

March 31, 1931.

L. C. BISHOP ET AL

1,798,583

TIME STAMP

Filed May 20, 1930

8 Sheets-Sheet 1

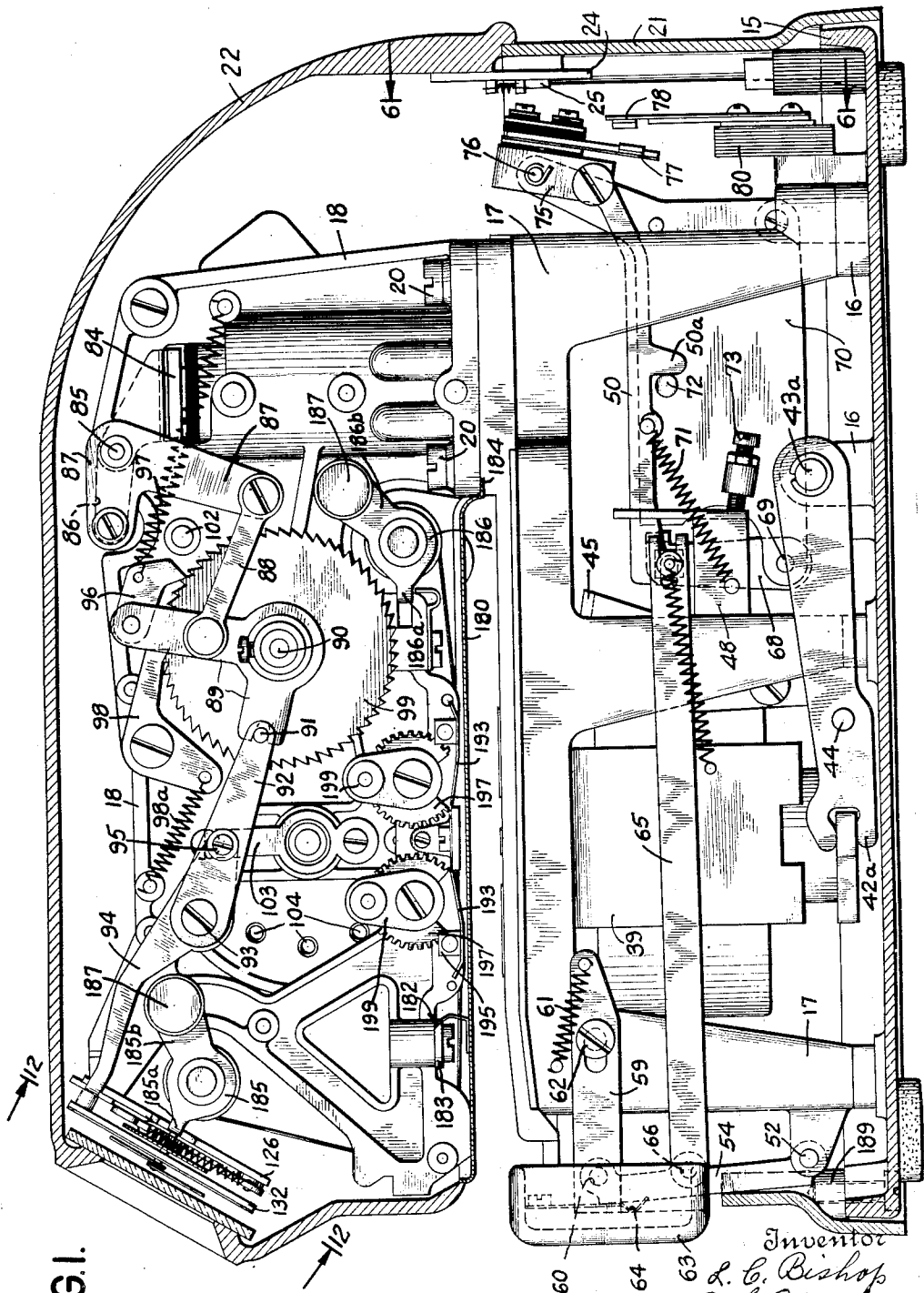


FIG. 1.

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8 Sheets-Sheet 2

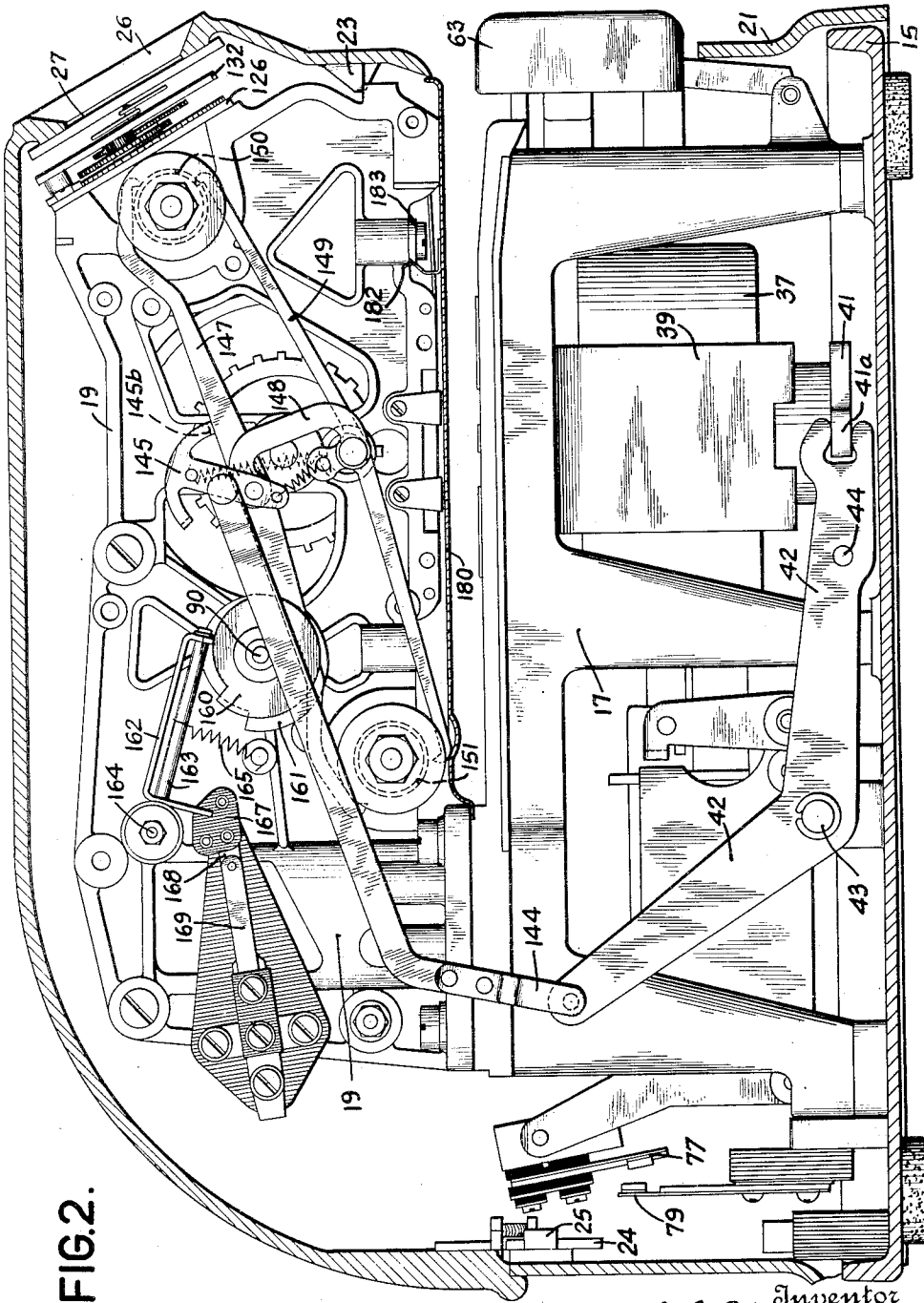


FIG. 2.

