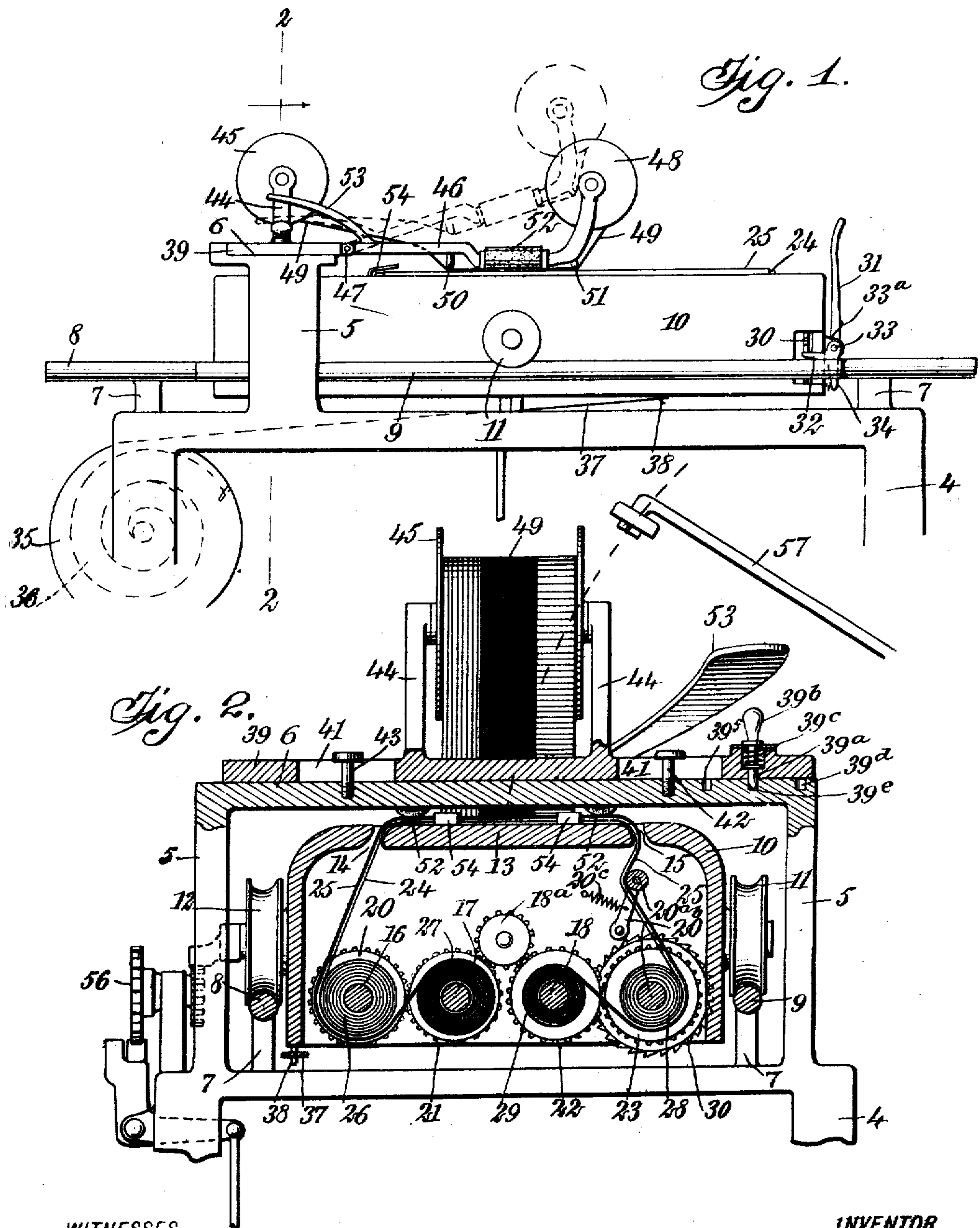


W. H. KOLVENBACH.  
TYPE CHECKER.  
APPLICATION FILED JUNE 7, 1907.

908,870.

Patented Jan. 5, 1909.

