March 3, 1931. E. E. PHINNEY 1,794,540

CHECK WRITING MACHINE

Filed April 30, 1930 6 Sheets-Sheet 1

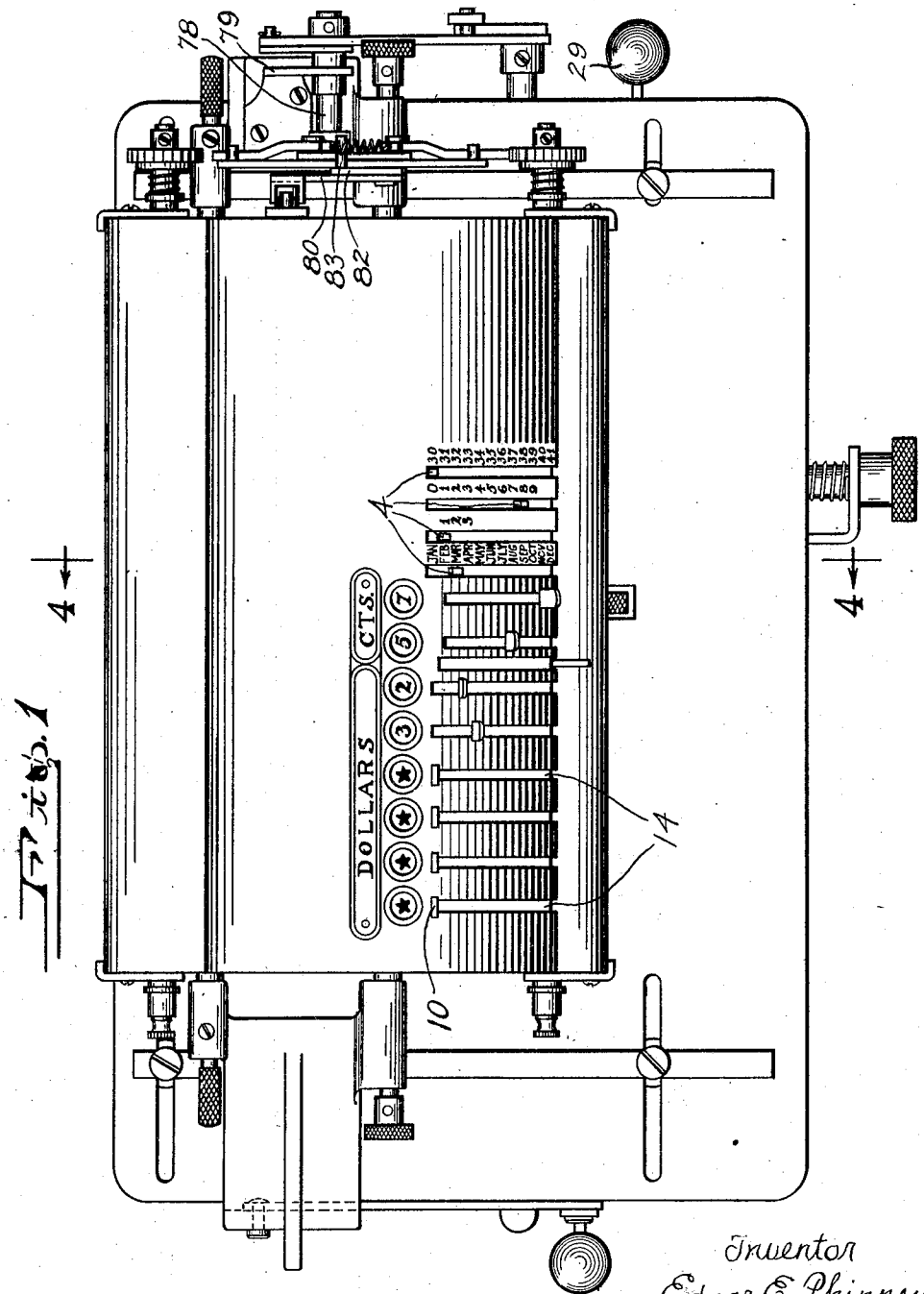


Fig. 1

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CHECK WRITING MACHINE

