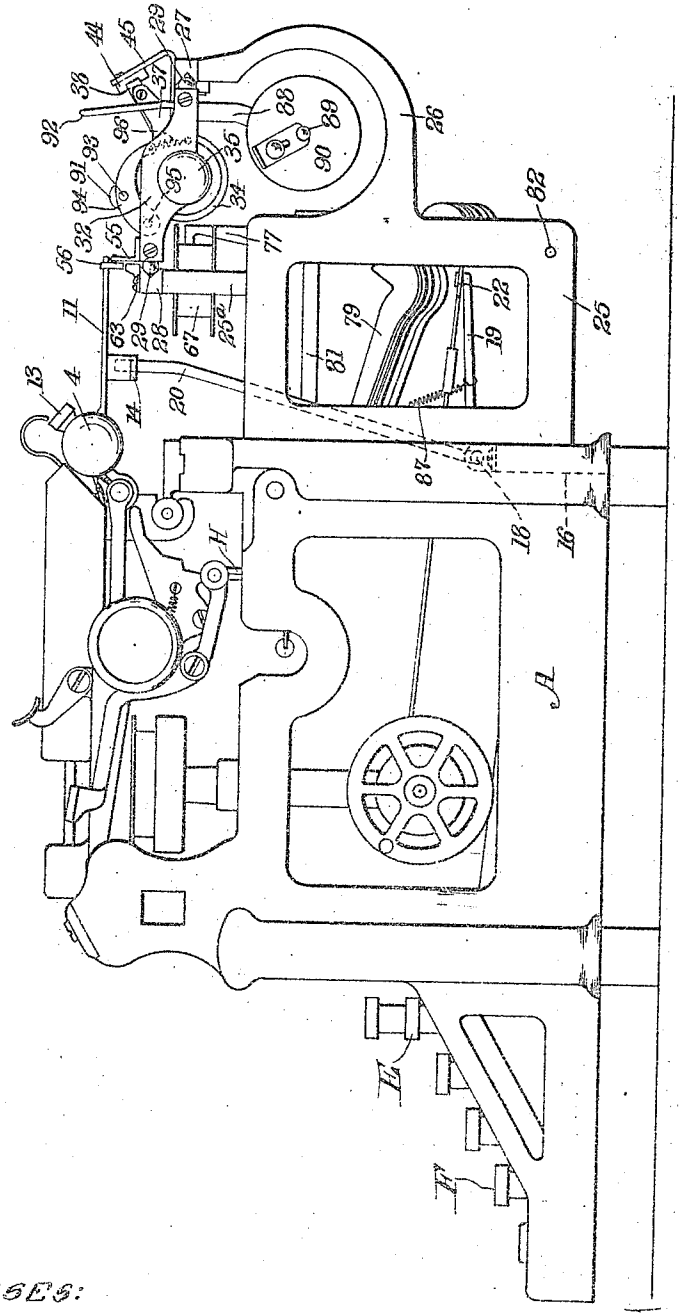


FIG. 1.

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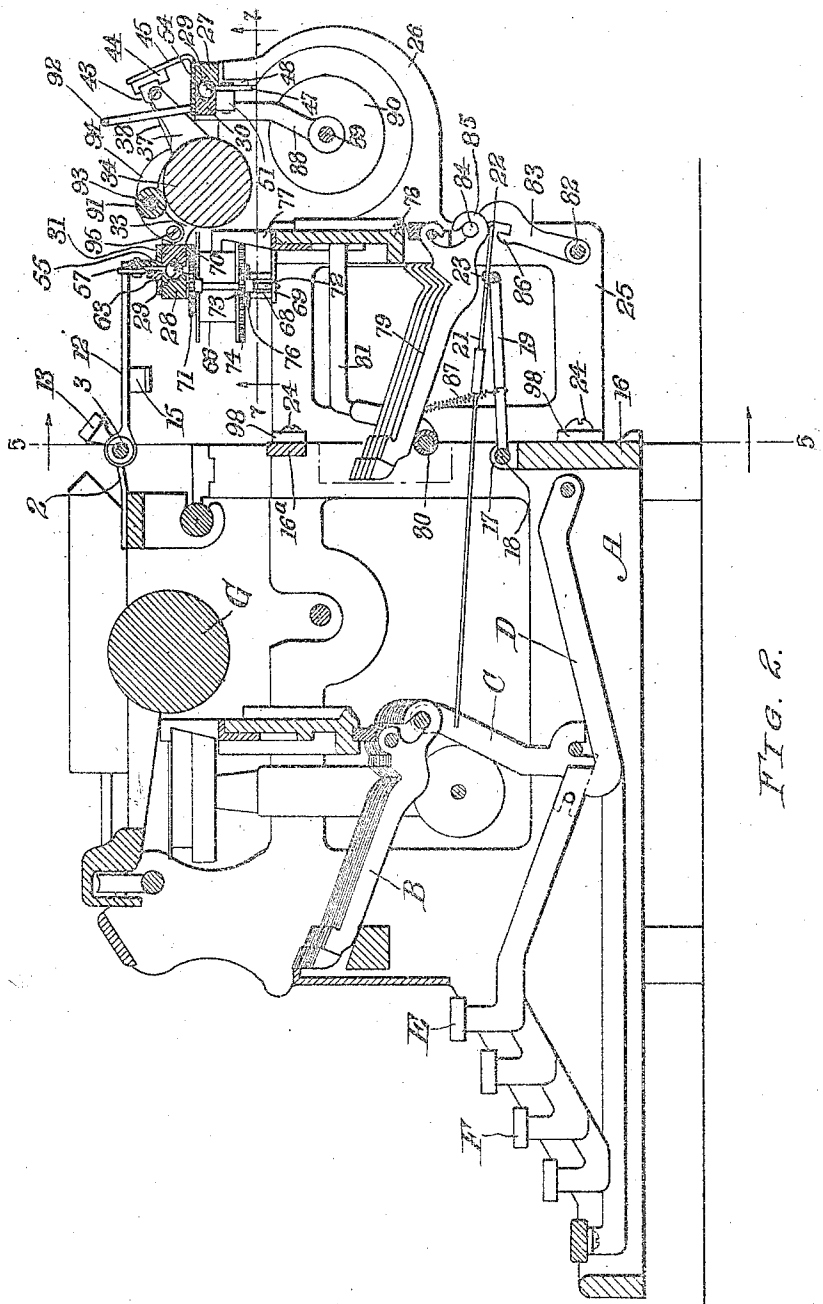


FIG. 2.