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8 Sheets-Sheet 3

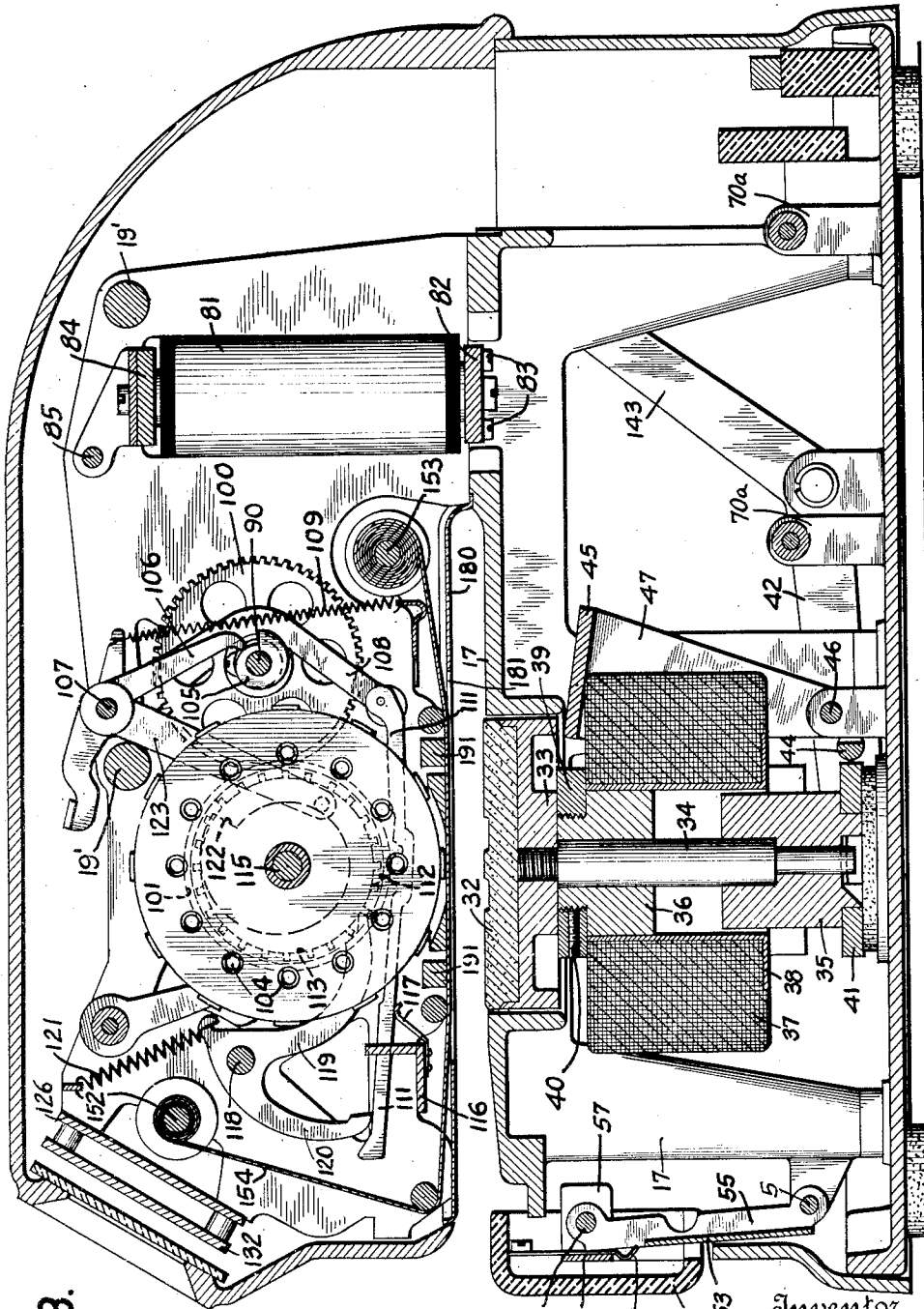


FIG. 3.

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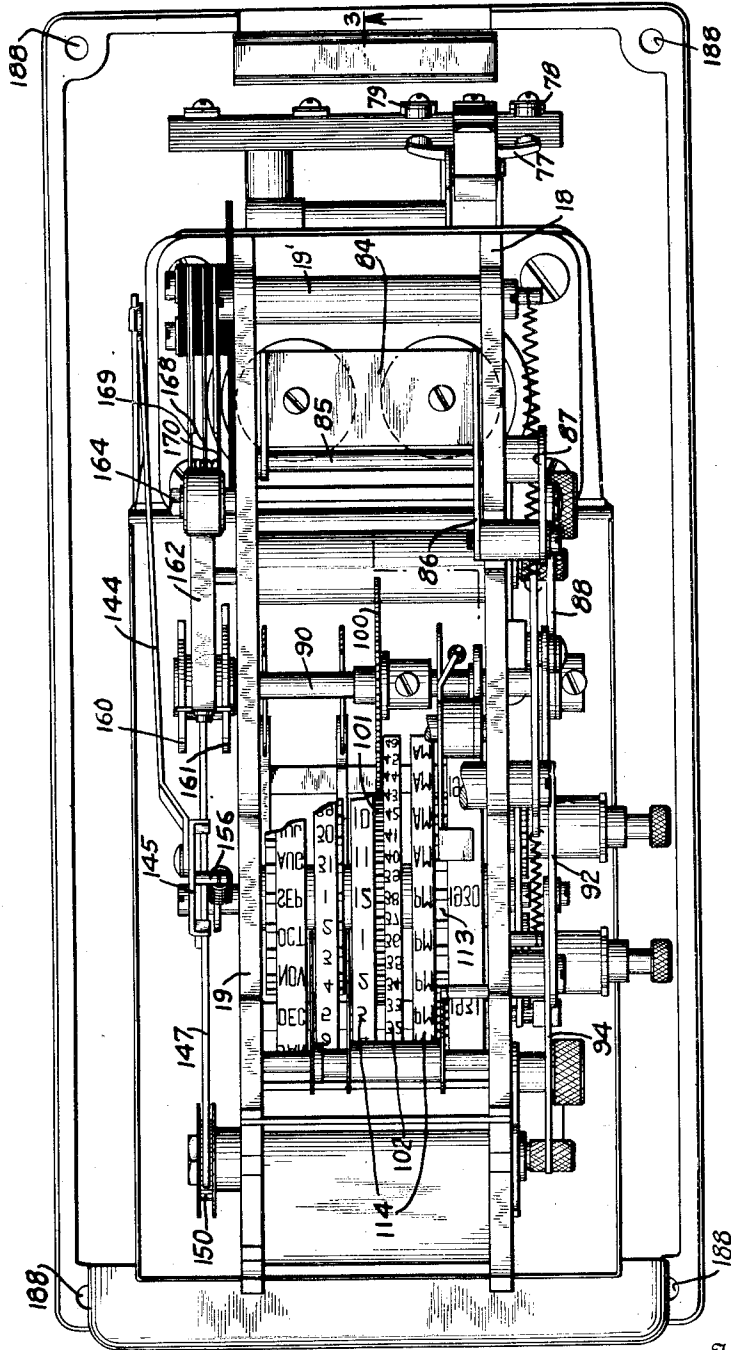
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FIG. 4.