Filed April 30, 1930 6 Sheets-Sheet 2

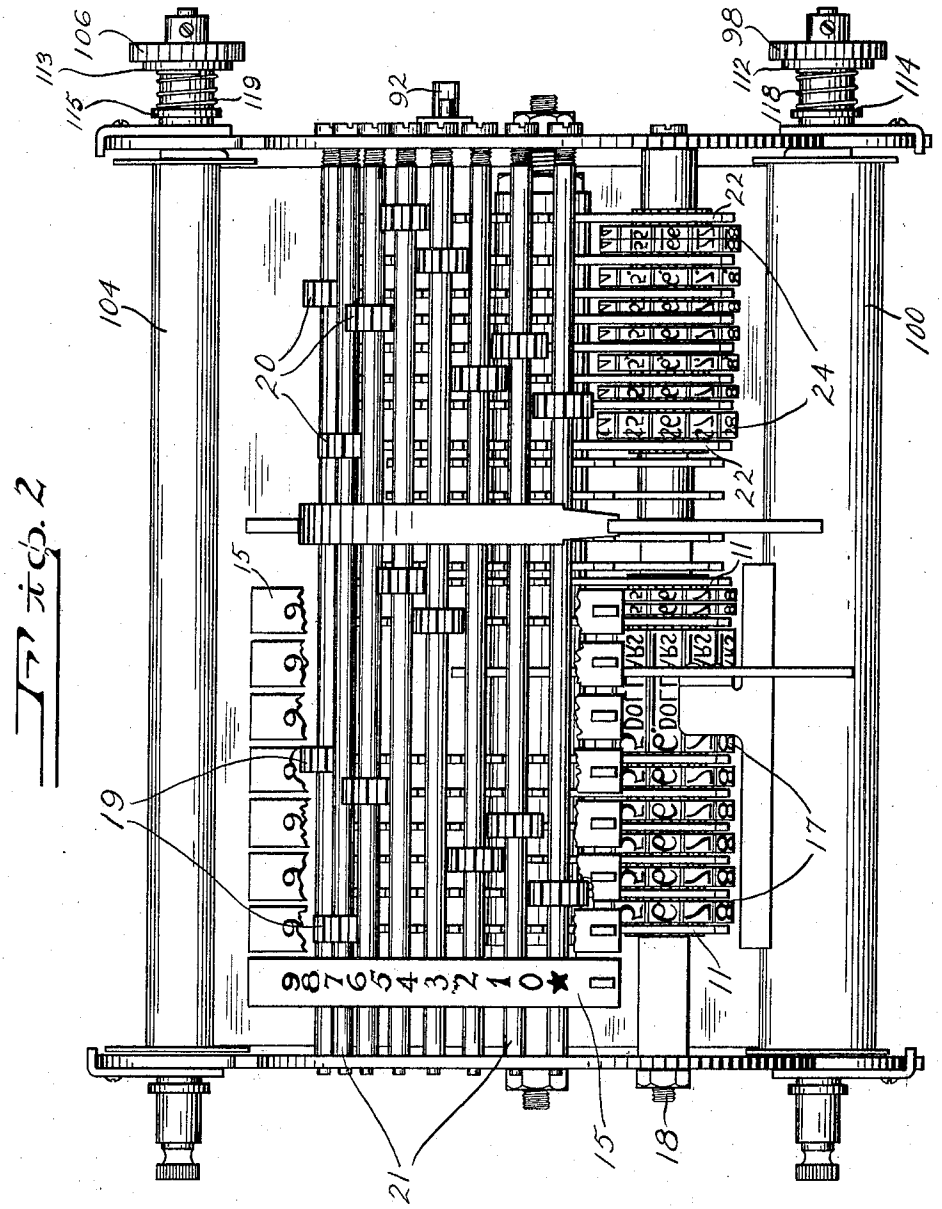


Fig. 2

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CHECK WRITING MACHINE

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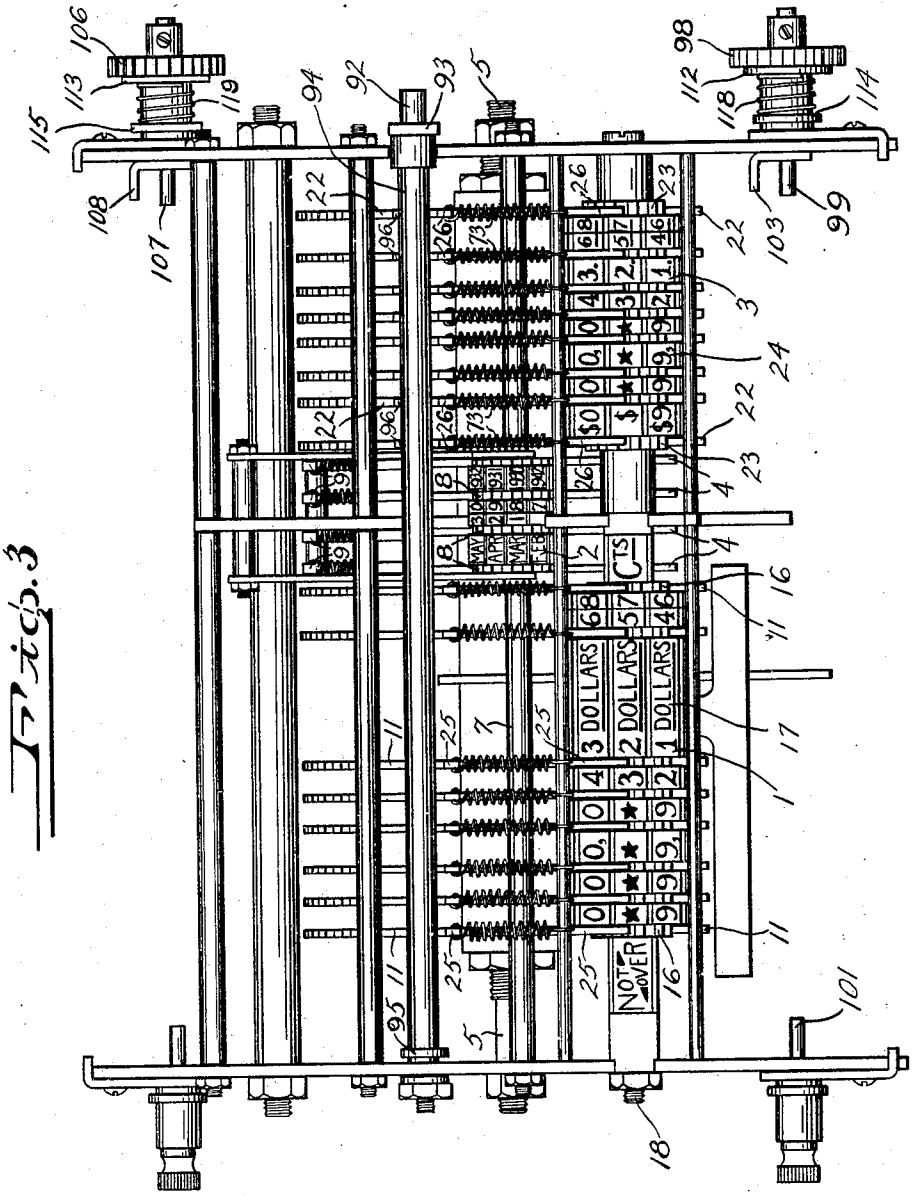