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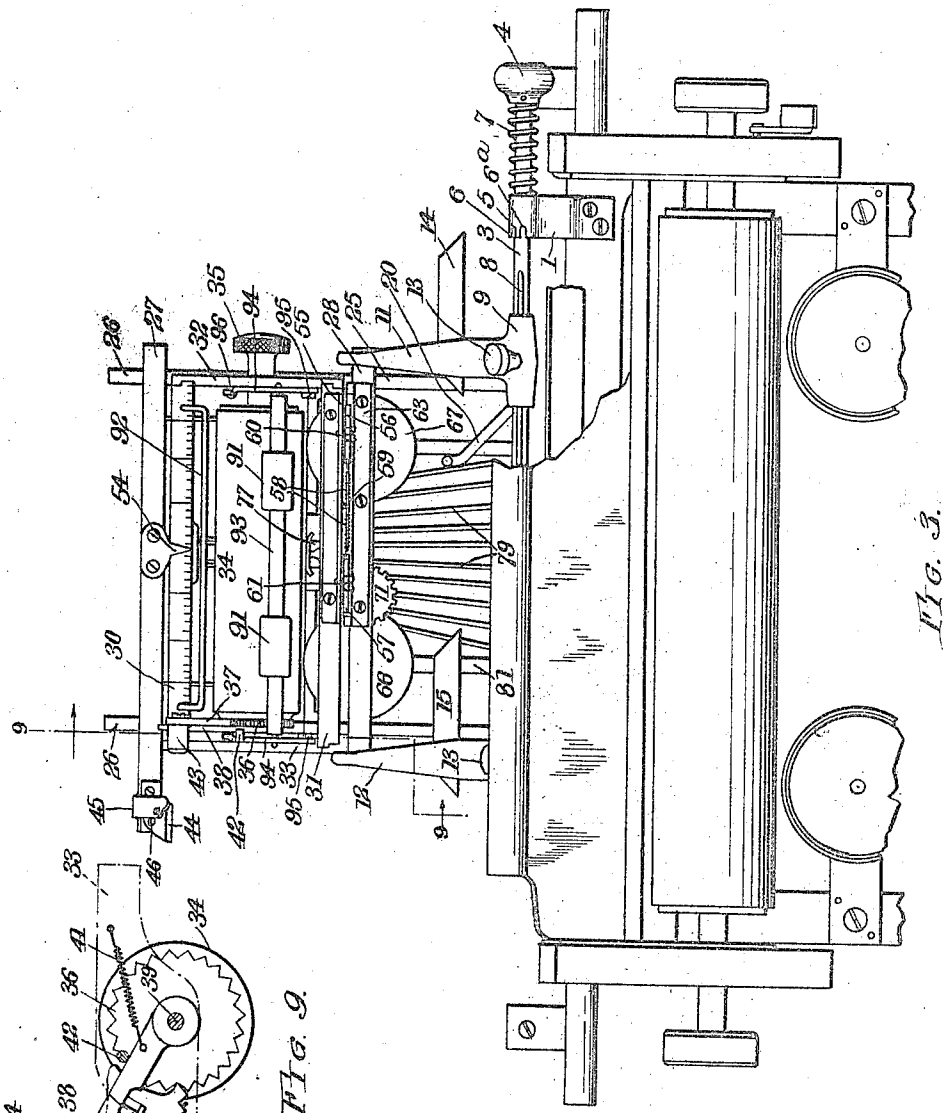


FIG. 3.

FIG. 9.

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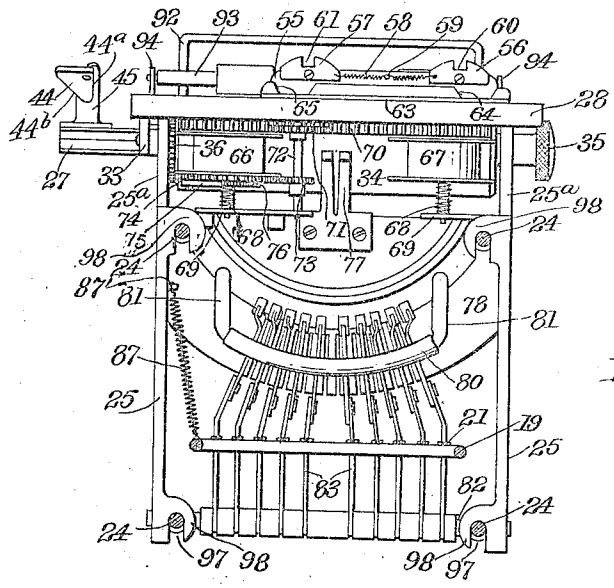


FIG. 5.

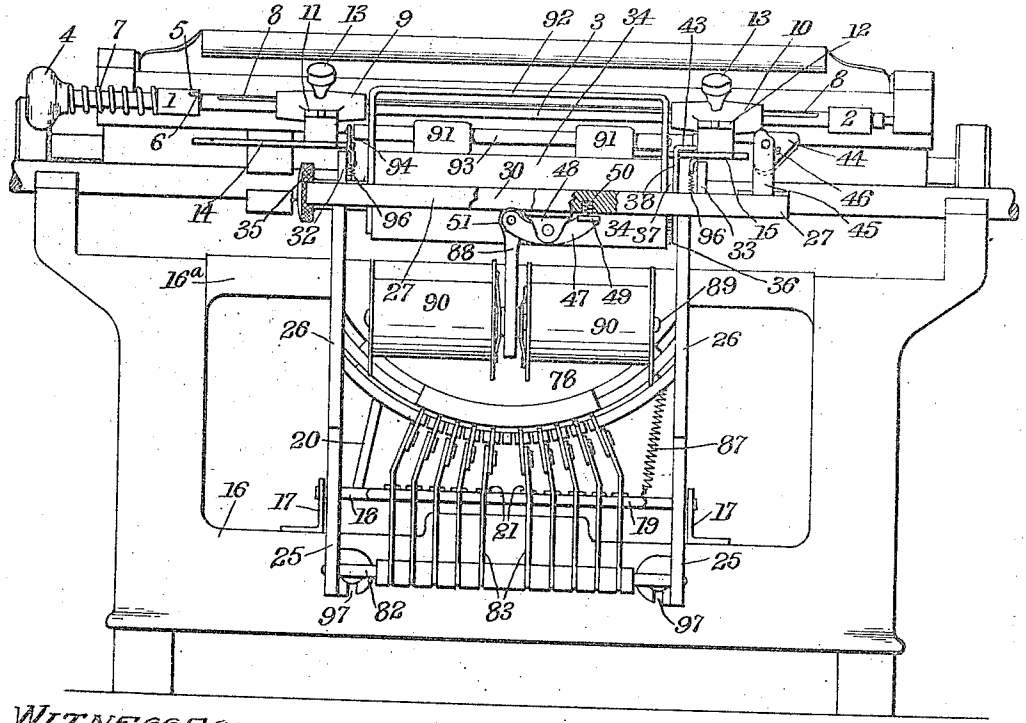


FIG. 4.

