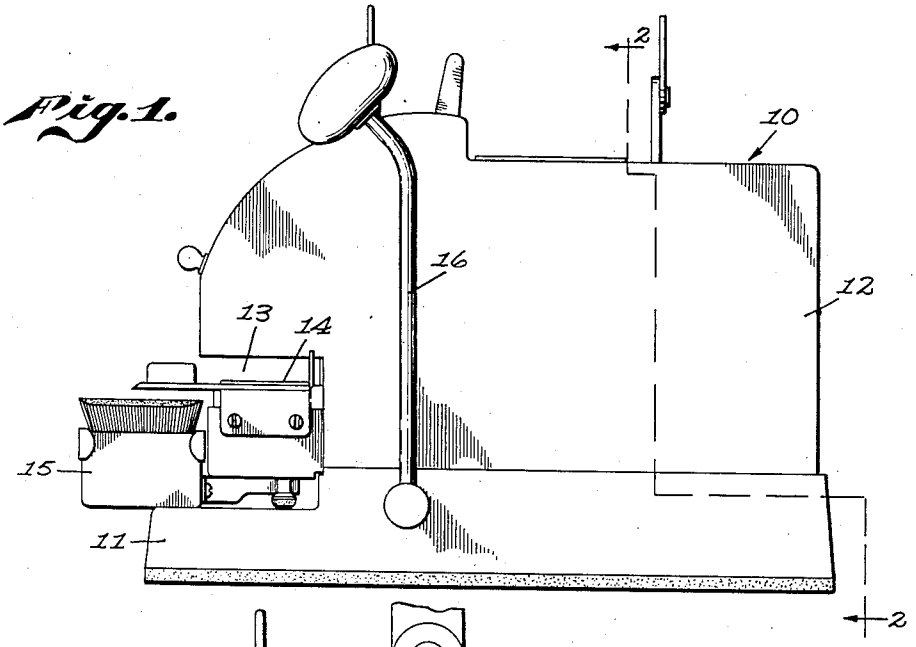
Dec. 14, 1937. B. S. TYLER 2,102,046

LOCKING SYSTEM FOR REGISTERING MACHINES

Filed March 4, 1935 4 Sheets-Sheet 1

Fig. 1.



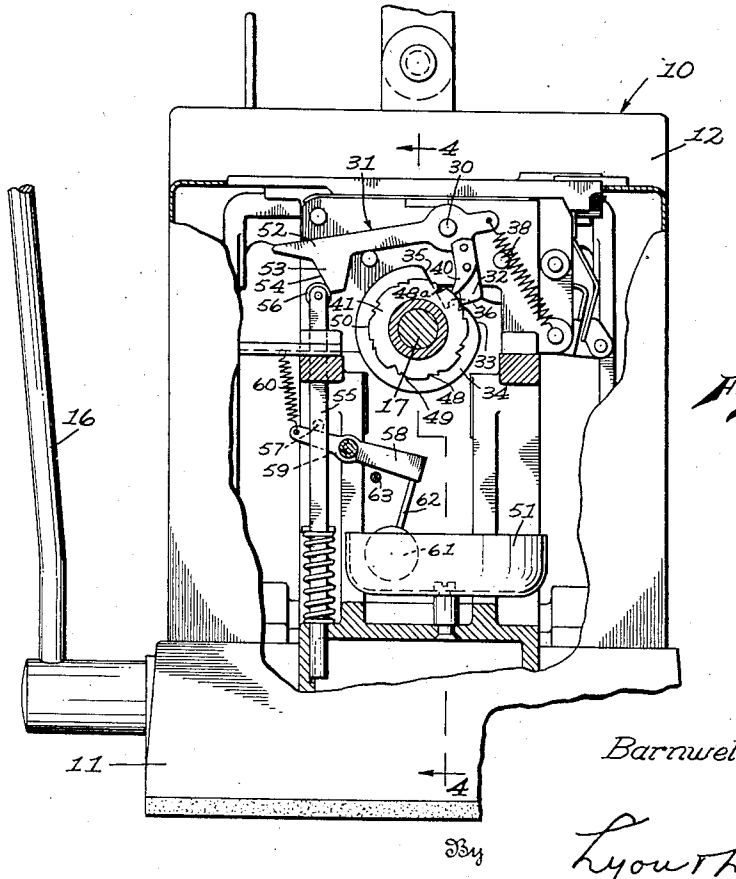


Fig. 2.