Fig. 3

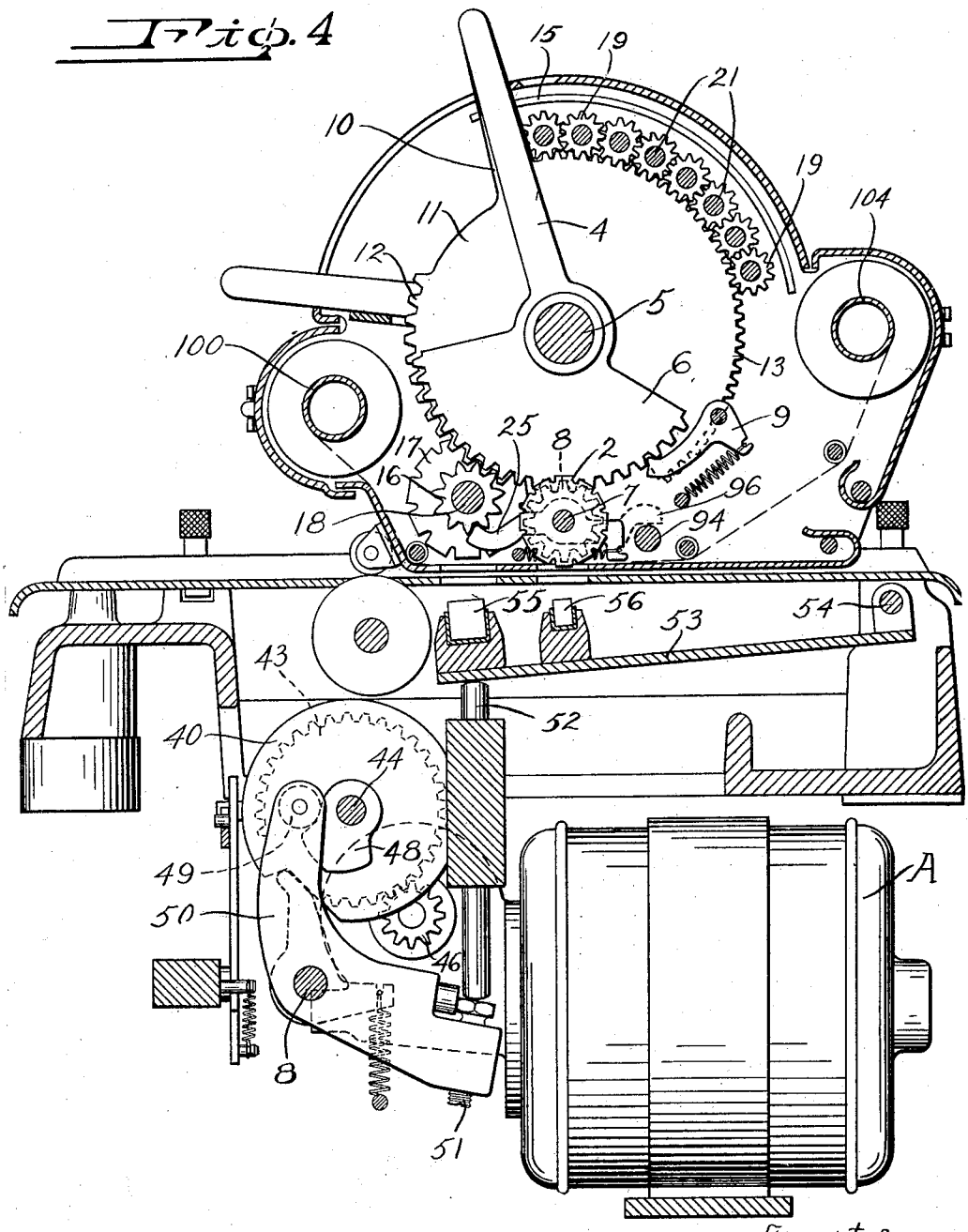
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CHECK WRITING MACHINE

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Fig. 4