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5 SHEETS—SHEET 5.

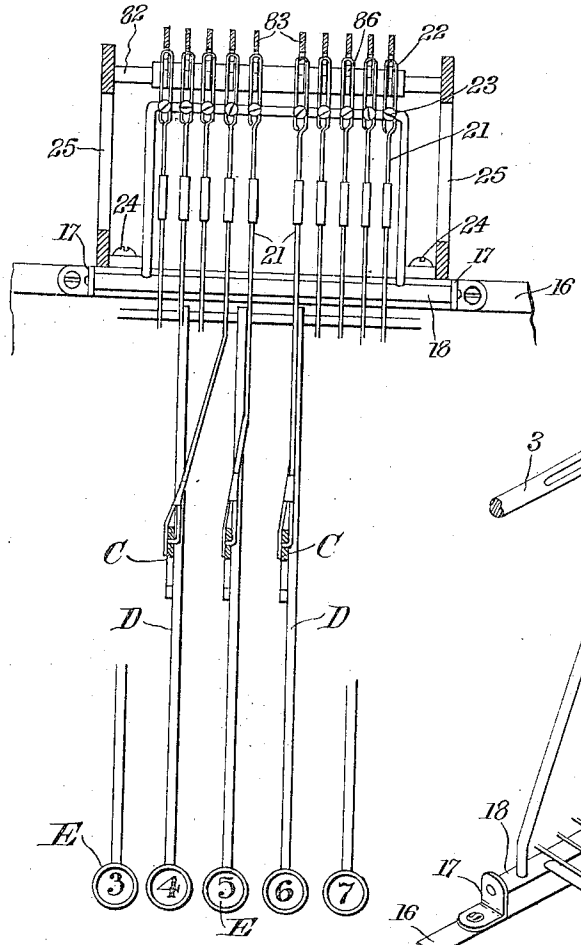
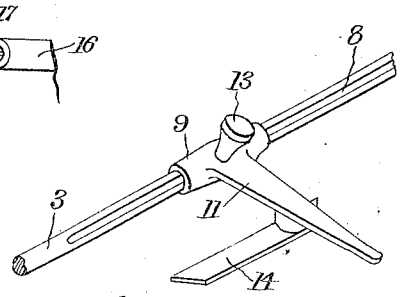


FIG. 6



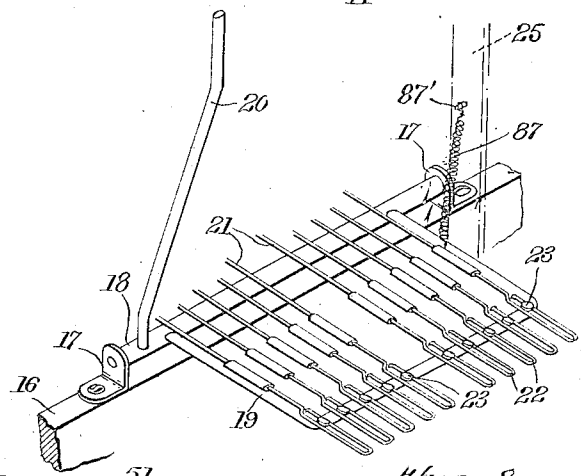


FIG. 8.

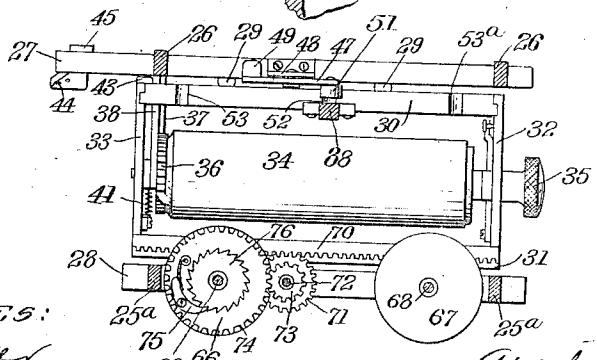


FIG. 7.

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UNITED STATES PATENT OFFICE.

ADOLPHUS S. DENNIS, OF LAKEWOOD, OHIO, ASSIGNOR TO HURLBUT W. SMITH, MATHEW S. EYLAR, CARL GABRIELSON, AND WILBERT L. SMITH, ALL OF SYRACUSE, NEW YORK.

TYPE-WRITING MACHINE.

1,239,466. Specification of Letters Patent. Patented Sept. 11, 1917.

Application filed March 23, 1914, Serial No. 826,757. Renewed December 30, 1915. Serial No. 69,505.

To all whom it may concern:

Be it known that I, ADOLPHUS S. DENNIS, a citizen of the United States, and resident of Lakewood, Cuyahoga county, State of Ohio, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

The present invention relates to improvements in typewriting machines and particularly to a supplemental writing or tally strip attachment for such machines. The object of the invention is to provide an attachment which can be easily applied to a typrewiting machine and by means of which a supplemental writing such as a duplicate of the whole or a part of the primary writing or a tally strip may be prepared when desired, and the parts of which attachment will be practically independent of the recording devices of the typewriting machine, so as not to interfere with the ordinary use of such parts, the supplemental record, however, being made simultaneously with the actuation of the keys manipulated to produce the primary record on the typewriting machine.

While the improved attachment is adapted for use with various styles of typewriting machines, it has, in the accompanying drawings, been shown applied to a machine of the front strike type or class. The particular form of machine illustrated is of the Underwood model, but as the attachment is adapted for use with other forms of typewriting machines the detail construction of such machine is unimportant and therefore the form of the invention shown in the drawings is to be taken as merely illustrative of the principles of the invention and many of the parts are merely shown conventionally, it being understood that various changes will be made in the application of the invention to the different styles of typewriters.

In the drawings:

Figure 1 is a side elevation of a typewriting machine having the improvements hereinafter described applied thereto;

Fig. 2 is a vertical sectional view;

Fig. 3 is a plan view;

Fig. 4 is a rear elevation;

Fig. 5 is a front elevation of the attachment, the means for supporting the same on the typewriter being represented in section as though such view were a section on the line 5—5 of Fig. 2;

Fig. 6 is a horizontal section through the attachment and a portion of the typewriting machine;

Fig. 7 is a sectional view on the line 7—7 of Fig. 2;

Fig. 8 is a detail perspective view;

Fig. 9 illustrates the supplemental sheet feeding means, being substantially a section on the line 9—9 of Fig. 3.