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LOCKING SYSTEM FOR REGISTERING MACHINES

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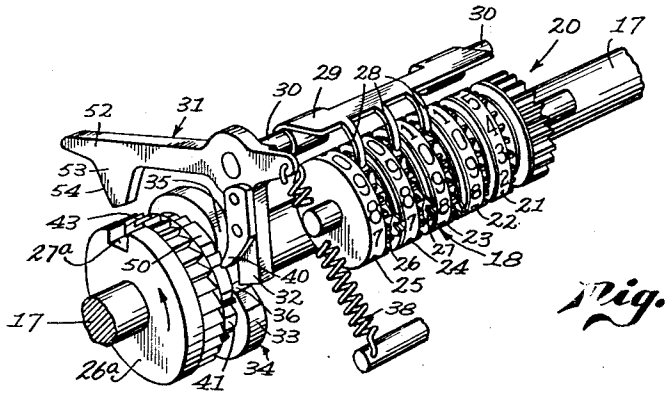


Fig. 3.

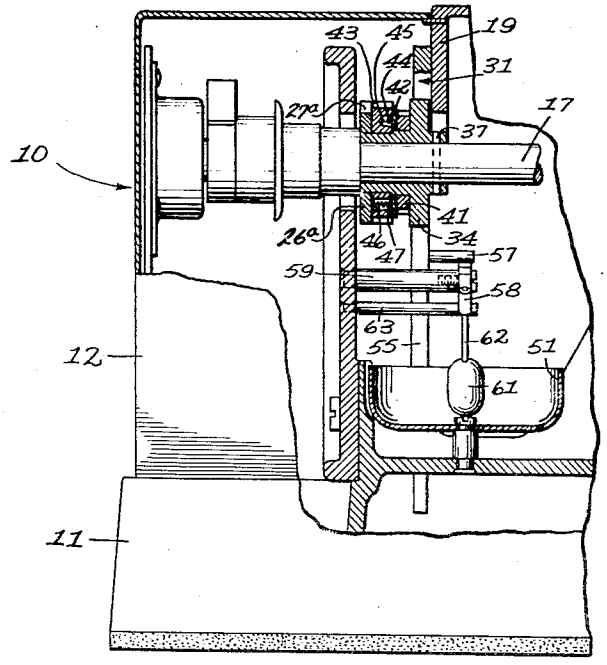


Fig. 4.

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LOCKING SYSTEM FOR REGISTERING MACHINES

Filed March 4, 1935 4 Sheets-Sheet 3

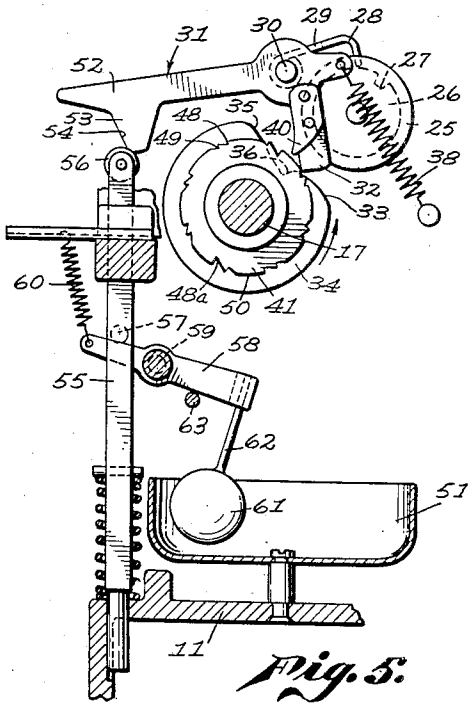


Fig. 5.