2 SHEETS—SHEET 1.



WITNESSES  
*L. G. Ford*  
*Walton Harrison*

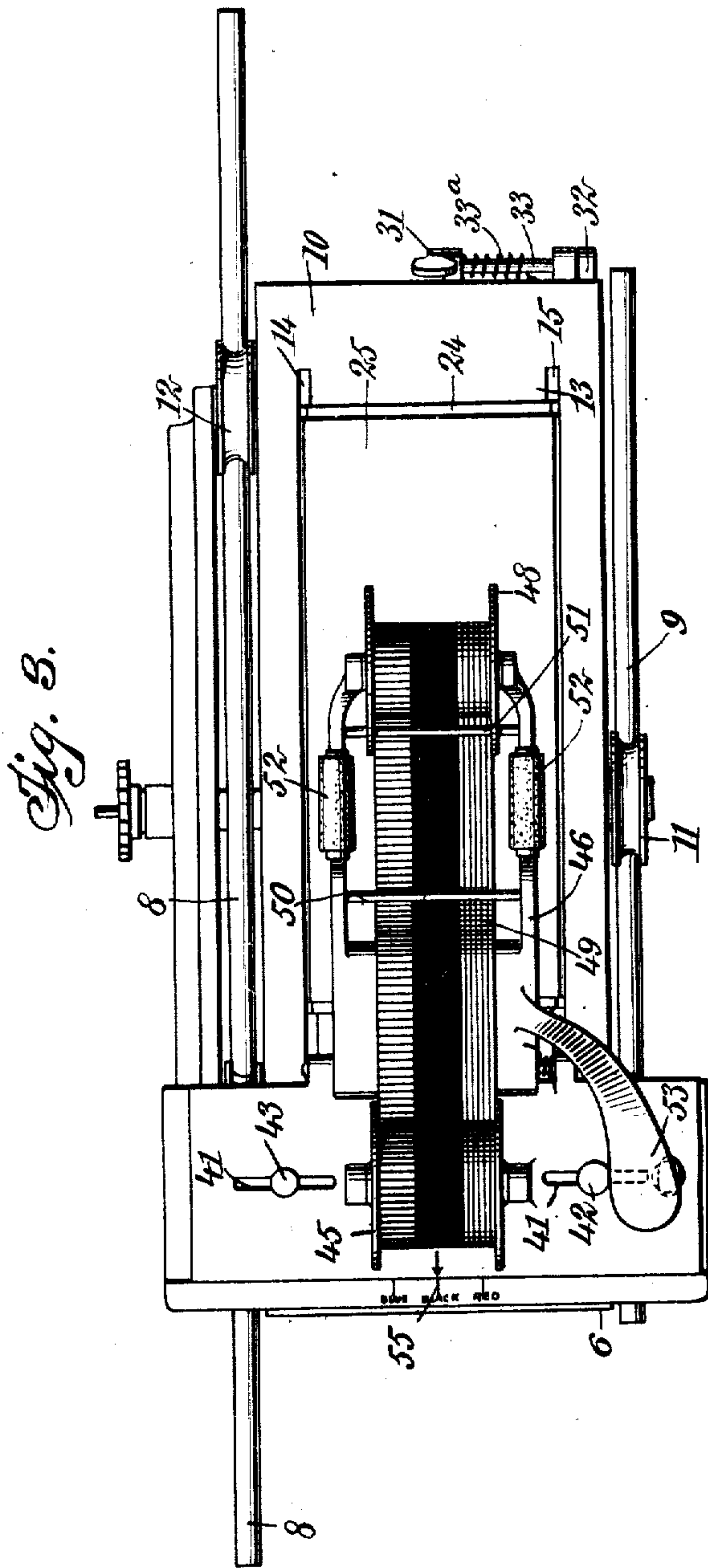
INVENTOR  
*William H. Kolvenbach*  
BY *Munn & Co.*  
ATTORNEYS

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# UNITED STATES PATENT OFFICE.

WILLIAM HENRY KOLVENBACH, OF NEW YORK, N. Y.

## TYPE-CHECKER.

No. 908,870.

Specification of Letters Patent.

Patented Jan. 5, 1909.

Application filed June 7, 1907. Serial No. 377,745.

*To all whom it may concern:*

Be it known that I, WILLIAM HENRY KOLVENBACH, a citizen of the United States, and a resident of the city of New York, borough  
5 of the Bronx, in the county and State of New York, have invented a new and Improved Type-Checker, of which the following is a full, clear, and exact description.

My invention relates to type-checkers, my  
10 more particular object being to produce a device somewhat similar in its action to a typewriter, but used for the special purpose of making out checks and the like, and of preserving a record of the same.

15 Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

20 Figure 1 is a fragmentary front elevation of my type-checker, showing the movable carriage, the mechanism mounted thereupon for holding the check, and the lever at the right for making line spaces in the writing  
25 upon the check; Fig. 2 is a section upon the line 2—2 of Fig. 1, looking in the direction of the arrow, and showing at the top the arrangement of the multi-colored ribbon employed in printing the checks, and also showing  
30 in the lower central portion of the figure the carriage containing the rolls of carbon paper and writing paper employed in keeping a permanent record; and Fig. 3 is a plan view of the apparatus, showing the same as ready  
35 for use.

Mounted upon a frame 4 are standards 5 connected together at their tops by a plate 6 integral therewith. Mounted upon posts 7  
40 are rails 8, 9 of cylindrical form, and supported by these rails is a carriage 10 provided with wheels 11, 12 for this purpose, these wheels resting directly upon the rails 8, 9.