Referring to the drawings, A designates the frame of a typewriting machine in which are suitably supported a series of type bars B which are connected as by levers C with key levers D provided at their outer ends with numeral keys E or letter keys F in the ordinary manner. The type bars B are adapted to coöperate with a rotatable platen G which is mounted in a suitable carriage adapted to have a step-by-step motion, in the direction of the length of the platen, under the control of an escapement H which is actuated by the keys E, F. As previously noted, the parts referred to may be of any preferred or well known construction and therefore are illustrated more or less conventionally.

The improved attachment is secured to the rear face of the frame A of the typewriting machine and, in the embodiment of the invention illustrated, comprising the frame side members 25 which are provided with ears or lugs 98, the slots 97 of which receive screws 24 secured in cross plates or members 16, 16^a of the typewriter frame A. The side plates 25 are provided with rearwardly and upwardly curved extensions 26 to the upper ends of which is secured a stationary track rail 27. A similar track rail 28 is supported on the upper ends of short posts or studs 25^a rising from the members 25, and between said rails is mounted a supplemental record sheet platen carriage comprising side rails 30, 31 and end pieces 32, 33. The adjacent faces of the stationary rails 27, 28 and the platen carriage rails 30, 31 are provided with suitable coöperating grooves in which are arranged antifriction balls 29 in the manner commonly followed in supporting typewriter platen carriages from the frames of such machines. A supplemental platen 34 has gudgeons which are mounted in suitable bearings in the carriage

end plates 32, 33 and one of these gudgeons is provided with a hand wheel 35 by which the platen may be manually turned as desired, and the other gudgeon, indicated by 39, carries a ratchet 36 which has in cooperation therewith a pawl 37 that is pivotally supported on an arm 38, this arm being pivotally mounted on the gudgeon 39 (see Fig. 9). A leaf spring 40 acts to hold the pawl 37 in engagement with the ratchet 36 and a spring 41 connecting the arm 38 with the carriage end plate 33 acts to hold said arm and the pawl thereon in the position shown in Fig. 9 while permitting said arm and pawl to swing downwardly and turn the ratchet 36 and platen 34 as hereinafter described. A stationary stop 42 on the carriage end plate 33 limits upward movement of the arm 38 under the influence of the spring 41.

Means are provided by which as the carriage of the attachment is moved longitudinally, by means hereinafter more particularly described, the arm 38 will be automatically depressed to cause the pawl 37 to turn the platen 34. As shown these means comprise a gravity latch or dog 44 which is pivotally connected with a bracket 45, rising from the rear rail or bar 27, and extends into the path of a projection 43 on the arm 38. As shown particularly in Figs. 5 and 7, the dog 44 is provided with a substantially vertical edge 44^a that normally extends into the path of the arm 38 and has its opposite edge or face 44^b inclined or beveled. A pin 46 limits, by engaging with the bracket 45, movement of the member 44 about its pivot in either direction. As the carriage moves to the left in Figs. 3 and 5, the projection 43 on the feed arm 38 will engage the member 44 and turn it about its pivot so that it will offer no obstruction to the continued leftward movement of the carriage. As soon as the arm 38 has passed from engagement with the member 44, the latter falls to its original position. On the return movement of the carriage when the arm 38 comes against the inclined edge 44^b, the member 44, will be held from turning by contact of the pin 46 with the bracket 45 and the arm 38 will be cammed downward, thereby causing the pawl 37 to turn the ratchet 36 and platen 34 one step.

The paper used in the attachment may be in the form of one or more strips on spools 90 which are supported by an arm 88 depending from the rear rail 30 of the carriage. Two spools 90 are shown and these are carried by a horizontal rod 89 that is centrally supported by the arm 88. The strips pass from the drums 90 in front of the platen 34 and beneath pressure rolls 91, the free ends of the strips being extended upwardly and passing over a yoke-like support 92.

The pressure rolls 91 are mounted on a shaft 93, the ends of which are supported by curved arms 94 pivotally mounted, as at 95, on the carriage end plates 32 and 33, springs 96 being provided for holding the rolls 91 against the platen 34.

A series of type bars 79, fulcrumed on a member 78 connecting the side frames 25 of the attachment are adapted to coöperate with the platen 34 and a suitable ribbon is mounted as hereinafter described to produce a record on the strip or strips of paper on the platen. As shown, said type bars normally rest upon a suitable pad or rubber cushion 80 carried by a properly curved bar 81, the ends of which are secured to the frame of the attachment and said type bars are engaged by studs 84 at the upper end of lever arms 83, which lever arms are fulcrumed on a cross bar or rod 82 extending from one side plate 25 to the other. The forward edge of each lever 83 is notched so as to provide a lip 86 (see Fig. 2) with which is adapted to engage a loop or eye 22 at the rear end of a rod 21, the forward end of which is connected with one of the levers C of the typewriting machine. Normally, the rods 21 are held in the elevated position shown in Fig. 2 so that they are out of engagement with the levers 83 and therefore movement of the levers C incident to actuating the type bars B does not cause any movement of the corresponding type bars 79. The means for thus disconnecting the levers C and 83 comprise a bail 19, the ends of which are connected to a rock shaft 18 that is mounted in bearing lugs 17 secured to the upper edge of the member 16 of the rear frame of the typewriter, and a spring 87 which connects said bail with a stud on one of the side plates 25. To guide the rods 21 in their reciprocation and maintain them in proper relative position screws 23 are provided, said screws extending through the loops or eyes 22 at the rear ends of said rods and into the bail 19.

An arm 20 extending upwardly and rearwardly from the rock shaft 18 projects into the path of cam plates 14, 15 respectively supported by and depending from arms 11, 12 which are adjustably mounted on a rock shaft 3, that is supported in bearings 1, 2, on the typewriter carriage. As shown, the arms 11, 12, are supported on the shaft 3 by sleeves 9 and set screws 13, adapted to engage a groove 8 in said shaft, are provided for holding the arms at any desired position lengthwise of the shaft 3. Shaft 3 is adapted to rock in its supporting bearings 1, 2, to position a stop 5, thereon, opposite either of two notches 6, 6^a in the bearing 1, and said shaft is also movable longitudinally under the influence of a coiled spring 7 to engage the pin 5 with either of the notches 6, or 6^a. To enable the shaft to be readily

adjusted as desired, it is provided at one end with an enlarged head 4. When the rock shaft 3 is adjusted as shown in the drawings with its pin 5 engaging the notch 6 in the bearing 1, the rear ends of the arms 12 and 11 will be positioned so that as the typewriter carriage moves said arms will be adapted to coöperate with plates 56, 57 on the carriage of the attachment to connect the two carriages so that they will move together and also enable the plates 14 and 15 to engage with the arm 20.