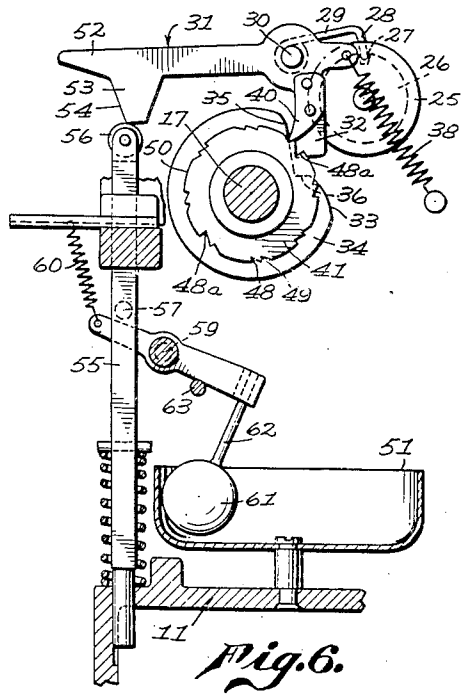


Fig. 6.

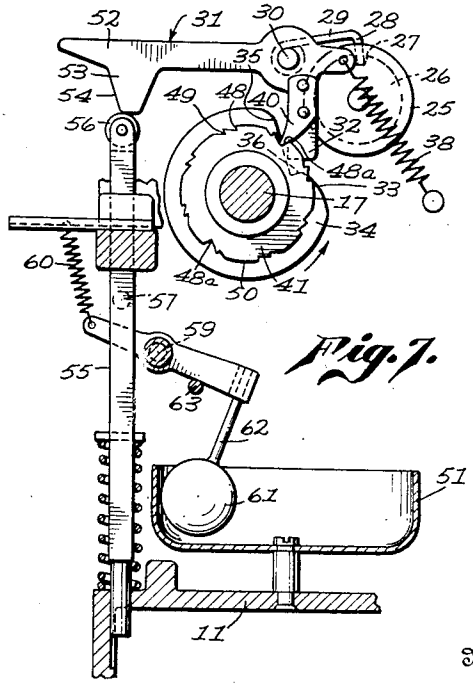


Fig. 7.

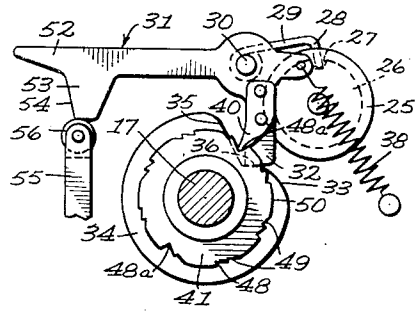


Fig. 8.

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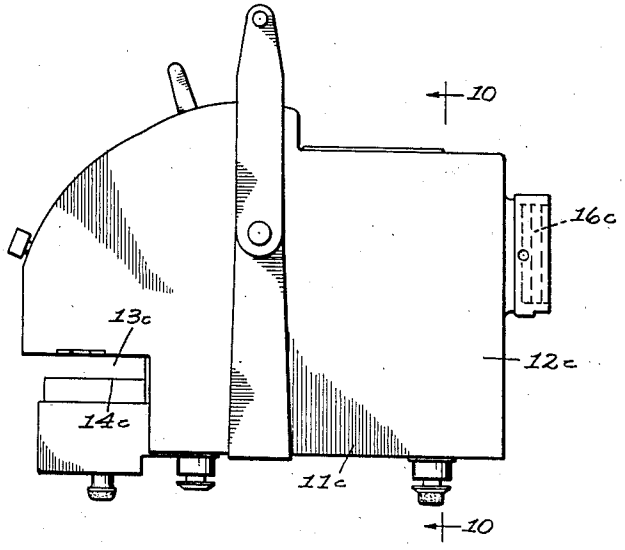
Attorneys

Dec. 14, 1937. B. S. TYLER 2,102,046

LOCKING SYSTEM FOR REGISTERING MACHINES

Filed March 4, 1935 4 Sheets-Sheet 4

Fig. 9.