The carriage 10 is provided with a portion 13 which serves as a platen and is partially  
45 bounded by slots 14, 15 extending longitudinally in the general direction of the length of the machine. Four reels 16, 17, 18, 19 are severally provided with a gear wheel 20, 21, 22, 23, these gear wheels meshing together so  
50 that the reels 16, 17 turn in opposite directions, and the reels 18, 19 also turn in opposite directions. A gear wheel 18<sup>a</sup> connects together the wheels 21, 22. At 20<sup>a</sup> is an idle roller mounted upon a swinging arm 20<sup>b</sup>, the  
55 latter being engaged by a spring 20<sup>c</sup>.

A ribbon or fillet of writing paper 24 is

partially wound upon the reel 16, so as to form a cylindrical body 26. A ribbon 25 of carbon paper passes partially around this cylindrical body and is wound upon the reel 17  
60 so as to form a cylindrical body 27. At the opposite side of the carriage the ribbons 24, 25 are similarly wound upon the reels 19, 18, so as to form cylindrical bodies 28, 29. Connected rigidly with the gear wheel 23 and  
65 with the reel 19 is a ratchet wheel 30, adapted to turn step by step and in so doing to turn the several gear wheels.

A hand lever 31 is disposed at one end of the carriage 10 and is adapted to move a pawl  
70 32. Both the lever and the pawl are rigid upon a rocking shaft 33 and are retracted by aid of a spring 33<sup>a</sup>. The pawl 32 is provided with a downwardly-projecting portion 34 serving as a limiting stop. When the upper  
75 end of the lever 31 is turned to the right, according to Fig. 1, the pawl 32 rises and turns the ratchet wheel 30 a distance represented by one of its notches.

A carriage motor 35 having the form of a  
80 revoluble disk, is supported upon the frame 4 and is provided with a spiral spring 36 for the purpose of turning it toward the left. A metallic band 37 is partially wound upon this disk and is connected by a fastening 38 with  
85 the carriage 10. The tension of the spring 36 tends to pull the carriage 10 slightly to the left, but not with sufficient energy to enable the carriage to travel except when assisted, as hereinafter described. This arrangement  
90 practically lightens the carriage and makes it easier to manipulate.

A slide 39 is mounted upon the plate 6 and is provided with slots 41 extending trans-  
95 versely of the general length of the machine, and screws 42, 43 extend through these slots for the purpose of limiting the play of the slide. These screws do not bind upon the slide but merely serve as guides for it.

A pawl 39<sup>a</sup> having a handle 39<sup>b</sup> is encircled  
100 by a spiral spring 39<sup>c</sup> and is provided with a point adapted to enter recesses 39<sup>d</sup>, 39<sup>e</sup>, 39<sup>f</sup> in the slide 39. By grasping the handle 39<sup>b</sup> and raising the pawl, the slide may be placed in either of three predetermined positions  
105 and, subsequently maintained where thus placed.

Two vertical standards 44 rise from the slide 39 and support a reel 45. A fork 46 is  
110 connected by pivots 47 with the slide 39 and is adapted to swing upon the pivots 47, as indicated by dotted lines in Fig. 1.



The free end of the fork 46 carries a reel 48. Partially wound upon this reel and partially wound upon the reel 45 is an ink ribbon 49 carrying inks of different colors, as indicated in Figs. 2 and 3; these colors may be blue, black and red.

Guides 50, 51 are supported by the fork 46 and serve not only to brace the fork but also to direct the ink ribbon 49 and to maintain the same always in proper position. Anti-friction rollers 52 are mounted upon the fork 46. A handle 53 is integral with the fork 46 and is used for tilting it, as indicated by dotted lines in Fig. 1. This the operator does by merely pressing his finger upon the handle.

Gage pins 54 are mounted upon the platen 13 (see Fig. 2), or, in other words, upon the upper part of the carriage 10 intermediate the slots 14, 15. Legends 55 (see left of Fig. 3) are employed for the purpose of indicating the positions occupied by the colors of the ink ribbon. That is to say, in inserting the ribbon these legends serve as a guide as to the manner in which the ink ribbon should be placed upon the reels. An escapement gear is shown at 56 and may be of ordinary construction, such, for instance, as is well known in typewriters for controlling movements of the platen.

At 57 is shown a type-bar of the kind ordinarily used in many typewriters, for instance, in the Williams typewriter, this bar and others of its kind being used for striking the check which is laid against the gage pins 54 (see Fig. 2). The type-bars, keys for actuating the same, the details of the escapement, and the motor mechanism for actuating the carriage, being old and well known, need not here be described in detail.