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8 Sheets-Sheet 5

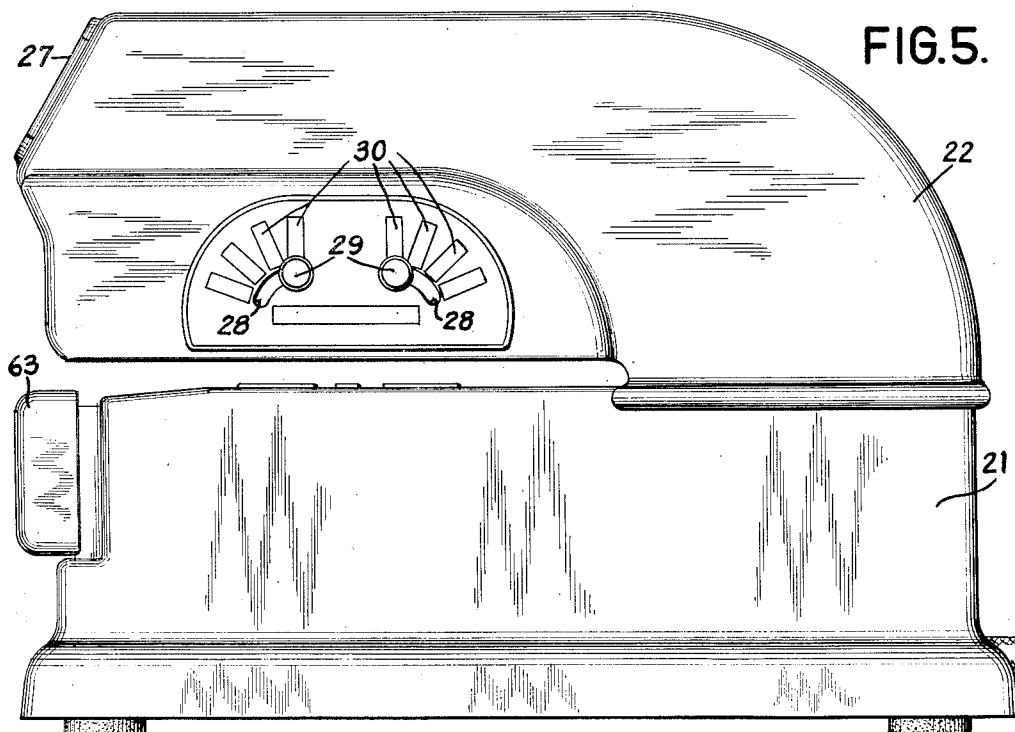
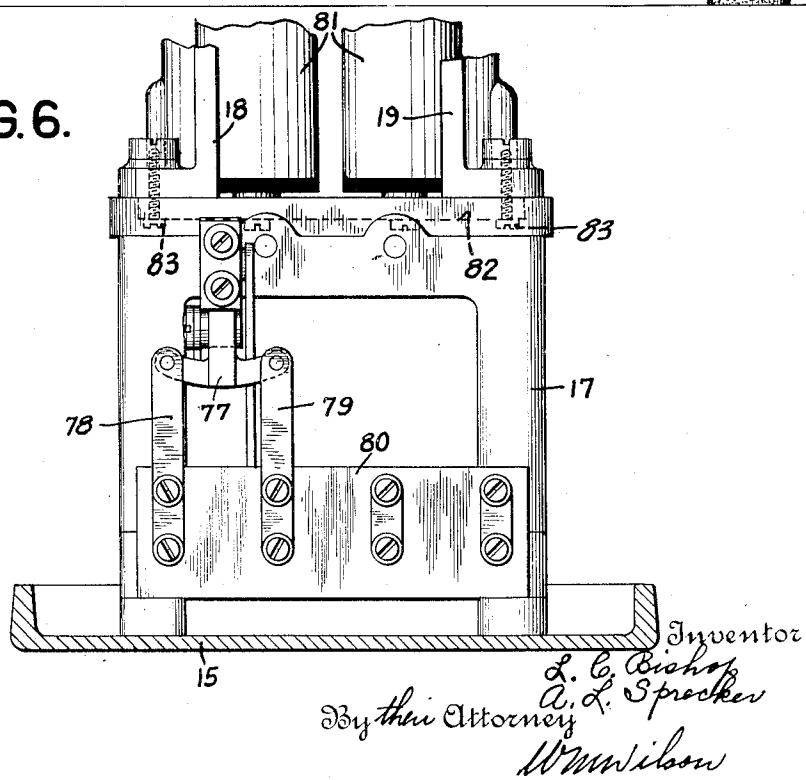


FIG. 6.



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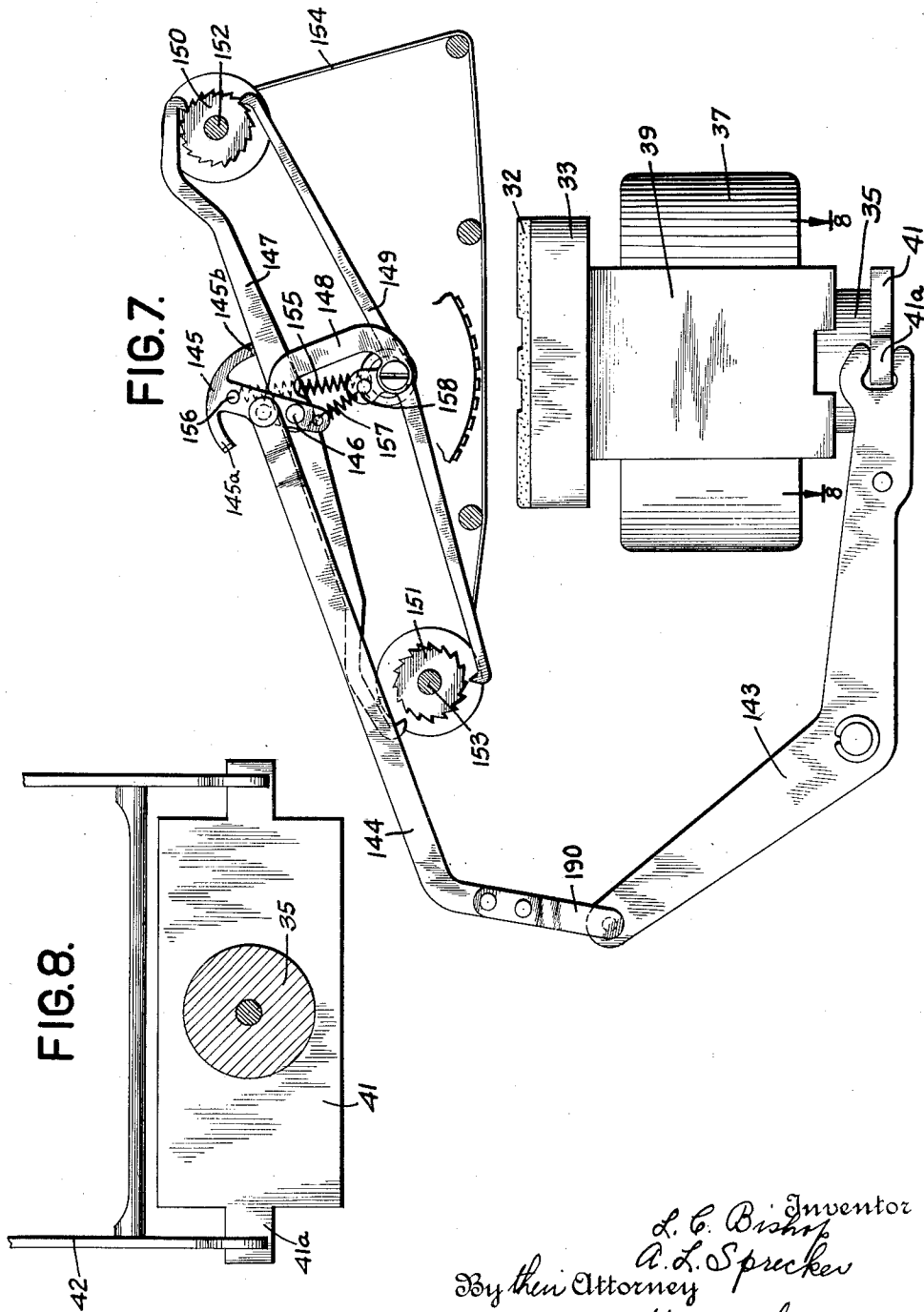
L. C. BISHOP ET AL

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8 Sheets-Sheet 6



March 31, 1931.