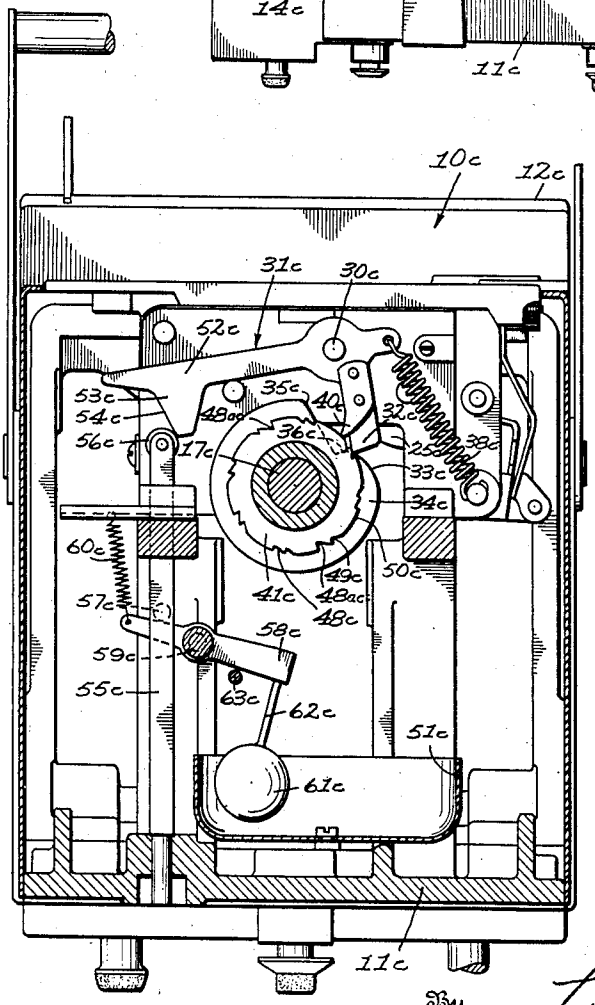


Fig. 10.

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Patented Dec. 14, 1937

2,102,046

UNITED STATES PATENT OFFICE

2,102,046

LOCKING SYSTEM FOR REGISTERING MACHINES

Barnwell S. Tyler, Los Angeles, Calif., assignor to National Postal Meter Company, Los Angeles, Calif., a corporation of California

Application March 4, 1935, Serial No. 9,171

8 Claims. (Cl. 235—130)

This invention relates to a locking system for registering machines.

A registering machine arranged for the printing of postage stamps upon mail matter has been chosen for the purpose of illustration but it will be understood that the machine may be organized for other uses and purposes.

It is one of the principal objects of this invention to provide a postage printing and registering machine with a locking system which will permit the machine to operate from one to seven times after the locking means has been released by the control register of the machine and to give an audible or other type of signal upon the release of the locking means whereby the operative will be advised as to the condition of the machine.

It is a further object to provide the locking mechanism with a cycling means which will act, upon release of the locking mechanism by the register, to prevent the locking means from acting to lock the machine against further use until the machine will have first been operated one or more times after the release of the locking mechanism.

It is a further object to provide a cycling means which will not require resetting, or attention in any respect from the post office official during the resetting of the control register of the machine.

Other objects and advantages of the invention will become apparent as the nature of the same is more fully understood from the following description and accompanying drawings wherein it is set forth what is now considered to be a preferred embodiment. It will be understood, however, that this particular embodiment of the invention is shown principally for the purpose of exemplification and that variations therefrom in details of construction or arrangement of parts may equally be effected and yet remain within the spirit and scope of the invention as the same is set forth in the appended claims.

In the drawings:

Figure 1 illustrates a manually operable postage printing and registering machine incorporating the locking system of this invention.

Figure 2 illustrates a partial sectional view taken substantially in the plane of line 2—2 of Fig. 1 and illustrates in partial detail the locking, cycling and signaling means of the invention.

Figure 3 illustrates a fragmental perspective view of the control register, locking mechanism and cycling means.

Figure 4 illustrates a fragmental sectional view taken substantially in the plane of line 4—4 of Fig. 2.

Figures 5 to 8, inclusive, illustrate the locking mechanism, cycling means and signaling means in different phases of their operations.

Figure 9 illustrates a power driven postage printing and registering machine incorporating the locking system of this invention; and

Figure 10 illustrates an enlarged sectional view taken substantially in the plane of line 10—10 of Fig. 9.

The postage printing and registering machine illustrated in Figures 1 and 8 is generally of the type illustrated and described in the Commodore D. Ryan application Serial No. 673,639, filed May 31, 1933. The present machine differs from the Ryan machine in its ability to print and register selectively any one of four different denominations; however, this feature is only indirectly related to the locking system of this invention and, therefore, is not specifically claimed herein.