My device is used as follows: The ink ribbon being upon the reels 45, 48, as above described and as indicated in Fig. 3, and the ribbons 24, 25 of writing paper and carbon paper, being arranged as indicated, the machine is ready for service. Suppose that in a restaurant it is desired that a waiter shall give to a customer a check showing the nature of his indebtedness. The operator presses his finger upon the handle 53, raising the fork 46. He next lays a blank check upon the carbon ribbon 25, the edge of the check being flush with the gage pins 54. Suppose, further, that in the restaurant in question all purchases of commodities of special kinds are to be noted upon the check in inks of different colors. For instance, a check for cigars should bear blue lettering, for food black lettering, and for wine red lettering. By this means a customer being acquainted with the system can instantly detect any fraud or imposition as to the character of the indebtedness. If the purchase is for cigars, and consequently calls for blue let-

tering, the operator, in placing the check against the gage pins 54, grasps the handle 40 of the slide 39 and moves the slide into such position that the blue ribbon (indicating cigars) occupies substantially the center of the machine. In doing this the fork 46 would be moved slightly to the left, according to Fig. 2. The type-bars 57 are next caused to strike downwardly and in so doing they force the blue portion of the ribbon against the face of the check, printing thereupon the order or memorandum in blue letters and figures. The abbreviation used for indicating the particular waiter taking the order may, of course, be taken down at the same time. The strokes of the type-bars cause the paper ribbon 24 to receive corresponding impressions from the carbon paper 25.

When the operator wishes to "drop down" a line, he moves the top of the lever 31 to the right according to Fig. 1. This turns the ratchet wheel 30 a predetermined distance, and this causes the turning of all of the reels 16, 17, 18, 19. Consequently the check resting upon the ribbon 25 of carbon paper is moved to the left according to Fig. 2. The rollers 52 press upon the check slightly and as these rollers turn they offer little resistance to the movements of the check. The ink ribbon does not undergo any sidewise movements and hence, no matter if the entire face of the check be used for receiving memoranda, all of the letters and figures upon it will be of the single color desired.

The writing paper 24 being used step by step, as the different checks are made out, must show at all times a faithful facsimile record of the contents of the checks. Hence, the proprietor may every night, by inspecting the record or records made during the day, determine exactly the amount of business transacted, and compare this data with the condition of the cash drawer or of his coin box, as the case may be.

By using the machine above described, the opportunity for dishonesty or mistake upon the part of the waiters is reduced to a minimum, and the customer is always in a good position to point out any error which may have been made.

The paper ribbons 24, 25 are made comparatively thin and of lengths which do not render them cumbersome or difficult to operate by the gears 20, 23. As these gears each make the same number of revolutions, the objection might be raised that as the paper ribbons unwind from one reel and wind into another, difference in thickness of the paper thus wound and unwound might develop differences in the condition of the paper ribbons. This is avoided by the action of an idle roller 20<sup>a</sup>, a swinging arm 20<sup>b</sup> and a spring 20<sup>c</sup>. The spring constantly presses



the arm so that the roller takes up the slack of the ribbons and keeps the latter uniformly taut.

The escapement wheel 56 moves step by step in the manner well known in typewriters and this confers upon the carriage 10 a step by step motion.

I do not limit myself to the particular use of the machine above set forth, neither do I limit myself to any particular materials to be employed in its manufacture. Obviously the invention may be used in relations other than those above pointed out without departing from the spirit of my invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. The combination of a frame, a carriage movable relatively thereto, said carriage being provided with a platen having slots, mechanism mounted within said carriage and adapted to feed a ribbon outwardly through one of said slots and inwardly through another of said slots, said ribbon passing across said platen, means controllable at will for feeding said ribbon step by step, an ink ribbon, means for supporting the same at a point adjacent to said carriage, and means for impressing said ink ribbon toward said first-mentioned ribbon for the purpose of printing upon a check.

2. The combination of a frame, a slide mounted thereupon, means controllable at will for moving said slide into different positions relatively to said frame, a spool mount-

ed upon said slide, a fork extending from said spool, another spool mounted upon said fork, an ink ribbon wound partially upon both of said spools, a platen disposed adjacent to said fork and a typewriter key for striking said ribbon upon said platen.

3. The combination of a carriage provided with slots and with a platen disposed intermediate said slots, means mounted within said carriage for supporting a ribbon, said ribbon extending outwardly through one of said slots across said platen and inwardly through the other of said slots, means controllable at will for moving said ribbon step by step so as to bring new portions thereof successively into proximity with said platen, a frame disposed adjacent to said carriage, a slide mounted upon said frame and adjustable relatively thereto in the general direction of travel of said ribbon, means connected with said carriage for supporting an ink ribbon, the general direction of said ink ribbon crossing the general direction of said first-mentioned ribbon, a portion of said ink ribbon being parallel with said platen, and means for impressing intelligible characters upon said ink ribbon at a point adjacent to said platen.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM HENRY KOLVENBACH.

Witnesses:

WALTON HARRISON,  
JOHN P. DAVIS.