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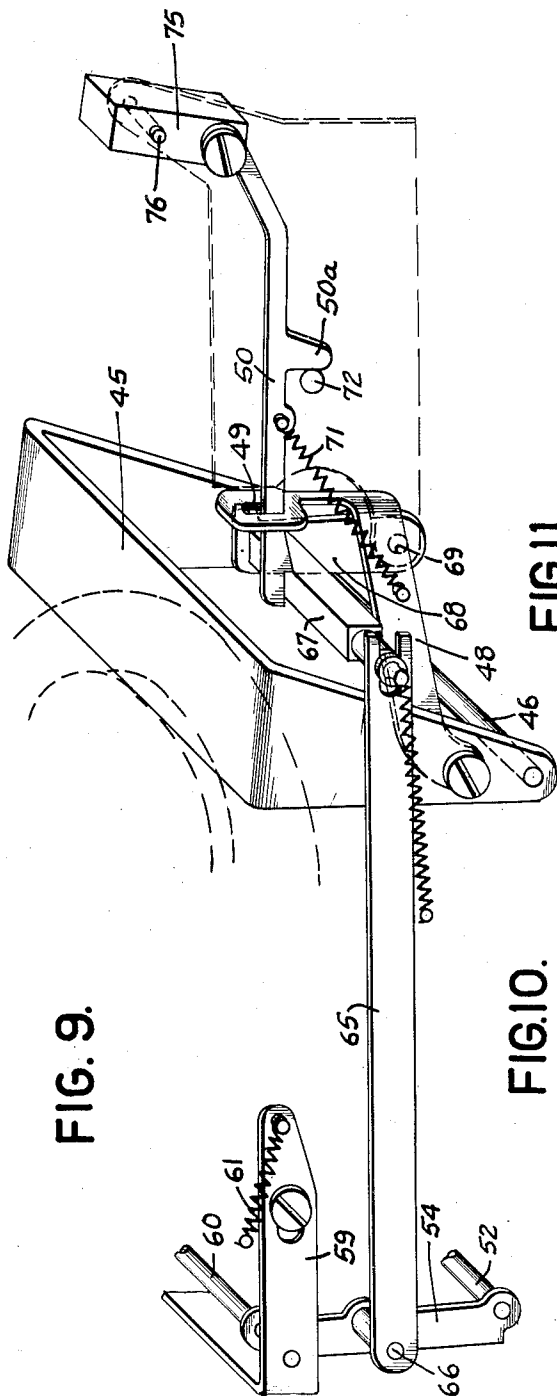


FIG. 9.

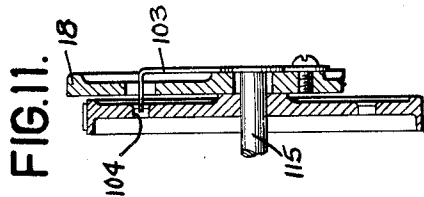


FIG. 11.

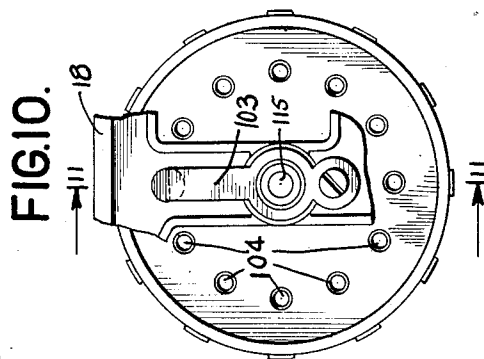


FIG. 10.

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8 Sheets-Sheet 8

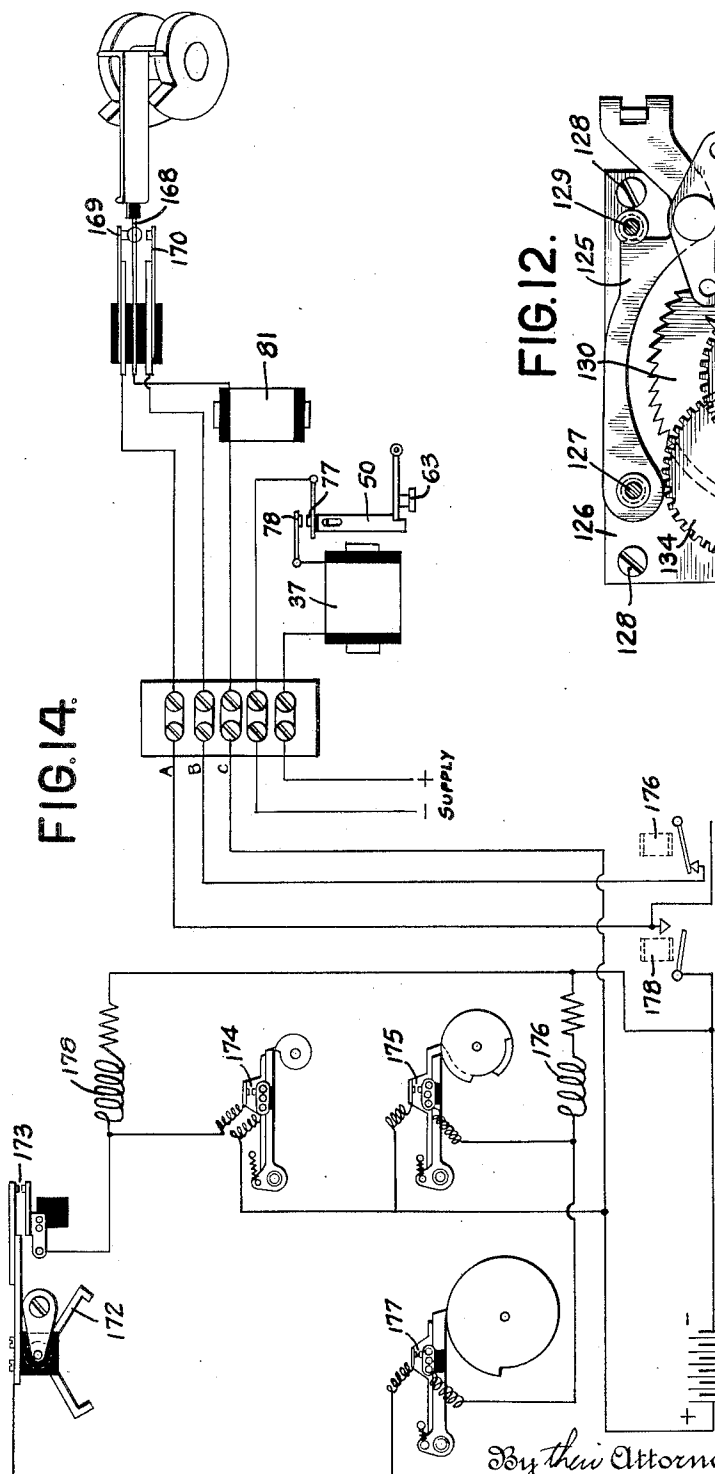


FIG. 14.