Referring to Figures 1 and 8, the postage printing and registering machine 10, hereafter referred to as the "machine", is built upon a base casting 11. A casing 12 is securely fastened to the base in such a way as to prevent unauthorized access to the working parts of the machine. The forward end portion of the casing is provided with a throat 13 for the reception of matter to be printed upon. The under surface of the throat is provided with a resiliently mounted platen 14 for receiving and supporting the mail matter during the printing operation. An envelope flap moistening device 15 may be mounted in front of the casing and below the top surface of the platen. An operating crank 16 may be positioned along one side of the casing and for each operation thereof the main drive shaft 17 (Figs. 2–3–4) will be rotated through one complete revolution. A more detailed description of the machine thus far pointed out may be found in the Ryan application; however, these several parts and devices may be otherwise organized and as they do not form an important part of this invention they are not claimed herein.

It is important, however, to provide some form of means operable for turning the main drive shaft through a full revolution for each operation of the machine.

In the Ryan application there is disclosed a totalizing register and a subtracting register. This same arrangement may be incorporatod in the present invention; however as the totalizing

register has no connection with the functioning of the locking mechanism, for the sake of simplicity, it has not been shown in the drawings. The subtracting register 18, which is more commonly referred to as the control register, may be appropriately mounted in the register frame 19 and differentially geared to the main drive shaft through the selective gearing 20, (Figs. 3 and 4). Means, not shown, are provided for selecting the correct gear and value printing die whereby for each denomination of stamp printed a corresponding value will be subtracted from the amount registered in the register.

The control register may be provided with any number of numeral wheels. As illustrated in Figure 3, the register is provided with a cent wheel 21, a ten cent wheel 22, a dollar wheel 23, a ten dollar wheel 24, and a hundred dollar wheel 25. Each of these numeral wheels is provided with the usual form of transfer mechanism, not shown, whereby the value turned into the cent wheel will be serially progressed through the other wheels in the well known manner.

The novel features of this invention are incorporated in the locking mechanism, cycling means, and signaling device, and in the cooperative interrelation of these instrumentalities and their cooperative relationship with the other instrumentalities of the machine.

The locking mechanism, cycling means and signaling device will be described in the order stated.

Locking mechanism

The machine of this invention is operable for selectively printing any one of four different values. The four different values which may be printed by the machine may be chosen to meet the particular requirements of the machine by selecting the proper gear ratios for the register drive and providing corresponding value printing figures. The machine illustrated in the drawings is arranged to register and print postage stamps of 2, 3, 8 and 10 cent values.

The locking mechanism is provided with a cycling means, which means is operative upon release of the locking mechanism by the register to retain the locking mechanism from acting to lock the machine against further use until the machine has operated from one to seven times. For this reason, it is necessary to start the locking action at a sufficiently high value to prevent the register from being turned past its zero reading, or overdrafted as it is termed, and thereby automatically resetting a new value in the register.

The predetermined value beyond which the locking means is released should equal or exceed the product of the maximum value which may be printed multiplied by the maximum number of operations which the cycling means will permit the machine to be operated after being released by the register. In the instant case the maximum printing value is ten cents while the maximum number of possible operations after release of the locking mechanism is seven, thus giving a predetermined value of seventy. However, for convenience, the register is arranged to release the locking means when the amount registered therein passes the value of one dollar.

The locking mechanism, which is commonly referred to as a control means, may include providing the dollar wheel 23, ten dollar wheel 24 and the hundred dollar wheel 25, each with a separate notched control disc 26. The notches 27 of the control discs are positioned adjacent the figure "0" of each wheel, whereby the locking comb fingers 28 may enter the notches when these three wheels have turned to their zero positions.

The locking fingers are formed upon the free edge of locking comb 29, which is in turn fastened upon rock shaft 30. The rock shaft is journaled in the register frame 19 and has securely mounted upon one end a locking pawl 31. The depending arm 32 of the pawl serves two important functions.

The first of these functions is to ride upon the cam surface 33 of the locking cam wheel 34 to lift the locking comb fingers clear of the peripheries of the notched discs 26 for the major portion of the operating cycle of the machine to thereby avoid unnecessary wear between the fingers and discs. Just prior to the end of the operating cycle of the machine the locking pawl arm 32 will ride down the relieved portion 35 (Fig. 7) of the locking wheel cam surface to return the locking comb fingers into feeling engagement with the notched control discs 26 and should one or more of the fingers engage the periphery of its related control disc, the butt end of the arm will be maintained clear of the cam wheel locking surface 36 (Fig. 5); but should all of the fingers swing into the notches of their respective control discs, then arm 32 will be permitted to swing in a clockwise direction as viewed in Figure 8 sufficient to enter into locking engagement with the locking surface 36 and to thereby lock the machine against further use until a new value is set up in the control register.

