

Sept. 9, 1941.

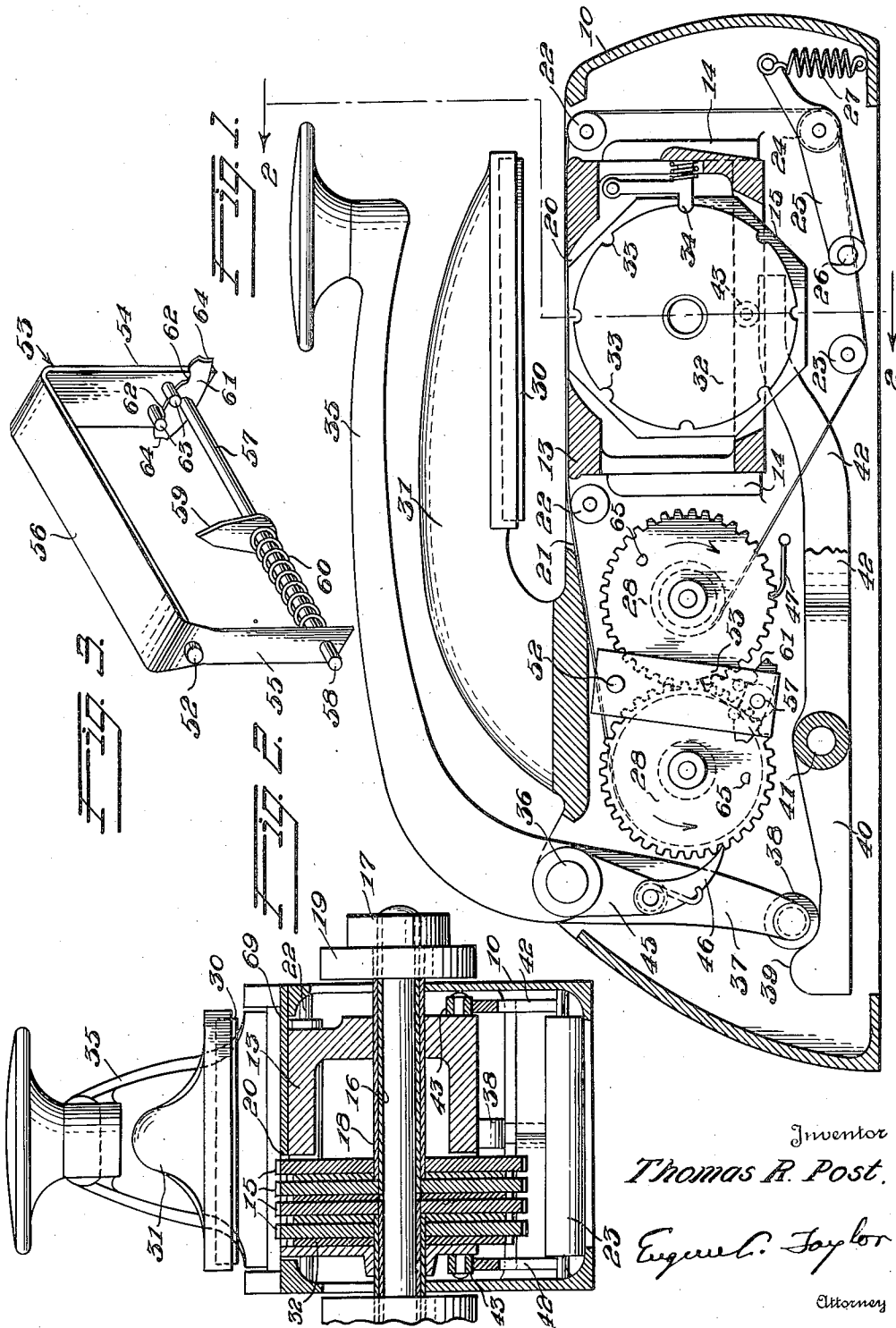
T. R. POST

2,255,453

DATING STAMP

Filed Dec. 2, 1939

2 Sheets-Sheet 1



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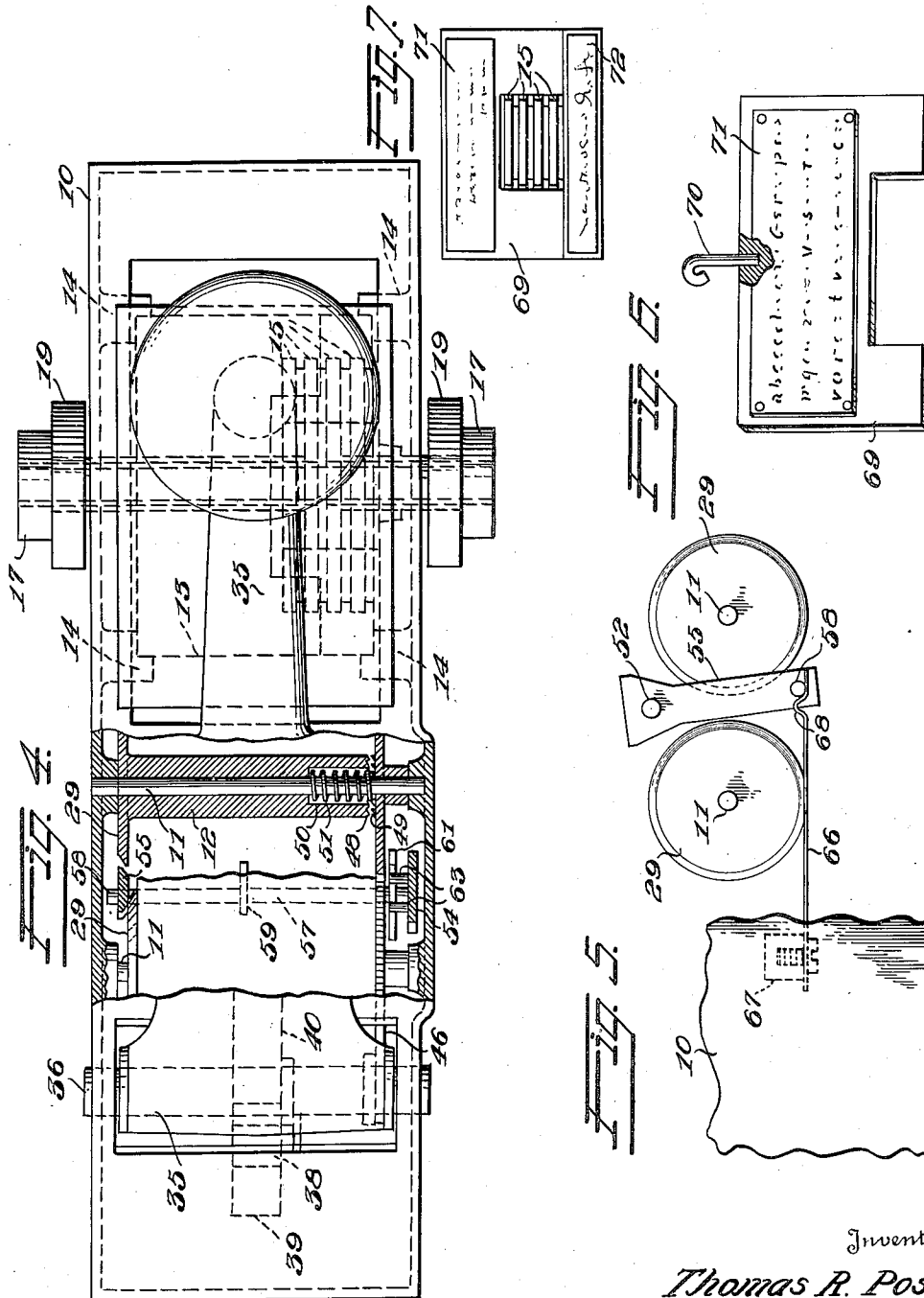
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2 Sheets-Sheet 2



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2,255,453

DATING STAMP

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4 Claims. (Cl. 101—100)

This invention relates to a dating stamp.

The invention is particularly concerned with that type of dating stamp which in general includes a plurality of rotatable type wheels, an inking ribbon intermittently movable over the upper portions of the type wheels, and a block or platen above the ribbon for impression of the type upon paper supported between the ribbon and platen.

Dating stamps of this general character are well known and disclosures thereof are to be found in U. S. Letters Patent No. 1,165,662 and U. S. Letters Patent 1,289,762.