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CHECK WRITING MACHINE

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Fig. 5

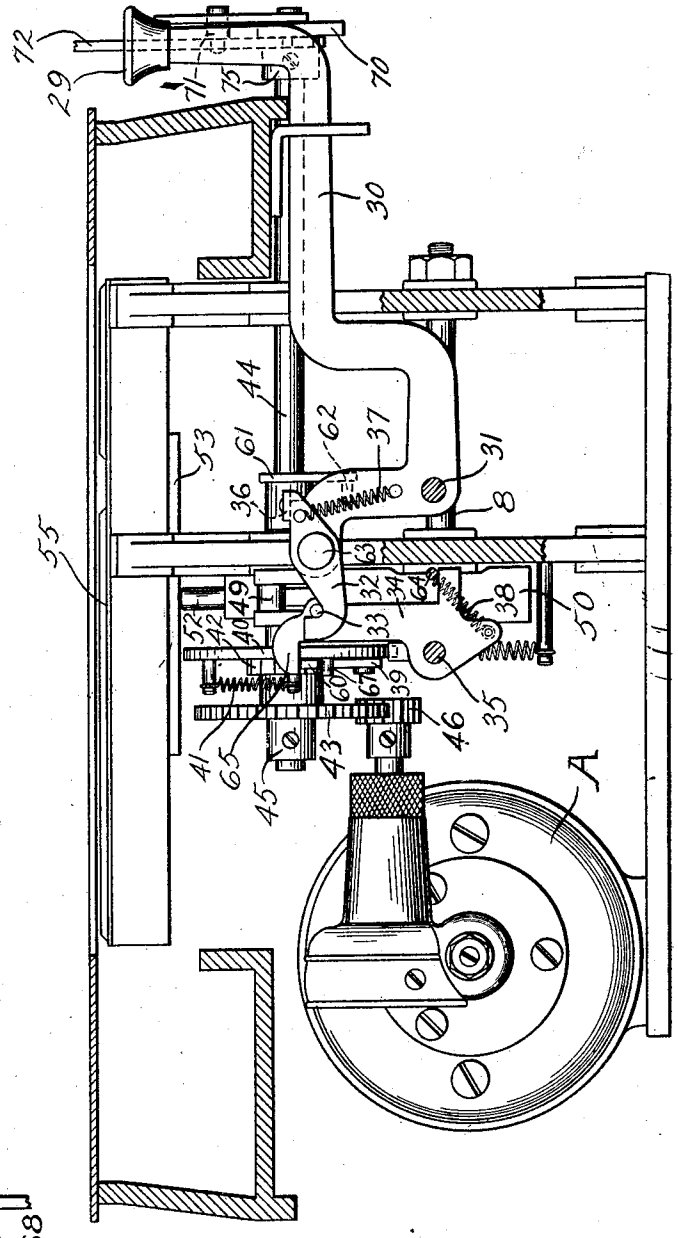
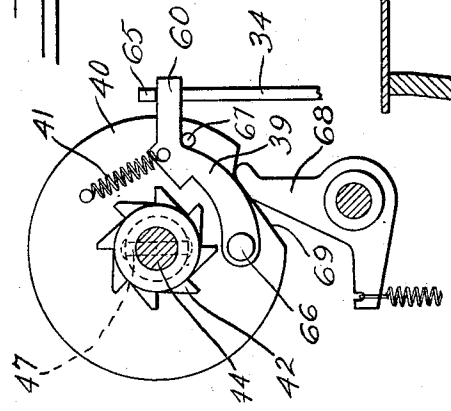