The plates 56, 57 are pivotally mounted on an angle bar 55 secured to the forward bar 31 of the carriage of the attachment and said plates are provided in their upper edges with centrally arranged notches 60, 61, respectively, the top edges of said plates being beveled or curved downwardly from said notches toward both ends. Springs 58 connect said plates with a stationary pin 59 and act to normally hold the plates in horizontal position as shown in Fig. 5. To the front stationary carriage guide rail 28 is secured an angle plate 63, the vertical flange of which is beneath the plates 56, 57. Notches 64, 65 are formed in the plate 63 so that when the plates 56, 57 are positioned thereover said plates may rock about their supporting pivots in opposition to the springs 58 to permit the disengagement of the arms 11, 12, and the release of the carriage of the attachment from the carriage of the typewriting machine.

The ribbon for the printing devices of the attachment is carried by two drums 66, 67 secured on shafts 68 that are mounted in bearings in brackets 69 on the carriage supporting rail 28. The ribbon is wound from the drum 67 onto the drum 66 past a guide 77, the feeding movement being derived from the travel of the carriage. As shown, there is secured to the lower face of the carriage member 31 a rack 70 which meshes with a pinion 71 on a vertical shaft 72 supported by the carriage rail 28 and aforesaid bracket 69. The shaft 72 also carries a pinion 73 which meshes with a gear 74 loose on the shaft 68 of the drum 66. On the gear 74 is pivotally mounted a pawl 75 which coöperates with a ratchet 76 on the drum 66. Therefore as the rack 70 moves in one direction the drum 66 will be positively turned to draw the ribbon from the drum 67 and wind it upon the drum 66. During movement of the rack 70 in the opposite direction, the pawl 75 will slip idly over the teeth of the ratchet 76.

In the undersurface of the carriage rail 30 are formed 3 recesses 52, 53 and 53ª, each adapted to receive a roll 51 carried by a rocker arm 47 fulcrumed on a bracket 48 depending from the rear stationary guide 27. The opposite end of the rocker arm 47 is provided wth a lip 49 which extends beneath a cavity formed in the rail 27 and within which is arranged a coiled spring 50 that acts to hold the roll 51 in any of the recesses 52, 53, 53ª in the carriage bar 30 and thus hold the carriage stationary. The upper face of the bar 30 is suitably graduated and an index finger or pointer 54 on the rail 27 indicates the relative position of the platen 34 and its supporting carriage with relation to the rails 27 and 28.

The manner of using the improvements may be briefly described as follows: assuming that it is desired to employ the attachment for recording amounts appearing only in certain columns, for example, the totals of a series of bills of charges which are being written on the typewriter, the totals being positioned adjacent the right hand edge of a sheet on the platen G. For this work it will be necessary to employ only the strip on the right hand drum or spool 90 (as viewed from the front of the typewriter.) The operator will first adjust the arm 11 longitudinally of the rock shaft 3 so that its rear end will be adapted to engage the notch 60 of the plate 56 when the typewriter carriage is advanced to the left to a point where the platen will be in position to receive the highest denominational order of a number to be written in the "totals" column. When the arm 11 has been thus properly adjusted and secured by its set screw 13, the shaft 3 will be positioned as shown so that the pin or stud 5 thereon is within the slot 6 in the supporting bracket 1, or the parts occupy the relative positions shown in Fig. 3. The typewriter will then be actuated to write the several items of the bill and as the carriage thereof comes into position to permit of the total being recorded in the appropriate column the arm 11 will be positioned in the notch 60 of the plate 56 and during the further movement of the platen G incident to writing the total both carriages will be locked together and move in unison. As the arm 11 approaches the notch 60, in the above described movement of the typewriter carriage, it will engage the curved upper edge of the plate 56 and rock said plate about its pivot, this rocking movement being permitted by the notch 64 in the angle plate 63. However, when the arm 11 has entered the notch 60 turning movement of the plate 56 in the opposite direction is prevented by the angle plate 63 and during the time that the two carriages are moving together, it will be seen that the plate 56 will be maintained in substantially horizontal position parallel to the upper edge of the angle plate 63. The leftward movement of the arm 11 with the typewriter carriage when the latter moves into position to receive the first figure of the "total" causes the cam plate 14 to engage the arm 20 and actuate the rock shaft 18, lowering the bail

19 and the loops 22 so that the latter pass over the lips 86 of the levers 83. Therefore, during the writing of the "total" on the typewriting machine, the corresponding type bars 79 will be actuated to duplicate the record of such total on the strip on platen 34. If the leftward movement of the typewriter carriage is continued beyond the width of the "totals" column, the carriage of the attachment will be automatically disconnected from the typewriter carriage as the plate 56 comes over the notch 65 in the plate 53 so that it is adapted to rock about its pivot and permit the arm 11 to move from the notch 60 the cam plate 14 simultaneously releasing the arm 20 so that the rods 21 will be disconnected from the levers 83. When the typewriter carriage is returned to its initial position at the right of the machine the strip feed pawl 37 will be automatically actuated to feed said strip one step or line.

In the embodiment of the invention illustrated, two record strips are provided and it will be seen that by adjusting the arm 12 so that it will coöperate with the plate 57 in a manner similar to the manner in which the arm 11 coöperates with the plate 56, it will be possible to duplicate on the left hand strip (as viewed from the front of the typewriter), items recorded in one column or succession of columns on the platen G and to record on the right hand strip duplicates of items recorded in a second column or succession of columns on the platen G. The left hand strip may, for example, serve to provide a duplicate of all items recorded by the typewriting machine while the right hand strip is employed only for recording duplicates of totals. The amount of each feed movement or spacing of the strips from one line to the next may be less than that of the line spacing movement of the platen G so that the lines on the strips may be relatively closer together than the lines on the primary record.

When it is not desired to employ the attachment, it is merely necessary to rock the shaft 3 so that the pin 5 thereon will engage the notch 6^a in the bracket 1 when the arms 11, 12, on said rod will be lifted above the top of the plates 56, 57, and the cam plates 14 and 15 will be lifted above the top of the arm 20 so that neither the carriage nor printing devices will be operative. The entire attachment with the exception of the shafts 3 and 18 and the parts carried thereby may be readily removed from the machine by merely disconnecting the spring 87 from the bail 19 and raising the supporting plates 25 so that the stems of the screws 24 will pass through slots 97.

In the embodiment of the invention illustrated and described, only the numeral keys E of the typewriter are adapted to actuate the tally strip printing means. It will be evident, however, that if desired the bars 79 may be of such number that both the numeral and letter keys of the typewriter can be duplicated and thereby, if desired, a complete duplicate of anything written on the machine will be provided by the attachment.