It is a primary object of this invention to improve upon such prior constructions notably in the provision of means whereby the type and printing block or platen are movable toward each other in parallel relation and whereby the intermittently movable ribbon is maintained quiescent during the relative movement of the type and platen in a printing operation, which results in a perfectly clear impression and with a total elimination of blurs which were common in the use of devices of this general character heretofore employed.

A further object of the invention is the provision of a dating stamp which includes in operative association with the ribbon spools novel spool reversing mechanism, whereby the device is capable of continued use without the necessity of an operator thereof re-winding the ribbon.

A still further object of the invention is the provision of a stamp of the above noted character, wherein the type wheels are supported for bodily movement toward a fixed printing block and wherein means are provided for maintaining the printing ribbon taut during such movement of the type wheels.

A still further object of the invention is the provision of a dating stamp which is comparatively simple in construction, reliable and efficient in operation, and which is capable of manufacture at relatively low cost.

The invention also involves other advantages in construction and operation which will hereinafter appear and said invention is fully disclosed in the following specification of which the accompanying drawings form a part and in which the separate elements entering into the improved construction are designated by suitable reference characters.

In the drawings—

Figure 1 is a vertical longitudinal section of the dating stamp in a preferred embodiment

thereof, the section being taken immediately within the rear side wall of the frame;

Fig. 2 is a transverse section partially in end elevation as observed in planes substantially as represented by the broken line 2—2 in Fig. 1;

Fig. 3 is a perspective view of the main structure involved in the ribbon spool reversing mechanism;

Fig. 4 is a view partially in top plan and partially in horizontal section;

Fig. 5 is a fragmental elevational view particularly disclosing the means for holding the reversing mechanism in operative position;

Fig. 6 is a perspective view of a removable type plate; and

Fig. 7 is a top plan view disclosing a modification of the invention.

In the drawings forming part of this specification, 10 designates the casing which may be of any suitable material and of such construction as to properly facilitate assembly of the various co-operating elements therewithin. Rotatably mounted within the casing as by means of spindles 11 are a pair of ribbon spools 12 which are driven in a manner hereinafter referred to.

A type wheel supporting block 13 is disposed between the opposite side walls of the frame 10 and has bearings at its four corners in guide lugs 14 integral with or suitably secured to the side walls of the frame, such mounting of the blocks permitting vertical movement thereof in a manner later described.

A plurality of type wheels 15 are rotatably supported within the block 13 there being four of such wheels in the embodiment of the invention disclosed and the inner or adjacent wheels are secured to the inner ends of tubular shafts 16 which are manually rotatable by means of heads or knobs 17 and the outer wheels are secured to the inner ends of tubular shafts 18 which are manually rotatable by means of heads or knobs 19. It will, of course, be understood that the knobs 17 and 19 bear suitable markings as an aid in positioning any desired date types at the upper faces of the wheels which project through an opening 20 at the top of the block 13. An inking ribbon 21 of substantial length has its opposite ends secured to spools 12 with a major portion of such ribbon wound upon one or both of the spools and which spools are alternately driven in opposite directions in a manner hereinafter described.

The inking ribbon 21 extends in loop formation from the spools 12 in encircling relation with respect to the block 13 and type wheels 15 as is

clearly indicated in Fig. 1, with the upper run of such loop resting upon the upper exposed faces of the type wheels.

The ribbon loop is preferably guided by rollers 22 adjacent the top of the block 13 and at opposite ends thereof, the roller 23 below the block 13 and the ribbon tensioning roller 24 the opposite ends of which are journaled in intermediate portions of links 25 (only one of which is shown) pivotally connected with the side of the frame at 26 and having their free ends engaged by tension springs 27.

A gear wheel 28 is rotatably mounted on each of the spool spindles 11 and forms one of the heads of the respective spools in opposition to the opposite disk head 29. The gear wheels 28 are of equal diameter and are in meshing relation with each other whereby they rotate in opposite directions as indicated in Fig. 1 with a corresponding alternate rotation of the spools 12 for intermittent movement of the inking ribbon 21 over the upper exposed faces of the type wheels.