Fig. 6



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CHECK WRITING MACHINE

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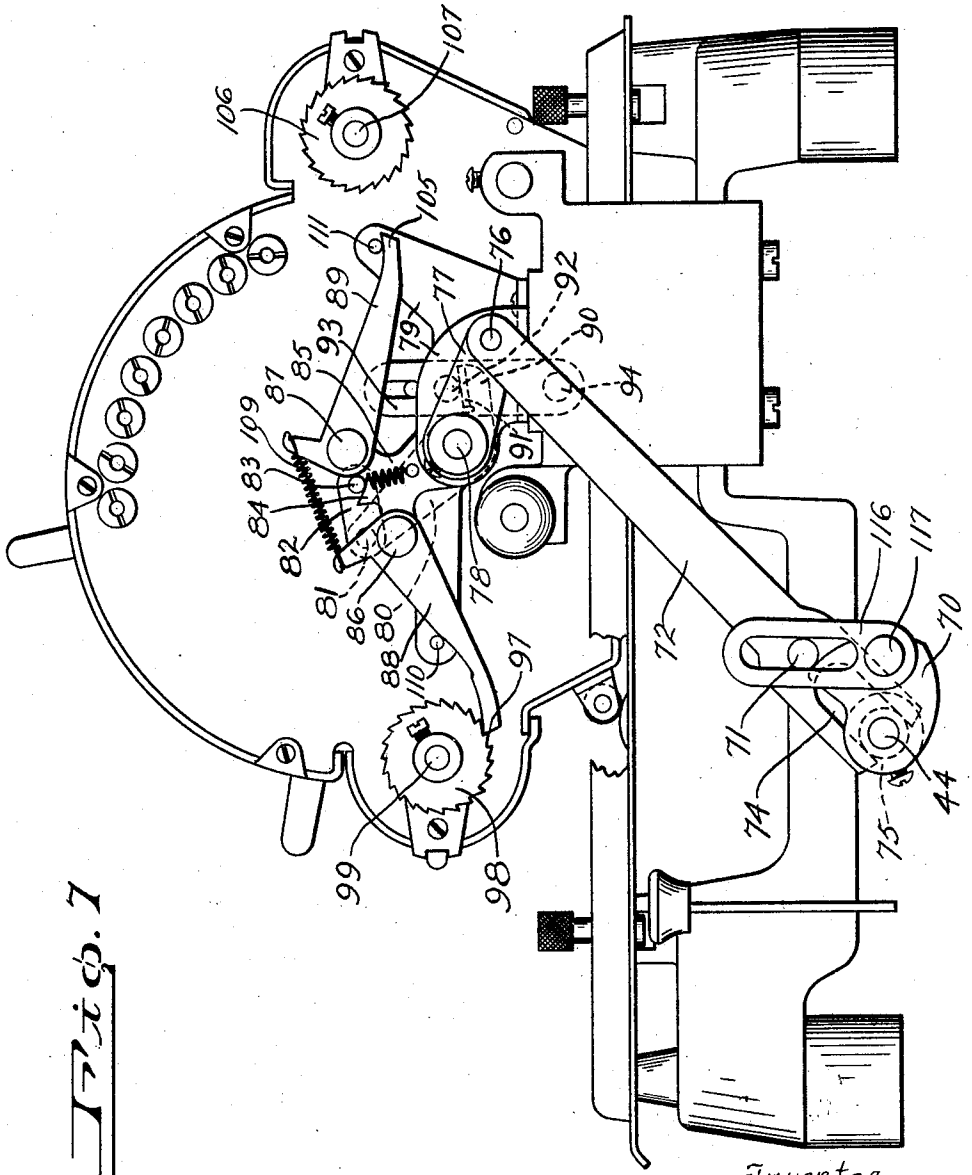