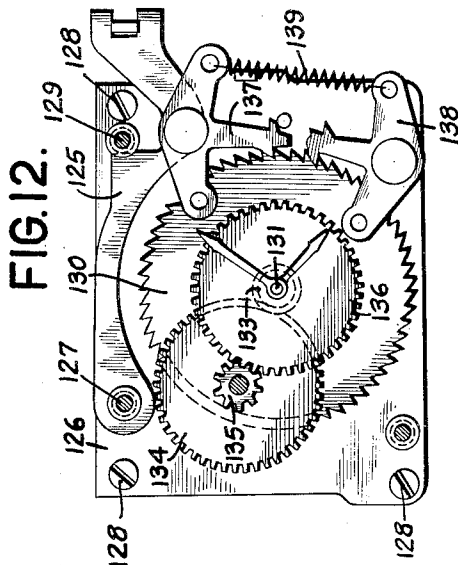


FIG. 12.

FIG. 13.

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UNITED STATES PATENT OFFICE

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TIME STAMP

Application filed May 20, 1930. Serial No. 453,982.

This invention relates to time stamps and more particularly to electric time stamps in which both the type members and impression members are actuated by electrical means.

5 The majority of time stamps in use at present require a manual operation of the impression member, such as a blow or pressure, to effect printing. This method frequently subjects the time stamp to unnecessary and undesired abuse as the operator often strikes the hammer of the operating member a sharp blow of more severity than is required, with deleterious results to the time mechanism. At other times the pressure applied to the impression mechanism is not sufficiently powerful to provide a clear registration. Other stamps that have electrically operated impression members are limited to placing the registration within a restricted area on the object to be stamped, due to the fact that the object to be stamped must be inserted into the stamp in a certain position to effect operation of the registration mechanism.

It is the purpose of this invention to provide a new and novel time stamp in which registration is effected by manual operation of the electric devices which will actuate the registration mechanism in such manner that variations in the force of the manual pressure will not vary the force of impact of the registration member but will always effect a clear and legible registration.

An object of this invention is to provide an improved time stamp in which the time indicating mechanism is removable as a unit from the printing mechanism without effecting operation of the printing mechanism.

Another object of this invention is to provide a new and improved manual control for effecting the printing of a registration in a time stamp.

Still another object of this invention is to provide an improved time stamp having a manually operable member for controlling an electric circuit to effect printing a registration on an object inserted in said stamp.

A still further object of this invention is to provide a printing machine having a new and improved manual control mechanism for effecting a printing registration, whereby

only a single printing registration will be permitted for each manipulation of the manual control mechanism.

Further and other objects and advantages will be hereinafter set forth in the accompanying specification and claims, and shown in the drawings, which by way of illustration show what is now considered to be the preferred embodiment of the invention.

Fig. 1 represents a left side view of the time stamp mechanism;

Fig. 2 represents a right side view of the time stamp mechanism;

Fig. 3 represents a section taken on line 3—3 of Fig. 4;

Fig. 4 shows a plan view of the time stamp mechanism, a part of the type wheels being cut away;

Fig. 5 shows a side view of the time stamp with the outside in place;

Fig. 6 is a detail view of the manually controlled contact members;

Fig. 7 shows a detail view of the ribbon feeding and reversing mechanism;

Fig. 8 shows a section taken on line 8—8 of Fig. 7;

Fig. 9 shows a detail large view of the latching and tripping mechanism that operate the control contacts;

Fig. 10 shows a detailed view of year wheel with its impositive locking mechanism;

Fig. 11 shows a section on line 11—11 of Fig. 10;

Fig. 12 is a detail view of the time indicating section of the stamp;

Fig. 13 shows a facsimile of the registration made by the stamp;

Fig. 14 shows the wiring diagram of the registering mechanism together with the diagram of the time control mechanism as connected to a three wire self regulating electric time system.

The time stamp may be provided with a base 15 which may be provided with various bosses 16 arranged at suitable positions on the base for pivotally supporting certain levers and for supporting a table-like supporting structure 17 which may be fastened thereto by screws (not shown) projecting through the bottom of the base and into the supporting

legs of said table-like supporting member. The supporting member 17 serves to support the entire registration mechanism. An arm comprising two supporting frames 18 and 19 and rigidly held by spacers 19' are fixed to the top of the sub base 17 by screws 20. These two supporting members serve to carry the entire type wheel section drive and time indicating section. This entire structure may be enclosed by a casing made up of two parts 21 and 22. The casing 22 is placed over the mechanism and is fixed to the base support 15 by means of screws projecting through the base at the four corners and entering threaded bosses (not shown) in each corner of the casing.

The casing 22 is placed over the upper part of the mechanism, its forward end being provided with bosses 23 which coact with the plates 19 and 20 and a latch 24 which engages a catch 25 fixed to the cover plate 21. The upper casing is provided at its front with an aperture 26, said aperture being enclosed by a projection glass 27 fastened to the inside of the casing by any improved method, said aperture being located opposite the dial of the time mechanism in order that the indication may be clearly seen and read. The casing 22 is further provided with arcuate apertures 28 through which handles 29 project. Spaces are provided at 30 where suitable indices may be shown relating to positions of certain type elements within the mechanism to be later explained. The handles 29 may be moved along the apertures 28 to be located opposite any of the index positions desired.

Registration mechanism

The printing mechanism is provided with a platen 32 of suitable resilient material, said platen being imbedded in a plate 33 which is screwed onto a cylindrical member 34 fixed to a movable core 35 and slidably mounted in a fixed core 36 (Fig. 3). The cores 35 and 36 are surrounded by a coil of wire 37 which is supported on a shield member 38 fixed to the fixed core 36. The fixed core is screwed into a yoke 39 and held in position by the set screw 40. The yoke 39 extends transversely across the machine, and is screwed to the upper part of the supporting frame 17 on either side of the platen. Fixed to the movable core 35 is a flat plate member 41 having extensions 41a at each end cooperating with bifurcations in the end of levers 42 and 42a (Figs. 1, 2 and 3). These levers are pivotally mounted to the base at 43 and 43a and are rigidly held in properly spaced relationship by a rod 44 fixed to both levers.

Cooperating with the shield of the coil 37 is an oscillated armature 45 pivotally mounted at 46 to a boss on the base plate of the machine. The armature 45 runs transversely of the machine and terminates on either side of the machine with downwardly projecting

and integral parts 47 pivoted as previously explained. Fixed to the left hand downwardly projecting part 47 is a member 48 having one end thereof formed upwardly, said upwardly formed part being provided with an aperture 49 through which projects a member 50. Pivotaly supported at 52 on each side of the forward end of the supporting structure 17 is a plate 53 having formed over ends 54 and 55 (Figs. 1 and 3). This plate runs transversely across the front of the time stamp and at its upper end supports a U-shaped member 56. One leg 57 of said U-shaped member is short and is pivotally supported at 58 to the left hand end of the plate 53 (Fig. 3). The other leg 59 is longer and is pivotally supported at 60 to the right hand end 54 of plate 53 (Fig. 1). The opposite end of this long leg is biased toward the left as viewed in Fig. 1 by a spring 61 and is slidably supported to the frame 17 by a pin and slot connection 62. A pusher plate 63 made of suitable insulating material is releasably mounted on the cross arm of the U-shaped member by means of a spring latch 64. A link 65 pivotally mounted to member 54 at 66 is bifurcated at its opposite end said bifurcation engaging a stud integral with a square rod 67 (Figs. 3 and 9). This rod is firmly fixed to the link 68 pivotally mounted at 69 to the plate 70 which in turn is rotatably mounted on bosses 70a (Fig. 1) on the base 15.