As may be noted from Figure 4, the locking cam wheel 34 may be securely keyed upon shaft 17 of the machine as by means of pin 37.

A spring 38 (Fig. 3) may be provided for yieldingly urging the butt end of the locking pawl arm 32 into operative engagement with cam wheel 34.

Having selected one dollar as the predetermined value below which the control means will function to lock the machine, it will not be necessary to provide the cent and ten cent numeral wheels with notched control discs, or the locking comb with fingers for these discs. The maximum value which may remain registered in the register upon locking of the machine will be ninety-nine cents and this amount will be carried forward with the next purchase of postage.

If it were not for the cycling means, the locking mechanism would invariably lock the machine at the completion of that cycle of operation during which the amount registered in the register passed the predetermined value. As previously stated, the cycling means will function upon the release of the control means by the register to prevent locking of the machine until the machine has operated from one to seven times. It will be understood that the cycling means may be easily changed to permit a lesser or greater number of operations of the machine after the release of the locking mechanism by the register.

Cycling means

The cycling means may include a tooth 40 operatively associated with the control means. For convenience, tooth 40 may be mounted upon the side face of the locking pawl depending arm 32 as illustrated in Figure 3. A cycling ratchet wheel 41 may be journally mounted

upon the main shaft 17, or may be journaled upon the hub of the locking cam wheel as shown in Figure 4. A frictional driving means may be provided to yieldingly urge the cycling ratchet wheel to turn with the main shaft and this means may include the thrust plate 42 positioned between the cycling ratchet and the unidirectional ratchet wheel 43. The thrust plate may have a tongue 44 struck therein and arranged to freely play in the bore 45 of the unidirectional ratchet wheel to insure a positive rotation of this plate. The unidirectional ratchet wheel may be provided with a plurality of transverse bores 46 to accommodate springs 47, which springs may be arranged to yieldingly urge the thrust plate into frictional driving engagement with the cycling ratchet wheel.

As may be observed in Figures 3 and 4, a locking disc 26*a* having a locking notch 27*a* is securely mounted upon shaft 17 adjacent ratchet wheel 43. This locking disc is made use of to lock the machine during such time as the denomination selecting means is being actuated to change the denomination of the machine. A pawl, not shown, enters notch 27*a* to complete this locking effect. As this feature has no bearing upon the present invention and would only complicate the case, it has not been shown or described.

The cycling wheel is provided with pairs of appropriate ratchet notches 48 and 49 (Figs. 5 to 8) separated by peripheral lands 50. Two of the diametrically opposed ratchet notches are cut deeper than the other of these notches and are designated 48*a*.

The tooth 40 is positioned to be held just clear of the periphery of the cycling wheel by the engagement of any one or all of the locking comb fingers 28 with the periphery of their related control discs 26 (Fig. 5), and to be released into operative engagement with the cycling wheel when all of the fingers enter the notches of their related discs (Fig. 6).

When the control means is released by the register, that is when all of fingers 28 enter into notches 27 of their related control discs; the control means, including the locking comb 29, rock shaft 30, locking pawl 31, and tooth 40, will rotate in a clockwise direction as viewed in Figures 5 to 8, thereby swinging tooth 40 into operative engagement with the cycling wheel 41. The engagement of tooth 40 with the cycling wheel will prevent further rotation of the control means 31. If the tooth engages either the peripheral lands 50 or the shallow notches 48, 49, the free or butt end of arm 32 of the locking pawl will be held clear of the locking surface 36 of cam wheel 34, thus preventing the locking mechanism from functioning to lock the machine, (Figs. 2, 5 and 6). If, however, at the end of the operating cycle during which tooth 40 rides into one of the deeper notches 48*a*, (Figs. 7 and 8), the butt end of arm 32 will be swung into locking engagement with the locking surface of cam wheel 34 and, as a result thereof, the machine will be locked against further use until reset upon an additional purchase of postage.