Fig. 1

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Patented Mar. 3, 1931 1,794,540

UNITED STATES PATENT OFFICE

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CHECK-WRITING MACHINE

Application filed April 30, 1930. Serial No. 448,599.

This invention relates to improvements in machines used for printing values and particularly to machines of the kind known as "check writing" or "check printing" machines, by which the amounts are filled in on bank checks, vouchers, etc.

An object of the invention is to provide improved means for filling in the date and amount of a check. Another object is the provision of improved means for aligning the printing wheels of such a machine. Another object is the provision of improved feed mechanism for the ink ribbon. Other objects and advantages will hereinafter appear.

The invention consists in the novel construction and combination of parts, as set forth in the appended claims.

In the accompanying drawings:

Figure 1 is a plan view of a machine embodying the invention.

Fig. 2 is a plan view of the type wheel housing unit with the cover plate removed.

Fig. 3 is a bottom view of the type wheel housing unit, showing the value and dating type wheels and their spring detent pawls.

Fig. 4 is a sectional elevation taken substantially on line 4—4 of Fig. 1 and showing the printing mechanism.

Fig. 5 is a front elevation showing the operating lever, drive, etc.

Fig. 6 is a detail view of the one cycle clutch member.

Fig. 7 is a right side elevation showing the ink ribbon feed mechanism.

The illustrated machine is adapted by means of the three sets of type wheels 1, 2, and 3 (Fig. 3) to fill in the date and amount of a check, voucher, or other form in the following manner:

Mar. 18, 1930

*** 32 Dollars 57 Cts $ *** 32.57

The dater type wheel set 2 (Fig. 3) is loosely mounted upon the shaft 7 and is adapted to print the date in the manner shown, each type wheel being independently set, or controlled, by its setting member, consisting of a lever 4 (Figs. 1, 3, and 4) loosely mounted on the shaft 5, and having one end terminating in a gear segment 6 meshing with a gear 8 on the respective type wheel of group 2, the position of the type wheels being shown by means of an indicator strip on the cover plate of the machine as shown in Fig. 1. Spring-tensioned detent pawls 9 (Figs. 3 and 4) are provided to hold the dater type wheels in exact printing position.

Extending upward through slots 14 cut in the cover plate of the machine as shown in Fig. 1 are the value type setting levers 10 loosely supported upon the shaft 5 (Fig. 4) and each lever forming a plate of disc 11 (Figs. 2, 3, and 4) having the gear segments 12 and 13 cut in their peripheries (Fig. 4).

Movement of the levers 10 along the slots 14 to the desired value, as shown on the graduated index strips 15, (Fig. 2) and read through the sight openings provided in the cover plate, as shown in Fig. 1, will cause teeth 12 of disc 11 meshing with gears 16 fast to their respective type wheels 17, of type set 1, to rotate said type wheels, about their supporting shaft 18, and bring the desired value type to printing position.

The corresponding value type wheels 24 of the type set 3 are supported upon the shaft 18 and are adapted to be rotated in unison with the type wheels of set 1 by means of the gears 19 and 20, (Fig. 2) fast upon the transverse shafts 21, journaled in the framing of the machine, in the following manner:

Teeth 13 of disc 11 mesh with gears 19 fast upon shafts 21 and rotate said shafts to thus transmit the motion through gears 20 to similar disc 22 (Figs. 2 and 3) loosely mounted upon shaft 5 and having engagement with gears 23 fast to corresponding value type wheels 24 of set 3 to thereby bring corresponding value type of set 3 to printing position.

Two sets of spring detent pawls 25 and 26 (Figs. 3 and 4) are provided, as shown. The pawls 25 engage with the type wheel gear members 16 of type set 1 and are constantly active, while the detent pawls 26 engage with the type wheel gears 23 of type set 3 and are automatically released after a printing operation as will be more fully described later.