The member 50 which projects through the aperture 49 of the member 48 has a notched out portion at one end cooperating with the square rod 67. Members 50 and 48 are biased to the left and right respectively as viewed in Fig. 1 by spring 71 fixed to each of said members 50 and 48. A projection 50A integral with member 50 abuts a stud 72 fixed to plate 70 to limit the movement of said member to the left and an adjustable set screw 73 serves to limit the movement of the member 48 to the right. The right hand extremity of the member 50 as viewed in Fig. 1 is pivotally connected to an oscillating block 75 which in turn is pivotally mounted at 76 to the plate 70. Fixed to the block 75 and insulated therefrom is a contact member 77 and adjacent thereto and coacting therewith are contacting members 78 and 79 resiliently mounted on an insulating block 80 fixed to the base 15 (Figs. 1 and 6). Contact 78 may be connected to one side of a source of power and contacts 79 may be connected with the magnet coil 37. When the contact 77 closes the circuit with contacts 78 and 79 the magnet coil 37 becomes energized.

When the push plate 63 is moved to the right as shown in Fig. 1, member 54 rotates in a clockwise direction moving link 65 to the right and thus moving the square bar 67 to the right also. Due to the latching effect of the notched out portion of member 50 this

member is also moved to the right oscillating block 76 counterclockwise thus closing contacts 77, 78 and 79 and energizing the magnet coil 37. The energization of said coil draws the movable core 35 upwardly into the field of the magnet thus projecting the platen 32 upwardly against the type wheels positioned directly over the platen.

The magnetic field created by energization of the magnet coil 37 draws the armature 45 to the left about its pivotal mounting 46 (Fig. 3) thus rocking member 48 (Figs. 1 and 9) upwardly which carries the end of the member 50 upwardly disengaging its notched portion from the square bar 67. As soon as this disengagement is effected the action of the spring 71 draws the member 50 to the left thereby opening contacts 77, 78 and 79 and thus deenergizing the magnet coil 37. It will be seen therefore that only a momentary energization of the magnet 37 is effected and therefore a momentary thrust upward of the platen 32 results with one closure of the contacts 77, 78 and 79 regardless of how long the pressure on the pusher plate 63 may be maintained.

Printing head section

All type wheels and the drive therefor are located adjacent to and supported by the side frame members 18 and 19 and comprise a set of type wheels and other associated transfer and actuating mechanisms which are of old and well known construction and which therefore will be described very generally as they have no part in the present invention.

Two coils of a double pole magnet 81 are mounted to a yoke 82 which is in turn mounted to the two frame members 18 and 19 by means of screws 83 (Figs. 3 and 6). Associated and coacting with said magnet is an armature 84 mounted on a rod 85 journaled in the frame members 18 and 19. Integral with the armature is a lever 86 which is connected in adjustable relationship to a bell crank lever 87 fixed to the rod 85. Pivottally connected to this bell crank lever is a link 88 which is also connected to a bell crank 89 pivottally mounted on the shaft 90 which is journaled in the frames 18 and 19.

One arm of the bell crank is bifurcated and engages a stud 91 fixed to a lever 92 pivottally mounted to the frame 18 at 93. Said lever is held in fixed relation to a lever 94 by an adjustable connection 95, said last named lever being also pivottally mounted to the frame at 93. This lever 94 serves to actuate the time indicating mechanism which will be described later. The other arm of the bell crank has pivottally mounted thereon an actuating pawl 96 which is biased in a clockwise direction by the spring 97 which also biases the bell crank 89 in a clockwise direction about its supporting axis. A retaining pawl 98 is pivottally mounted to the frame 18 and biased in a clockwise direction

by a spring 98a. These two pawls both engage the teeth of a ratchet wheel 99 which is fixed to the shaft 90. The shaft 90 carries fixed thereto a gear 100 (Figs. 3 and 4) which meshes with a gear 101 fixed to the minute type wheel 102. The magnet 81 is energized once each minute by an electrical impulse such as is commonly used in most of the well known minute impulse electric clock systems. Each time said magnet is energized its armature 84 is attracted rocking the lever 86 clockwise and moving a bell crank 89 counterclockwise. The pawl 96 is moved a tooth and a half to the left thus passing over the tooth adjacent to the tooth with which it was previously engaged, and stops in position to engage this tooth, which it does when the armature is deenergized, being pulled to the right by the springs 97 and thus turning the ratchet wheel 99 clockwise until the pawl 96 abuts the stud 102 which is mounted to the frame 18. Thus the minute type wheel is advanced each minute and said type wheel is provided with type characters on its periphery to designate the 60 minutes of the hour, said type wheel making one complete revolution per hour.

The operation of the type wheels adjacent to the minute wheel is accomplished by well known types of transfer mechanism. The hour wheel being advanced one step for each revolution on the minute wheel, the day wheel being advanced one step for each revolution of the hour wheel, and the month wheel being advanced one step for each revolution of the day wheel. The year wheel is set manually and is held by an impositive spring latch 103 fastened to the frame 18 and cooperating with the apertures 104 in the year wheel 90 (Figs. 1, 3, 10 and 11). As the transfer mechanism is of old and well known design and as it takes no part in the present invention, a brief description of the mechanism for one or two of the wheels will suffice to show how the transfer of the remaining wheels operate. Cam 105 is fixed to the shaft 90 which, as has been previously explained, makes one revolution each minute. Cooperating with this cam is a cam wiper 106 pivottally mounted on a fixed shaft 107. Also pivottally mounted on said shaft but rigidly connected with said cam wiper 105 is a link 108, said link being biased in a clockwise direction by a spring 109 fixed to a projection of said link at one end and to an anchor strip at the other end, said strip extending transversely across the machine and being fixed to the side frames 18 and 19. The cam wiper 106 is thus also biased in a clockwise direction. Pivottally mounted to the opposite end of the link 108 is a pawl member 111 having a projection 112 which engages notches or teeth in the periphery of a notch wheel 113 which is integral with the hour wheel 114 (Fig. 4). In Fig. 4 it will be

noted that both the hour wheel and the A. M. and P. M. wheels are designated by reference numeral 114. These two wheels are mounted on each end of the sleeve which rotates about the arbor 115 and therefore rotate in unison.

The minute wheel 102 rotates on this sleeve between these two first mentioned wheels and independently thereof. The pawl member 111 extends through notches in the angle plate 116 mounted to the frame which serve as guides to keep said pawl member in alignment with the notched wheel 113. Attached to the angle plate is a leaf spring 117 which biases the pawl member 111 upward against the wheel 113. Pivottally mounted on an arbor 118 is a retaining pawl having an arm 119 engaging the teeth in the notched wheel 113 to lock the type wheel from movement in either direction. This pawl has an arm 120 integral therewith and in the plane of the pawl member 111. The end of the arm 120 cooperates with the end of the pawl 111 and is biased in a counterclockwise direction by a spring 121 as is also the arm 119. As the shaft 90 rotates the cam 105 in a clockwise direction the cam follower 106 is moved in a counterclockwise direction thereby moving the pawl member 111 to the right as viewed in Fig. 3. The left end of the pawl member 111 cooperates with the arm 120 and is cammed downwardly as it is moved to the right thus withdrawing the projection 112 from the notches of the wheel 113.