It will be understood that the cycling ratchet wheel may be provided with one deep ratchet notch instead of two and in this way the maximum number of operations which may be made by the machine after the locking mechanism has functioned will be increased to fifteen or, on the other hand, a greater number of the deeper notches may be provided, thus reducing the maximum number of permissible operations of the machine.

It is desirable to provide means for calling the operative's attention to the condition of the machine when the register releases the control means, which means may be preferable in the form of an audible signal.

Signaling means

The signaling means is preferably of the audible type and may be provided by means of a bell 51 actuated by the control means when this means is released by the register. The actuating means for the bell may include providing the locking pawl with a horizontally extending lever arm 52 having a cam 53 depending from the free end thereof. The cam surface 54 is arcuate, having a center of curvature coincident with the axial center of rock shaft 30 whereby, during the swinging action of the lever arm from its position as shown in Figure 6 to that of Figure 5, it will not allow the spring weighted cam rod 55 to move upwardly. To reduce friction and wear, a cam roller 56 may be journaled upon the upper end of the cam rod so as to roll along the cam surface 54 during the operation of the locking pawl. It will be understood that the cam rod is slidably mounted in the machine. From Figure 5 it may be noted that the cam roller 56 does not quite roll off the end of cam surface 54 when the control means is actuated to swing the locking comb fingers 28 into engagement with the periphery of their related control discs 26. In Figure 6 it may be observed that upon additional movement of the control means, permitted by the entry of fingers 28 into their respective control disc notches 27, cam surface 54 is lifted sufficiently to permit the cam roller 56 to ride partially therefrom, thus permitting an upward motion of the cam rod 55. It is this motion of the cam rod which is utilized for actuating the bell and which only takes place when all of the locking comb fingers enter into their related notches in the register; and as a result the signal will be sounded only upon the release of the control means by the register and during each operation thereafter.

The motion of the cam rod 55 may be utilized for actuating the bell by means of the cam rod transversely extending pin 57 which engages one end of the bell hammer lever 58.

The bell hammer lever 58 may be pivotally supported as at 59 and may be yieldingly urged in the direction of pin 63 by a suitable spring means 60. The other end of lever 58 may be connected to the bell hammer 61 by a flexible member 62. An upward movement of the cam rod will permit lever 58 to swing in a clockwise direction under the influence of spring 60 until engaging the stop pin 63, (Fig. 6). The motion of lever 58 will be transmitted to the bell hammer through the flexible member and when the lever is stopped by pin 63 the inertia of the hammer will cause it to continue its motion sufficiently to strike the rim of the bell a sharp blow and thereby sound a clear audible signal. As may be noted from Figure 6, stop pin 63 will hold the hammer just clear of the bell and in this way, after the first engagement of the hammer, will not interfere with the ringing of the bell.

Operation

Before the machine may operate it must be

taken to the post office to have a value set up in the control register equal to the amount of postage purchased. Thereafter the machine may be operated by actuating lever 16 to register and print one stamp for each actuation of the machine of any one of the selectable denominations. With each printing of a stamp, the value thereof will be subtracted from the amount set up in the control register. The process of printing and registering postage stamps may continue until the amount remaining in the register falls below the selected or predetermined value at which the locking mechanism is to start upon its cycle of operation. At the same time, the signal bell will be rung to notify the operative that the machine may be used but a few more times before the control means will lock the machine against further use. If it were not for the cycling means, the machine would lock at the completion of that operating cycle of the machine during which the amount registered in the register passed or fell below the predetermined value of one dollar.

It will be understood that should by chance the register indicate that exactly one dollar remained registered in the register, the machine would not be locked as the locking comb finger 28 for the control disc of the dollar wheel would engage the periphery of this disc and thus retain the locking means ineffective. The locking mechanism will not be released until the dollar wheel and those of higher order have turned to their zero positions.

To give the operative the advantage of a few more operations of the machine after the control means has been released by the register and the sounding of the bell, the cycling means are provided.

In Figure 5 the locking and cycling means are shown as they would appear just prior to the start of the last operation of the machine before the locking comb fingers enter their respective control disc notches. Note the proximity of the butt or free end of the depending locking pawl arm 32 to the cam wheel locking and cam surfaces. During the next cycle of operation the initial rotation of the locking cam wheel will bring its cam surface 33 under arm 32, thus causing a partial rotation of the control means in a counter-clockwise direction to lift the locking comb fingers clear of their related control discs.