Having thus described my invention, what I claim is:

1. In a typewriting machine, the combination of a platen, type adapted to coöperate with the platen, keys for actuating the type, means for effecting relative movement between the type and platen, in the direction of the length of the latter, and auxiliary printing devices adapted to duplicate a record produced by actuating said keys when a predetermined section of the platen is opposite the printing point of the type and to be inoperative when a different section of the platen is opposite said printing point.

2. In a typewriting machine, the combination of a platen, type adapted to coöperate with the platen, keys for actuating the type, means for effecting relative movement between the type and platen, in the direction of the length of the latter, means for supporting a supplemental record sheet, supplemental printing devices for making a record on a sheet supported by said means, and means for automatically connecting said supplemental printing devices with keys of the typewriter when a predetermined section of the platen is opposite the printing point of the type.

3. In a typewriting machine, the combination of a platen, type adapted to coöperate with the platen, keys for actuating the type, means for effecting relative movement between the type and platen, in the direction of the length of the latter, means independent of said platen for supporting a supplemental record sheet, type supplemental to those aforesaid for making a record on a sheet supported by said means, and means for automatically connecting the actuating devices of the supplemental type with keys of the typewriter when a predetermined section of the platen is opposite the printing point of the type coöperating therewith.

4. In a typewriting machine, the combination of a longitudinally movable platen, type adapted to coöperate with the platen, keys for actuating the type, means for supporting a supplemental record sheet, printing devices supplemental to said type and platen for coöperating with a sheet supported by said means, and means for automatically connecting the said supplemental printing devices with said keys when said platen is adjusted to bring a predetermined section thereof into position to receive imprints from said type.

5. In a typewriting machine, the combina-

tion of a platen, type bars adapted to co-operate with the platen, keys for actuating the type bars, the platen and series of type bars being relatively movable bodily in the direction of the length of the platen, means for supporting a supplemental record sheet, supplemental type bars adapted to print upon a sheet supported by said means, and means for automatically connecting said supplemental type bars with said keys when a predetermined section of said platen is in position to be struck by the first mentioned type bars.

6. In a typewriting machine, the combination with a series of type bars, a platen mounted on a carriage to travel longitudinally past the printing point of the type bars, and keys for actuating the type bars, of a supplemental platen, means for supporting a record sheet against said supplemental platen, means for causing the supplemental platen to move with the typewriter carriage, printing devices for coöperating with the supplemental platen, and means for automatically connecting said printing devices with the keys of the typewriter at a predetermined point in the travel of the typewriter carriage.

7. In a typewriting machine, the combination of a series of type bars, a platen mounted on a carriage to travel past the printing point of the type bars, keys for actuating the type bars, means independent of the platen and its carriage for supporting a supplemental record sheet, means for connecting said sheet supporting means with the platen carriage to travel therewith, and means for producing records on a sheet on said supporting means simultaneously with the actuation of said type bars and when the supporting means is connected with the carriage and a predetermined section of the platen is opposite the printing point of the type bars.

8. In a typewriting machine, the combination of a series of type bars, a platen mounted on a carriage to travel past the printing point of the type bars, keys for actuating the type bars, means for supporting a supplemental record sheet adapted to be intermittently connected to the platen carriage, type bars arranged to coöperate with a sheet on said supporting means, and means for connecting the last mentioned type bars with said keys when said supporting means is connected with the platen carriage.

9. In a typewriting machine, the combination of a series of type bars, a platen mounted on a carriage to travel past the printing point of the type bars, keys for actuating the type bars, a supplemental carriage provided with means for supporting a record sheet, printing devices adapted to coöperate with a sheet carried by the supplemental carriage, means controlled by the main platen carriage for connecting said carriages together, and means for simultaneously actuating said printing devices and said type bars when the carriages are connected.

10. In a typewriting machine, the combination of a series of type bars, a platen mounted on a carriage to travel past the printing point of the type bars, keys for actuating the type bars, means for supporting a supplemental record sheet, printing devices for coöperating with a sheet carried by said supporting means, and means controlled by movement of the platen carriage whereby said printing devices are only actuated when a predetermined section of the platen is opposite the printing point of the type bars.

11. In a typewriting machine, the combination of a series of type bars, a platen mounted on a carriage to travel past the printing point of the type bars, keys for actuating said bars, means for supporting a supplemental record sheet, printing devices for coöperating with a sheet on said supporting means, means controlled by the movement of said carriage in one direction for actuating a member of the printing devices when a corresponding type bar is operated, and means controlled by movement of said carriage in the opposite direction for feeding said sheet from line to line.

12. The combination with a typewriting machine comprising a platen, type for co-operating with the platen, and keys for actuating the type, of a supplemental writing attachment detachably connected with the typewriting machine and including a support, a platen for a record sheet independent of the typewriter platen, type for coöperating with the supplemental platen, and means for automatically connecting the actuating devices of the last mentioned type with said keys when a predetermined section of the typewriter platen is opposite the printing point.

13. The combination with a typewriting machine, comprising a platen, type bars, and keys for actuating the type bars, of a supplemental record sheet platen in rear of the typewriter platen, an independent series of type bars adapted to coöperate with the supplemental platen, and means adapted to connect the supplemental type bars with type bars of the typewriting machine.

14. The combination with a typewriting machine, comprising a platen mounted in a carriage, type bars, and keys for actuating the type bars, of a supplemental sheet platen in rear of the typewriter platen, an independent series of type bars adapted to co-operate with the supplemental platen, and means controlled by the typewriter platen carriage for causing the supplemental type bars to be actuated simultaneously with type bars of the typewriting machine.

15. The combination with a typewriting machine, comprising a platen mounted in a suitable carriage, type bars, and keys for actuating the type bars, of a supplemental record sheet platen, a carriage for the supplemental platen independent of the typewriter platen carriage, an arm adjustably connected with the typewriter platen carriage and adapted to engage the supplemental platen carriage to cause said carriages to travel together, an independent series of type bars for coöperating with the supplemental platen, and means for actuating the last said type bars from said keys when the typewriter platen carriage and supplemental platen carriage are connected together.

16. The combination with a typewriting machine comprising a platen, a carriage therefor, type bars, and keys for actuating the type bars, of a supplemental record sheet platen supported independently of the typewriter platen carriage, adjustable means adapted to connect the supplemental platen with the typewriter platen carriage, an independent series of type bars adapted to cooperate with the supplemental platen, detachable connections between the last said type bars and type bars of the typewriting machine, and means adapted to detach said connections when the supplemental platen is not connected with the typewriter platen carriage.

17. The combination with a typewriting machine comprising a platen, a carriage therefor, type bars, and keys for actuating the type bars, of a supplemental record sheet platen supported independently of the typewriter platen carriage, an arm adjustable longitudinally of the typewriter platen carriage and adapted to connect the supplemental platen with the typewriter platen carriage, an independent series of type bars adapted to coöperate with the supplemental platen, detachable connections between the last said type bars and type bars of the typewriting machine, and means adapted to detach said connections when the supplemental platen is not connected with the typewriter platen carriage.