The rise of the cam 105 is sufficient to withdraw the end of the lever 111 to the right of the arm 120 thereby allowing the projection 112 to engage the adjacent tooth of the notched wheel. When the cam follower 106 drops from this rise the pawl member 111 is projected to the left by the action of spring 109 and the end of said pawl member abuts the end of the arm 120 thus turning said arm clockwise about its pivot 118 and withdrawing the locking arm 119 from cooperation with the notched wheel 113. Thus, the projection 112 may engage the notched wheel 113 and move it in a clockwise direction as said wheel is now unlocked.

When the arm 111 moves a sufficient distance to the left to rotate the minute type wheel far enough to bring the next hour designation on the type wheel into printing position, the arms 120 and 111 will have become disengaged and the arm 119 will be snapped back into locking position by the spring 121 thus locking the type wheel against movement until its next advance by the pawl member 111.

Fixed to the hour type wheel is a cam 122 and coacting therewith a cam wiper 123 is pivottally mounted on the shaft 107 and rigidly attached to a lever and transfer pawl of the same type as the lever 108 and the pawl 111. Therefore as this cam wiper 123 drops from the high point of its coacting cam

at each revolution of the hour wheel the transfer mechanism is operated in the same manner as previously described to advance the hour wheel. By a similar cam fixed to the day wheel and similar cooperating transfer mechanisms the month wheel is advanced for each revolution of the day wheel.

Adjacent to the type wheel and in printing position above the platen are two square bars 191 (Fig. 3) which are adapted to have fixed to each face type or electro-plates bearing a person's name, title or other words such as Rec'd by —, Answered by —, Paid, Attended to, etc. Each end of these bars are provided with axes journaled in the frame members 18 and 19 to permit said bars to be rotated so as to bring any one of the faces of each bar into printing position. Said bars are held in their selected printing position by impositive latches comprising flat springs 193 (Fig. 1) cooperating with the flat sides of squared members 195 and fixed to the axes of the squared bars.

Also fixed to said axes and behind said squared members are pinion gears which mesh with the gear sectors 197 and pivottally mounted to the frame and having affixed thereto crank arms 199. Knurled thumb screws 29 engage threaded holes in said crank arms and extend through the apertures 28 of the casing 22 (Fig. 5). The indicia on the spaces 30 will correspond to the type on the squared bars so that the knurled thumb screws or handle 29 may be moved to a position adjacent to one of the spaces and the squared bars will be turned by the gears 197 to the corresponding type to printing position.

Time indicating mechanism

The end of the lever 94 cooperates with bifurcations in the end of the pivot member 125 pivoted to a plate 126 at 127 (Fig. 12) said plate being mounted to the side frames by the screws 128 and carrying the dial works and dial for the indicating mechanism visual through the aperture 26. The pivoted lever 125 cooperates with a slotted stud 129 to confine its movement to a single plane. A ratchet wheel 130 is fixed to an arbor 131 which is journaled in the plate 126 and the plate 132 (Fig. 1) on which the dial is mounted. A pinion 133 also fixed to this arbor meshes with gear trains 134, 135 and 136 which constitute the usual reduction gear train from a minute hand arbor to an hour hand arbor. The gear 136 is rotatably mounted on the arbor 131 and carries on it a hub attached to which is an hour hand, the minute hand being fixed to the arbor 131. An actuating pawl 137 is pivottally mounted and carried by the lever 125 and engages the teeth of the ratchet wheel 130. A retaining pawl 138 is pivottally mounted on the plate 126 and also engages the teeth of the ratchet wheel 130.

The pawls 137 and 138 are biased by a spring 139 which tends to throw both pawls into contact with said ratchet wheel.

As previously explained lever 94 oscillates each time a minute impulse energizes the magnet 81 thereby oscillating the lever 125 and causing the pawl 137 to advance the ratchet wheel 130 at each oscillation of said lever. The hands are thus advanced with the type wheels so that the time as indicated by the type wheel may be read from the dial.

Ribbon mechanism

The ribbon mechanism is actuated from the platen actuating mechanism in the following manner. A lever 42 pivotally mounted at 43 (Fig. 2) has one end bifurcated and engaging a projection 41a on the flat plate member 41 and the other end releasably connected to a link 144 which is pivotally connected to a T-shaped member 145. A stud 146 is rigidly mounted on this T-shaped member 145 and pivotally mounted to said stud are links 147 and 148. The T-shaped member 145 is biased in a clockwise or counterclockwise direction by a spring 155 attached to an anchor pin 156 fixed in said member, according to whether said anchor pin is to the right or left respectively of the pivot 146 as shown in Fig. 7. The cross arm of this T-shaped member have each extremity 145a and 145b formed over to intercept the plane of the link 147 which limits the rotation of the T-shaped member 145. The link 147 has each end formed into pawls adapted to cooperate with the ratchet wheels 150 and 151, said pawls comprising the actuating pawls of the ribbon feeding mechanism. As viewed in Figs. 2 and 7 the formed portion 145b is abutting the lever 147 thus holding the end of said lever in engagement with the ratchet wheel 150 and out of engagement with the ratchet wheel 151, under the influence of the spring 155, as the anchor pin 156 is to the right of the pivot 146. To the lower end of the link 148 is pivoted a link 149 having each of its ends formed into pawl members also adapted to engage the ratchet wheels 150 and 151. These comprise the retaining pawls of the ribbon feeding mechanism. A spring 157 is attached at one end to the T-shaped member 145 below the pivot 146 and at its other end to a projection 158 integral with the lever 149 so that when said T-shaped member is rocked to the right as shown in Fig. 7 the spring 157 biases the projection 158 to the left thus rocking the lever 149 counterclockwise engaging its right hand pawl shape end with the ratchet wheel 150. The ratchet wheels 150 and 151 are fixed to bushings which are journaled in the side frame 19. One end of the arbors 152 and 153 bear in said bushings and are removably keyed to said bushings so that they turn when the ratchet wheel is turned. The other end of the arbors are journaled in removable

members 185 and 186 which are held in position by means of projections 185a and 186a respectively, integral with said members, which engage slots in the side frame 18, and by projections 185b and 186b which are held rigidly by knurled thumb screws 187 which engage threaded holes in the side frame 19. Each time the magnet coil 37 is energized the core 35 is drawn upward oscillating the lever 143 and drawing the link 144 to the left as shown in Fig. 7 thus also drawing the link 147 to the left and causing the ratchet wheel 150 to turn clockwise and wind the ribbon on the arbor 152, unwinding it from the arbor 153. When the ribbon is completely unwound from the arbor 153 the ratchet 150 is unable to turn further inasmuch as said ribbon is attached to the arbor 153. Thus when the link 144 moves to the left it cannot draw the link 147 to the left with it, so that the pivot 146 is held stationary.

The pull of the link 144 therefore pulls the T-shaped member 145 counterclockwise about its pivot 146 and when the anchor pin 156 passes to the left of the pivot 146 the spring 155 acts to further bias the member 145 in a counterclockwise direction so that the formed end 145a strikes the lever 147 oscillating it counterclockwise thereby throwing the left hand end of said lever into engagement with the ratchet 151 and disengaging the right hand end from the ratchet 150. This movement of the member 145 about its pivot throws its lower end to the right so that the pull of the spring 157 causes the lever 149 to oscillate clockwise bringing the left hand end of said lever into engagement with the ratchet wheel 151 and disengaging the right hand end from the ratchet wheel 150. With the parts now in the position just explained, subsequent oscillations of the link 144 causes the ribbon to be fed in the reverse direction. When the ribbon becomes completely unwound from the arbor 152 the link 147 and therefore the pivot 146 is held stationary so that the upward thrust of the link 144 tips the member 145 to the right and the parts resume the position as shown in Fig. 7 to again reverse the ribbon feed. The ribbon is protected by a ribbon shield 180 (Figs. 1, 2 and 3) having an aperture 181 therein (Fig. 3) to permit the platen 32 to impact against the type. Said ribbon shield is releasably held in position by means of spring clips 182 fixed to said shield and engaging extensions 183 (Figs. 1 and 2) of the plate 116 (Fig. 3) which project outwardly from the side frames 18 and 19. The opposite end of the ribbon shield engages a slot 184 formed between the two side frames 18 and 19 and the supporting structure 17.