A stationary printing block or platen 30 is disposed above the block 13 in parallel relation with the top thereof and is suitably supported from the top of the frame 10 by an arm 31.

Furthermore, certain of the type wheels 15 may be of polygonal shape, particularly the wheel carrying the names of the months, thereby presenting successive flat faces in parallel relation with the top of the block 13 as well as with the platen 30. One such wheel is so indicated in Fig. 1, conventionally shown as octagonal.

Any suitable ratchet means may be provided to retain the type wheels in any set position, but preferably each such wheel is provided with a disk 32 having a recess 33 corresponding to each operative printing position of the wheel, and spring-pressed dogs 34 successively engage within the recesses 33 as is clearly indicated in Fig. 1.

An operating arm 35 is provided for raising the block 13 and advancing the inking ribbon 21 in a manner now to be described.

The arm 35 is disposed above the platen supporting arm 31 and is pivotally connected between the side wall of the frame 10 as at 36. The arm is provided with an extension 37 on the lower end of which is journaled a roller 38. The roller 38 is in constant engagement with a cam surface 39 on the outer end of lever 40 which is pivotally connected intermediate its ends as indicated at 41 and which at its inner end comprises a pair of arms 42, one disposed at each side of the block 13 and the horizontal free ends of the arms 42 engage rollers 43 suitably journaled at opposite sides of the block 13.

This construction provides for upward movement of the block 13 and the wheels 15 for operative impression contact with the platen 30 and the upper faces of the printing wheels are moved toward the platen in constant parallel relation therewith thereby to assure a clear and non-blurred impression upon paper disposed between the ribbon 21 and the platen 30.

In order to assure the clear impression the inking ribbon is advanced upon downward or non-printing movement of the block 13 and this is carried out by the provision of an arm 45 depending from the operating arm 35 and having a spring-pressed pawl 46 pivotally supported at its lower end. The pawl is in constant engagement with the teeth of the outermost gear 28 and operating to move such gear an angular

distance equal to the space between any two teeth upon each upward movement of the operating arm 35 or the corresponding downward movement of the block 13.

A suitable spring detent 47 is provided to prevent retrograde movement of the gear wheels 28.

Novel means are provided in accordance with the present invention for reversing the direction of movement of the inking ribbon 21 whereby such ribbon will be alternately withdrawn from one spool 12 and wound upon the other, and such means in a preferred embodiment thereof comprises the following structure.

Each of the spools 12 at the end thereof adjacent the corresponding gear wheel 28 is provided with clutch teeth 48 (Fig. 4) and the adjacent side of the gear wheel is provided with cooperating clutch teeth 49. The spools are further provided with recesses 50 in which are disposed coil springs 51 reacting against the gear wheels and bottom of the recesses for normally holding the clutch teeth 48 and 49 out of engagement, whereby the spools and gear wheels are free for independent rotation as is clearly indicated in Fig. 4.

Swingably mounted on a spindle 52 whose ends are supported in side walls of the casing is an inverted U-shaped frame 53 including a relatively wide end member 54 disposed between the gear wheel 28 and the adjacent side of the frame 10, and a narrower beveled edge end member 55 disposed between the spool head 29 and the adjacent side of the frame 10 and a top connecting member 56. A spindle 57 is rotatably journaled in the lower end of members 54 and 55 with one end thereof projecting beyond the end member 55 as indicated at 58.

Fixed to the spindle 57 intermediate the members 54 and 55 is an arm 59 which upon engagement by the body of the ribbon on either spool imparts partial rotation to the spindle 57 as will later appear. A coil spring 60 surrounds the spindle 57 with its opposite ends engaging the end member 55 and the arm 59 for practically retarding rotation of the spindle 57.

Fixed to the spindle 57 immediately within the end member 54 is a member 61 having recesses 62 in its upper end for successively receiving the pin 63 extending inwardly from the end member 54, the pin 63 limiting rotation of spindle 57 by engagement of either recess 62 with the corresponding pin 63.

The member 61 is slightly concave at each end as indicated at 64 and each gear wheel 28 is provided with a pin 65 for engagement with the corresponding concave end 64 at certain intervals as will later appear, for shifting or rocking the frame 53 about the spindle 52, thereby de-clutching one spool 12 and clutching the other.