18. The combination with a typewriting machine comprising a platen, a carriage therefor, type bars, and keys for actuating the type bars, of a supplemental record sheet platen supported independently of the typewriter platen carriage, an independent series of type bars adapted to coöperate with the supplemental platen, detachable connections between the last said type bars and type bars of the typewriting machine, means for automatically rendering said connections operative during a predetermined portion of the travel of the typewriter platen carriage, and means for automatically moving the supplemental platen with the typewriter platen carriage when said sets of type bars are connected together.

19. The combination with a typewriting machine, comprising a platen, a carriage therefor, type bars, and keys for actuating the type bars, of means for supporting a plurality of supplemental writing sheets, an independent series of type bars, means controlled by the typewriter platen carriage for successively positioning sheets on said supporting means opposite the printing point of said independent type bars, and means for connecting said independent type bars with type bars of the typewriter machine when said sheets are in printing position.

20. The combination with a typewriting machine comprising a platen, a carriage therefor, type bars, and keys for actuating the type bars, of means supporting a plurality of supplemental writing sheets, an independent series of type bars, means controlled by the typewriter platen carriage for successively positioning sheets on said supporting means opposite the printing point of said independent type bars, and means for actuating said independent type bars in unison with the type bars of the typewriter machine when said sheets are in printing position.

21. The combination with a typewriter machine comprising a platen, a carriage therefor, type bars, and keys for actuating said type bars, of means for supporting a plurality of supplemental writing sheets, an independent series of type bars, means for moving said supporting means in unison with the typewriter platen carriage when predetermined portions of the platen are opposite the printing point of the type bars of the typewriting machine, and means for connecting said independent type bars with the type bars of the typewriting machine when said sheets are in printing position.

22. The combination with a typewriting machine comprising a platen, a carriage therefor, type bars, and keys for actuating said type bars, of means for supporting a plurality of supplemental writing sheets, an independent series of type bars, means for moving said supporting means in unison with the typewriter platen carriage when predetermined portions of the platen are opposite the printing point of the type bars of the typewriting machine, means for connecting said independent type bars with the type bars of the typewriting machine when said sheets are in printing position, and means for automatically disconnecting said independent type bars and the type bars of the typewriter machine when said sheets are out of printing position.

23. The combination with a typewriting machine comprising a platen, a carriage therefor, type bars, and keys for actuating

said type bars, of means for supporting a plurality of supplemental writing sheets, an independent series of type bars, means for moving said supporting means in unison with the typewriter platen carriage when predetermined portions of the platen are opposite the printing point of the type bars of the typewriting machine, and means for automatically connecting and disconnecting said independent type bars and the type bars of the typewriter machine as said sheets are moved into and out of printing position.

24. The combination with a typewriting machine comprising a platen, a carriage therefor, type bars, and keys for actuating said type bars, of means for supporting a plurality of supplemental writing sheets, an independent series of type bars, means for moving said supporting means in unison with the typewriter platen carriage when predetermined portions of the platen are opposite the printing point of the type bars of the typewriting machine, and means controlled by the position of the typewriter platen carriage for automatically connecting and disconnecting said independent type bars and the type bars of the typewriting machine as said sheets move into and out of printing position.

25. The combination with a typewriting machine comprising a platen, a carriage therefor, type bars, and keys for actuating said type bars, of means for supporting a plurality of supplemental writing sheets, an independent series of type bars coöperating with said supporting means to make records on said supplemental writing sheets, means for automatically connecting and disconnecting the platen carriage and said supporting means when predetermined portions of said platen are opposite the printing point of the type bars coöperating therewith, and means for actuating said independent series of type bars from the type bars of the typewriting machine.

26. The combination with a typewriting machine comprising a platen, a carriage therefor, type bars, and keys for actuating said type bars, of means for supporting a plurality of supplemental writing sheets, an independent series of type bars coöperating with said supporting means to make records on said supplemental writing sheets, means for automatically connecting and disconnecting the typewriter platen carriage and said supporting means to cause the latter to move with the platen carriage during certain portions of the movement of the latter to bring said supplemental writing sheets successively into printing position, and means for automatically connecting the type bars of the typewriting machine and said independent type bars when said supporting means is connected with the platen carriage.

27. The combination with a typewriting machine comprising a platen, a carriage therefor, type bars, and keys for actuating said type bars, of means for supporting a plurality of supplemental writing sheets, an independent series of type bars coöperating with said supporting means to make records on said supplemental writing sheets, means for automatically connecting and disconnecting the typewriter platen carriage and said supporting means to cause the latter to move with the platen carriage during certain portions of the movement of the latter to bring said supplemental writing sheets successively into printing position, and means for automatically connecting and disconnecting the type bars of the typewriting machine and said independent type bars substantially simultaneously with the connection and disconnection of said supporting means and the platen carriage.

28. In a typewriting machine, the combination of primary and supplemental platens and means whereby said platens are automatically connected together and move in unison through a part only of the character spacing movement of the primary platen.

29. In a typewriting machine, the combination of primary and supplemental platens and means whereby said platens are automatically connected together at a predetermined point in the character spacing movement of the primary platen.

30. In a typewriting machine, the combination of primary and supplemental platens, means for connecting said platens together so that they move in unison, and automatically operating means for disconnecting said platens at a predetermined point in their character spacing movement.

31. In a typewriting machine, the combination of primary and supplemental platens, means for connecting said platens together so that they move in unison, automatically operating means for disconnecting said platens at a predetermined point in their movement, and means operating automatically to restore the connection between said platens after the primary platen has continued its movement for a predetermined distance.

32. In a typewriting machine, the combination of primary and supplemental platens, means for automatically connecting said platens together at a plurality of points in the movement of the primary platen, and means automatically operating to disconnect said platens after they have moved in unison a predetermined distance from one or more of the points of connection.

33. In a typewriting machine, the combination of primary and supplemental sheet holders, independent supporting means for said sheet holders movable therewith, cooperating devices on said supporting means

adapted to automatically connect the same together so that they move in unison throughout one or more portions of the movement of the primary sheet holder, independent sets of printing devices coöperating with said primary and supplemental sheet holders, and automatically operating means forming a connection between said sets of printing devices while said supporting means are connected together.

34. The combination with a typewriting machine comprising a platen, a carriage therefor, printing devices and means for actuating the printing devices, of a supplemental record sheet platen, an independent series of printing devices coöperating with the supplemental record sheet platen, members adapted to form connections between the actuating means for said printing devices of the typewriting machine and the independent series of printing devices, and means actuated by the typewriting machine platen carriage for controlling said members.