Operating means

The desired value having been set up by the value-inserting levers 10 (Fig. 1) the operator depresses the operating key button 29 to set in motion the printing and automatic ink ribbon feed mechanisms as will hereinafter be described.

An operating lever 30 (Fig. 5) pivotally fastened to the framing of the machine at 31 has pivotally mounted thereon a pawl 32 one end of which terminates in a recess embracing a pin 33, fast to a lever 34 fulcrumed in the framing at 35. The pawl 32 is normally held as shown in Fig. 5 by means of lug 36 and spring 37.

The depression of the operating key button 29 causes the lever 30, rocking about point 31, to carry the pawl 32 in a clockwise direction and through engagement with the pin 33 rock with it (against the tension of spring 38) the lever 34. The upper end of lever 34 forms a hook 65 and engages with an arm 60 of a clutch pawl member 39 (Figs. 5 and 6) pivotally fastened at 66 to a clutch disc 40.

The clockwise movement of the lever 34 releases the clutch pawl member 39 allowing the same, under the influence of spring 41, to engage with a ratchet member 42. Ratchet member 42 and gear 43 are integral and loosely mounted upon the shaft 44, between the collar 45 and the clutch disc 40, and are driven by the motor A through the pinion gear 46. The clutch disc 40 is keyed to the shaft 44 by pin 47 (Fig. 6) and will, therefore, through engagement of pawl 39 with ratchet 42, transmit the power to the shaft 44.

The printing is accomplished as follows:

Fast to the shaft 44 is a cam member 48 (Fig. 4) adapted to engage with a roller 49 fast to a bell crank lever 50, supported on shaft 8, and rock said lever in a counter-clockwise direction about shaft 8. The other end of bell crank lever 50 engages, by means of an adjustable set screw 51, the striker rod 52 and drives the same upwards against the matrix bar support plate 53 to pivot the same about point 54 and bring the matrices 55 and 56 against their respective type wheels.

To insure against a reprint in the event that the operator fails to release the operating key button 29, an arm 61 (Fig. 5) is provided, pinned to the shaft 44 and having a pin 62 adapted to rise, during a cycle of operation, beneath the lug 36 of pawl 32 and rock same about point 63, to disengage pin 33, whereupon lever 34, under the influence of spring 38, will return to normal position against the stop pin 64, and hook end 65 will lie in the path of movement of the extended arm 60 of clutch pawl member 39.

Upon the completion of one revolution of clutch disc 40, the arm 60 of clutch pawl member 39 will contact with hook end 65 of lever 34 and rock said pawl, against tension of spring 41, about point 66, out of engagement with the ratchet 42. Pin 67, fast to the clutch disc 40, contacting with the lower face of arm 60 of pawl 39, will stop the parts in their normal position against overthrow due to momentum.

A spring tensioned latch 68 is also provided to enter the recess 69 of clutch plate 40 at the completion of a cycle, to prevent rebound of the parts due to their momentum and the tension of spring 41.

Automatic type aligner and ink ribbon feed mechanism

Fast to the shaft 44 (Figs. 5 and 7) is a cam member 70 adapted to operate a follower 71, fast to a connecting link 72 and held against cam edge of member 70 by means of the detent pawl springs 73 (Fig. 3), through the mechanism to be described.

One end of the connecting link 72 forms a bifurcation 74 and embraces the hub 75 of cam 70 and the other end is pivotally connected at 76 to an arm 77 fast upon a short shaft 78 (Figs. 1 and 7) said shaft being supported by means of a bracket 79 screwed to the framing of the machine.

Fast to the shaft 78 and supported thereon is a bell crank lever 80, having pivotally mounted on one arm at 81 a lever 82 having a stud 83 positioned to the right of a tooth 84 of a rock lever 85, mounted upon the shaft 78, as shown in Fig. 7. Said rock lever 85 has pivotally mounted thereon at 86 and 87 the levers 88 and 89 held in position by means of a spring 109 and the pins 110 and 111.

The arm 90 of bell crank lever 80 has a lug 91 positioned beneath a pin 92 fast to a lever 93 mounted upon a shaft 94 (Figs. 3 and 7) extending transversely of the machine and having its other end loosely mounted in the framing at 95.

The shaft 94 passes beneath the rearwardly extending arms 96 (as shown in Fig. 3 and indicated by the dotted part in Fig. 4) of detent pawls 26, (of type set 3) and holds said pawls out of engagement with the type wheel gears 23 against tension of spring 73.