The operation of this novel ribbon reversing mechanism is as follows:

As indicated in Figs. 1 and 4 the ribbon is being wound upon the outer spool 12 and unwound from the inner spool 12 and accordingly gear wheel 28 are in driving engagement through the coaction of the teeth 48 and 49 and the inner spool 12 is free of the corresponding gear wheel 28 as clearly indicated in Fig. 4, and while both gears 28 are rotating in opposite directions only the outer one is driving a ribbon spool.

In this stage of operation, the frame 53 is swung rearwardly with the beveled edge end member 55 in overlying frictional engagement with the head 29 of the outer spool 12, thereby

compressing the spring 51 and holding the teeth 48 and 49 in clutching engagement. As indicated, the outer spool is now fully wound and the inner one almost unwound and the body of ribbon on the outer spool has engaged the arm 59 and swung the member 61 to the limit of its clockwise position (Fig. 1), thereby positioning the end 64 thereof in the path of the pin 65 on the outer gear 28, and which pin upon further rotation of such gear will engage member 61 and rock the frame 53 in the opposite direction, whereupon the beveled edged member 55 will engage the beveled edge of the head 29 of the inner spool 12, and put same in driving engagement with the corresponding gear 28 and release the outer spool from driving engagement with its gear. As the inner gear rotates oppositely to the outer gear, the ribbon will now be wound upon the inner spool 12 and unwound from the outer spool 12.

It is to be noted that the pins 65 are in a plane adjacent the circumference of the gears for clearing the member 61 when in neutral position.

In order to hold the frame 53 in either of its clutching positions, a leaf spring 66 has one end thereof secured to a lug 67 on a side wall of the frame 10 and the spring adjacent its free end is provided with a projection 68 for engaging the extension 58 of spindle 57 and thereby holding the frame 53 in clutching engagement with either spool head 29.

The block 13 is adapted to detachably support a plate 69 having a positioning handle 70 and a cast type bar 71 is suitably secured to the plate as is clearly represented in Fig. 6 whereby business advertising and the like, in addition to the date, is capable of being stamped by the device.

If desired, the type wheels 15 may be positioned nearer the center of the block 13 as indicated in Fig. 7 whereby a signature plate 72 in addition to the plate 69 may be detachably supported by the vertically movable block 13.

From the foregoing detailed disclosure it will be readily appreciated that a dating stamp is provided in accordance with this invention which comprises novel cooperating elements for rendering the device highly efficient in operation.

While I have disclosed preferred means for carrying the various objects of my improvement herein set forth into effect, my invention is not limited to the details of construction herein shown and described, and changes therein, and

modifications thereof may be made, within the scope of the appended claims, without departing from the spirit of my invention or sacrificing the advantages thereof.

Having fully described my invention, what I claim and desire to secure by U. S. Letters Patent is:

1. In a dating stamp, a frame, a platen rigidly fixed to the top of the frame, a block having a plurality of printing wheels journaled therein and supported within the frame for movement toward the platen, an operating arm pivotally supported by the frame and extending over the platen, the arm having an extension within the frame, a lever pivotally supported intermediate its ends by the frame, one end of the lever operatively engaged with the block and the other end of the lever operatively engaged by the free end of the extension for movement of the block toward the platen upon actuation of the operating arm.

2. The structure defined in claim 1, wherein the block is provided with a roller at each side thereof, and wherein the lever comprises an arm in bearing engagement with each roller.

3. The structure defined in claim 1, wherein the operative engagement between the operating arm extension and lever comprises a cam surface on the lever and a roller pivotally supported by the extension and in bearing engagement with the cam surface.

4. In a dating stamp, a frame, a block vertically movable within the frame and having a plurality of printing wheels journaled therein, the top of the block being plane and having a printing wheel exposing opening therein, a platen above the block and rigidly supported parallel with the top of the block by an arm projecting from the frame, an inking ribbon intermittently movable over the top of the block, an operating arm pivotally connected to the frame and extending over and longitudinally of said first arm, a lever arm pivotally supported within the frame and having one end thereof operatively engaged with said block, the operating arm having an extension carrying a roller at the free end thereof, and a cam surface on the other end of said lever arm engageable by said roller upon depression of said operating arm for raising said block and bringing said printing wheels into impression contact with said platen.

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