35. The combination with a typewriting machine, comprising a platen, a carriage therefor, printing devices and means for actuating the printing devices, of a supplemental record sheet platen, an independent series of printing devices coöperating with the supplemental record sheet platen, members adapted to form connections between the actuating means for said printing devices of the typewriting machine and the independent series of printing devices, and cam means actuated by the typewriting machine platen carriage and controlling the position of said members.

36. The combination with a typewriting machine comprising a platen, a carriage therefor, printing devices and means for actuating the printing devices, of a supplemental record sheet platen, an independent series of printing devices coöperating with the supplemental record sheet platen, members adapted to form connections between the actuating means for said printing devices of the typewriting machine and the independent series of printing devices, and a spring and cam means coöperating therewith and actuated by the typewriting machine platen carriage for controlling the position of said members.

37. The combination with a typewriting machine comprising a platen, a carriage therefor, printing devices and means for actuating the printing devices, of a supplemental record sheet platen, an independent series of printing devices coöperating with the supplemental record sheet platen, members adapted to form connections between the actuating means for said printing devices of the typewriting machine and the independent series of printing devices, a rocking member controlling the position of said members, a spring for moving said rocking member in one direction, and cam means actuated by the typewriting machine platen carriage for moving said rocking member in the opposite direction.

38. The combination with a main typewriting machine comprising a platen, printing devices coöperating with the platen, and means for actuating the printing devices; of a supplemental machine arranged in the rear of the main typewriting machine and comprising a platen and printing devices cooperating with the platen; members adapted to form a connection between said means and the printing devices of the supplemental machine; means for disconnecting said members to permit the printing devices of the main typewriting machine to be actuated independently of the printing devices of the supplemental machine, and means movable with the platen of the main typewriting machine and adapted to automatically actuate said disconnecting means.

39. The combination with a main typewriting machine comprising a platen, printing devices coöperating with the platen, and means for actuating the printing devices; of a supplemental machine arranged in the rear of the main typewriting machine and comprising a platen and printing devices cooperating with the platen; members adapted to form a connection between said means and the printing devices of the supplemental machine; means for disconnecting said members to permit the printing devices of the main typewriting machine to be actuated independently of the printing devices of the supplemental machine, and means movable with the platen of the main typewriting machine and adapted to actuate said disconnecting means so that the printing devices of the supplemental machine will be actuated during a certain portion of the movement of the platen of the main typewriting machine and idle during another portion of the movement of the platen of the main typewriting machine.

40. The combination with a main typewriting machine comprising a platen, a carriage therefor, printing devices, and means for actuating said printing devices; of a supplemental machine arranged in the rear of the main typewriting machine and comprising a platen, a carriage therefor, printing devices, and means for actuating the printing devices; a series of members adapted to connect said actuating means of the main typewriting machine with the said actuating means of the supplemental machine; means common to all of said members and adapted to actuate the same to disconnect said sets of actuating means; an arm projecting rearwardly from the main typewriting machine carriage and adjustable in the direction of movement of

the carriage, and means carried by said arm and adapted to actuate the third mentioned means to connect and disconnect the first and second actuating means.

41. The combination with a main typewriting machine comprising a platen, a carriage therefor, printing devices, and means for actuating the printing devices; of a supplemental machine arranged in the rear of the main typewriting machine and comprising a platen, a carriage therefor, printing devices, and means for actuating the printing devices; an arm projecting rearwardly from the main typewriting machine carriage and adjustable in the direction of movement of the latter; and means on the supplemental machine carriage adapted to be engaged by said arm to lock said carriages together.

42. The combination with a main typewriting machine comprising a platen, a carriage therefor, printing devices, and means for actuating the printing devices; of a supplemental machine arranged in the rear of the main typewriting machine and comprising a platen, a carriage therefor, printing devices, and means for actuating the printing devices; an arm projecting rearwardly from the main typewriting machine carriage and adjustable in the direction of movement of the latter; an oscillatable member on the supplemental machine carriage adapted to be engaged by said arm to lock said carriages together; and stationary means coöperating with said oscillatable member to hold the same in engagement with said arm throughout the desired range of movement of the supplemental machine carriage, and then permit said oscillatable member to swing so as to become disconnected from said arm.

43. The combination with a main typewriting machine comprising a platen, a carriage therefor, printing devices, and means for actuating the printing devices; of a supplemental machine comprising a platen, a carriage therefor, printing devices, and means for actuating the printing devices; an arm on one of said carriages projecting toward the other carriage, and means on said other carriage adapted to coöperate with said arm to lock said carriages together.

44. The combination with a main typewriting machine comprising a platen, a carriage therefor, printing devices, and means for actuating the printing devices; of a supplemental machine comprising a platen, a carriage therefor, printing devices, and means for actuating the printing devices; an arm on one of said carriages adjustable in the direction of movement thereof and projecting toward the other carriage; and automatic means coöperating with said arm to lock said other carriage thereto during a predetermined portion of the movement of the first carriage.

45. The combination with a main typewriting machine comprising a platen, a carriage therefor, printing devices, and means for actuating the printing devices; of a supplemental machine arranged in the rear of the main typewriting machine comprising a platen, a carriage therefor, printing devices, and means for actuating the printing devices; members carried by the main typewriting machine and connecting said sets of actuating means for the printing devices; and means on one of said carriages adapted to coöperate with the other of said carriages to lock the same together.

46. The combination with a main typewriting machine comprising a platen, a carriage therefor, printing devices, and means for actuating the printing devices; of a supplemental machine arranged in the rear of the main typewriting machine comprising a platen, a carriage therefor, printing devices, and means for actuating the printing devices; members carried by the main typewriting machine and connecting said sets of actuating means for the printing devices; and an arm on the main typewriting machine carriage adapted to coöperate with the supplemental machine carriage to lock the carriages together.

47. The combination of a plurality of machines each comprising means for supporting a record sheet, printing devices cooperating with said means, and actuating means for the printing devices of said machines, of means controlled by one machine for connecting the said actuating means of the different machines together so that the printing devices of all of said machines may be actuated by the said actuating means of one of the machines.

48. The combination with a typewriting machine comprising a platen, a carriage therefor, printing devices, and means for actuating the printing devices; of a supplemental machine comprising a cylindrical platen movable in the direction of its axis and also rotatable; means adapted to connect said cariage with the platen of the supplemental machine so that the latter is moved by said carriage, and automatically operating means adapted to rotate the platen of the supplemental machine on its return movement.

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

ADOLPHUS S. DENNIS.

Witnesses:

ARCHER M. RICHARDS,

JUSTIN W. MACKLIN.