During a cycle of operation the cam member 70, turning in a clockwise direction, will free the roller 71 and the springs 73 will rock the detent pawls 26 about shaft 7 into engagement with the type wheel gears 23 and the rearwardly extending arms 96 of said detent pawls will rock the shaft 94 downwardly about point 95, whereupon lever 93, fast to shaft 94, will cause pin 92 to depress lug 91,

and thus rock lever 80 and shaft 78 in a clockwise direction. Pin 83 will cause lever 85 and consequently levers 88 and 89 to also be rocked in a clockwise direction, and shaft 78 will, through lever 77, rock connecting link 72 downwardly and carry follower 71 to the smaller periphery of cam member 70. To insure a full return stroke of link 72 and the parts operated thereby, a link 116, pivoted to cam 70 at 117, is provided with a slot within which the follower 71 works. After cam 70 has left follower 71, the crank movement of the pivoted end of link 116 about shaft 44, will bring the end wall of the slot into engagement with the follower and pull the same substantially into engagement with the low point of cam 70. Subsequent rotation of cam member 70 will cam the follower 71 to the larger periphery again and drive connecting link 72 upward thereby rocking the shaft 78, through arm 77, in a counter-clockwise direction, and lever 80 fast to shaft 78 will rock lever 82 in a counter-clockwise direction, whereupon pin 83 engaging tooth 84 of rock lever 85 will rock same with it and end 97 of lever 88 mounted thereon will engage with the teeth of a ratchet member 98 fast to shaft 99, and rotate same in a clockwise direction.

The ink ribbon roller 100 (Figs. 2 and 4) is mounted at the right upon the shaft 99 and at the left side of the machine upon the spring plunger 101 (Fig. 3). Rotation of ratchet member 98 will cause a lug 103, fast to shaft 99 and engaging a recess in the roller 100, to rotate said roller and advance the ink ribbon from a similar roller 104 supported in similar manner at the rear of the machine.

When all of the ink ribbon is run off roller 104, the ribbon, being secured to said roller, will prevent further movement of roller 100 and cause the teeth of ratchet member 98 to prevent movement of the levers 88 and 85, whereupon the movement, as previously described, of lever 80 will cause pin 83 to cam over tooth 84 to a position to the left of said tooth.

A cycle of operation and the subsequent release of roller 71 will cause a movement of the parts as previously described, but rock member 85, having been held against return movement, will have positioned the end 105 (Fig. 7) of lever 89 into engagement with the teeth of a ratchet wheel 106 having connection with the roller 104 through shaft 107 and lug 108 (Fig. 3) and the springs 73 of detent pawls 26 will cause end 105 of lever 89 to rotate ratchet 106 in a counter-clockwise direction, to feed the type ribbon back upon the roller 104, this feed continuing until the end of the ink ribbon is reached. At this time roller 100, in preventing further movement of the ribbon, will hold roller 104 and ratchet 106, thereby causing the teeth of said ratchet to prevent movement of levers 89 and 85 so that lever 80 will rock pin 83, fast to lever 82, back to its original position to the right of tooth 84, thus providing a continuous feed for the ink ribbon.

To keep the ink ribbon smooth and against the type wheels, friction drag members are provided, consisting of the washers 112 and 113 keyed to the bearings 114 and 115, to prevent turning, and held against the face of ratchet wheels 98 and 106 by the springs 118 and 119 as shown in Figs. 2 and 3.

I claim:

1. In a check writer or the like, two sets of printing wheels, manipulative setting members connected each with a wheel of each set, constantly active spring detents for one set of wheels, releasable spring detents for the other set of wheels, striker mechanism including operating means, and a connection between the operating means and the releasable detents, adapted to engage and release said detents.

2. In a checkwriter or the like, a shaft, two sets of printing wheels on said shaft, manipulable setting members connected each with a wheel of each set, a second shaft, supplemental printing wheels thereon located between the two first-named sets, and manipulable setting members mounted on said first-named shaft and having each connection with a supplemental printing wheel.

3. In a checkwriter or the like, printing devices including type-wheel and ribbon feed mechanism, striker mechanism including a drive shaft, a cam on said shaft, a cam follower connected to said printing devices, and means on said shaft for moving the follower substantially radially of and into engagement with the cam.

4. In a checkwriter or the like, printing devices including type-wheel and ribbon feed mechanism, striker mechanism including a drive shaft, a cam follower connected to said printing devices, and a link having a crank connection with said shaft, engaging the follower and adapted to move the same into engagement with the cam.

Signed at Orange, in the county of Essex and State of New Jersey.

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