Electric circuit operations

Cams 160 and 161 are mounted on one end of the shaft 90 as viewed in Fig. 2. These cams have associated therewith a cam follow-

er 162 pivotally mounted on a shaft 163 which is in turn pivoted to the frame 164 which is biased in a clockwise direction by spring 165. The cam follower 162 oscillates back and forth under the influence of the cams about the axis of the shaft 163 and has one end bifurcated and engaging an insulating strip 167 which is mounted on a contact spring 168. This construction is the subject of another application Serial No. 352,234 filed April 3, 1929 by C. E. Larrabee and is merely for the purpose of oscillating the contact 168 into cooperation with either the contact 169 or 170 (Fig. 14). The cams are arranged to make contacts 169 and 170 close with the contact 168 at the proper time on a three wire synchronizing system such as fully described in the patent to J. W. Bryce, No. 1,687,491 issued October 16, 1928. In this instance the contacts 169 and 170 represent the contacts shown in Fig. 3 of this patent by the reference rules 25 and 26. As this time system is fully described in this patent it is believed only a very general description is all that will be required. In Fig. 14 the verge of a master clock for operating a time stamp is indicated at 172 mounted thereon and closing every two seconds is a contact 173. The minute impulses are provided by the closing of the contacts 174 each minute and the contacts 175 actuate the relay 176 to open the B wire during the usual interval. The contact 177 closes periodically to bring the rapid impulse contact 173 into circuit with the master relay 178 to initiate rapid impulses over the A wire while the B wire is dead.

The contact member 168 is connected in circuit with the impulse driving magnet 81 and operates said driving magnet over the A or B wire by means of contacts 168 and 170 respectively in the same manner as the contacts in the secondary units in the previously named patent to Bryce so that self correction or synchronization is effected hourly.

Printing operation

Registration is effected by manually pushing the pusher plate 63 diagrammatically indicated in Fig. 14 thus closing the contacts 77 and 78 through the latch member 50 thus establishing a circuit through the magnet coil 37 from one side of the supply line through the magnet coil 37, contacts 78 and 77 to the other side of the supply line. As previously explained, as soon as the magnet 37 is energized it causes the latch to be lifted and the contacts 78, 77 open immediately. The unit construction of the stamp makes replacement or accessibility for inspection easily effected. The casing 22 may be removed by inserting a key in a socket, not shown, in the rear of the stamp and turning the latch 24 whereupon the casing may be lifted off. The bottom casing 21 may be lifted over the top by unscrewing four screws

not shown which pass through holes 188 in the base plate 15 and engage threaded holes in bosses 189 located in the four corners of the casing 21, lifting upward and removing the push plate 63 and then removing the casing. The time indicating mechanism may be removed as a unit by removing the screws 128 (Fig. 12) and lifting from its support. The printing head may be entirely removed as a unit by first disconnecting the lever 144 from the lever 143 (Fig. 7) said levers being releasably held on their connecting pivot by the spring clip 190, and then removing the screw 20 (Fig. 1).

The ribbon may be removed for replacement by removing the thumb screws 187 and then removing the members 185 and 186 in which the ribbon spool arbors are provided. The ribbon spool may then be withdrawn and a new ribbon placed thereon.

When the time stamp such as just described is desired to be operated by remote control this may be accomplished by rigidly attaching an armature transversely to the link 68 and parallel to its pivot 69 and mounting a magnet parallel to the base 15 and in operative relation to right of said link 68. This magnet may then be connected by a circuit to some remote switch, which when closed will energize said magnet drawing the armature to the right thus drawing the link 68 to the right thereby effecting closure of contacts 77 and 78 to effect printing in the same manner as when operated manually by the pusher plate 63 as previously described. As this would be an obvious mechanical expedient where remote control is desired it is deemed unnecessary to complicate the drawings by further illustration.

While there has been shown and described and pointed out the fundamental novel features of the invention as applied to a single modification it will be understood that various omissions and substitutions and changes in the form and details of the device illustrated and in its operation may be made by those skilled in the art without departing from the spirit of the invention. It is the intention, therefore, to be limited only as indicated by the scope of the following claims.

We claim:

1. In a time stamp, in combination, a plurality of serially arranged printing wheels, an electro-magnet adjacent said printing wheels having a plunger associated therewith adapted to project a platen against said printing wheels, a source of power for energizing said magnet, a circuit connecting said magnet with said source of power, contacts for opening and closing said circuit, manually controlled means for closing said contacts, and magnetic means controlled by the energization of said electro-magnet and independent of its associated plunger for opening said contacts.

2. A printing device having type elements and a cooperating platen, means including an electro-magnet for effecting relative movement between the platen and type elements to effect printing, a control circuit for said electro-magnet and magnetic means controlled by the magnet independently of the type elements and platen for interrupting said control circuit.

registration receiving material for printing and to effect a printing operation.

6. A printing machine provided with settable type bearing elements and a cooperating platen spaced therefrom to permit the insertion of registration receiving material, means including an electro-magnet for effecting relative movement between said type bearing elements and platen to effect a printing impression and a manually operable control device for operating said electro-magnet mounted exteriorly of said printing machine and in juxtaposition to the opening between the printing elements and the platen, said manually operable control device being provided with a push plate substantially coextensive with one dimension of the space between the type bearing elements and platen to permit operation of the push plate by the fingers of the operator which insert the registration receiving material and while holding it in registration receiving position.

In testimony whereof we hereto affix our signatures.

LEON C. BISHOP.

ALFRED L. SPRECKER.

3. A printing machine provided with settable type bearing elements and a cooperating platen spaced therefrom to provide an opening for the insertion of registration receiving material, operating means for relatively moving said type bearing elements and platen to effect a printing impression and a manually operable control device for said operating means mounted exteriorly of said printing machine in juxtaposition to the opening between the printing elements and the platen and a mounting for said control device having elements to provide an operating movement of the control device in a direction substantially parallel to the opening whereby a single uninterrupted motion of the hand serves to position the registration receiving material for printing and to effect a printing operation.

4. A printing machine provided with settable type bearing elements and a cooperating platen spaced thereupon to permit the insertion of registration receiving material, operating means for relatively moving said type bearing elements and platen to effect a printing impression and a manually operable control device for said operating means mounted exteriorly of said printing machine and in juxtaposition to the opening between the printing elements and the platen, said manually operable control device being provided with a push plate substantially coextensive with one dimension of the space between the type bearing elements and platen to permit operation of the push plate by the fingers of the operator which insert the registration receiving material and while holding it in registration receiving position.

5. A printing machine provided with settable type bearing elements and a cooperating platen spaced therefrom to provide an opening for the insertion of registration receiving material, means including an electro-magnet for effecting relative movement between said type bearing elements and platen to effect a printing impression and a manually operable control device for effecting operation of said electro-magnet mounted exteriorly of said printing machine in juxtaposition to the opening between the printing elements and the platen and a mounting for said control device having elements to provide an operating movement of the control device in a direction substantially parallel to the opening whereby a single uninterrupted motion of the hand serves to position the

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