At substantially the end of this operating cycle of the machine, the free end of the locking pawl arm 32 will ride down the relieved portion 35 of the cam wheel to return the locking comb fingers into engagement with their respective control discs 26. As the amount now registered in the register has passed the predetermined value of one dollar, all of the locking comb fingers will swing into their related control disc notches 27 and as a result thereof the locking pawl will be permitted to turn through a greater distance in a clockwise direction, as viewed in Figures 5 and 6. In fact this rotation of the locking pawl will continue until tooth 40, which is carried thereby, will ride into ratchet notch 49 of the cycling wheel 41. This additional motion given to the locking pawl will cause its cam surface 54 to lift above cam rod roller 56 and as a result thereof the cam rod 55 will be moved upwardly under the influence of its spring. The upward movement of the cam rod will in turn cause the ringing of the signal bell in the manner previously described.

The enagement of tooth 40 with ratchet notch 49 will hold the cycling wheel 41 stationary during the final portion of this cycle of operation and during the initial portion of the next operating cycle will hold the free end of the locking pawl arm 32 out of range of the cam wheel locking surface 36 and in position to be engaged by cam surface 33 of the cam wheel. The engagement of the free end of arm 32 with the cam surface 33 will not only lift the locking fingers clear of their respective control discs but will also lift tooth 40 from the ratchet notch 49 of the cycling wheel. The engagement of tooth 40 with notch 49 during the final and initial portions of the operating cycles of the machine will hold the cycling wheel 41 stationary, while the main shaft and cam wheel rotate. The frictional driving engagement of the cycling wheel with the shaft will permit this differential motion and will also insure the rotation of the cycling wheel with the shaft at all times during which tooth 40 is out of engagement with one of its ratchet notches.

The cam wheel 34 will be rotated by the main shaft 17 during the final portion of the operating cycle of the machine and during the initial portion of the next operating cycle, while the cycling wheel 41 is maintained stationary by tooth 40 and, due to this relative movement betweeen the cam and cycling wheels, the next succeeding ratchet notch 49 will be moved into position to be engaged by tooth 40 upon completion of that particular operating cycle.

Reviewing the operation of the machine up to this point, I find that the machine has operated until during one particular cycle of operation the amount registered in the register passed the predetermined value of one dollar, and as a result thereof the register has released the control means, thus permitting tooth 40 to engage the cycling wheel notch 49 to bring about a relative movement between the cam wheel 34 and cycling wheel 41 and to hold the locking pawl arm 32 clear of the cam wheel locking surface.

At the completion of this releasing cycle of the machine, if it were not for the cycling means, the locking mechanism would act to lock the machine against further use; but due to the cycling means retaining the locking mechanism inoperative to lock the machine, the machine may be operated through another cycle. Now if the machine is actuated through what I may term the first cycle, after release of the locking mechanism by the register, the initial portion of this first cycle will cause a further relative movement of the cam wheel with relation to the cycling wheel due to the engagement of tooth 40 with ratchet notch 49. The disengagement of tooth 40 from notch 49 will occur when the free end of the arm is lifted by surface 33 of the cam wheel. Near the end of this first cycle of operation after release, when the end of arm 33 rides down the relieved portion 35 of the cam wheel, tooth 40 will ride into ratchet notch 48 to arrest the cycling wheel and to maintain the pawl free of the locking cam. When the machine comes to rest at the end of this first cycle of operation, tooth 40 will be in engagement with notch 48, thereby maintaining the control means inactive to lock the machine.

The machine may be operated for a second cycle of operation after release and, during the initial rotation of the drive shaft 17, tooth 40 will ride in notch 48, causing a further relative

movement between the cam and cycling wheels. Tooth 40 will be lifted from notch 48 in the manner previously described and, near the completion of this second cycle of operation when the free end of arm 32 again rides down the relieved portion 35 of the cam wheel, tooth 40 will engage the cycling wheel peripheral land 50 about midway between the next succeeding ratchet notches 49 and 48 due to the spacing of these notches.

During the final portion of this second operating cycle, tooth 40 will slide along peripheral land 50 and will ride into the ratchet notch 49 at the end of this land at substantially the end of the operating cycle and, due to this arrangement, the cycling wheel will not be moved relative to the locking cam wheel and, as in the first instance, the engagement of tooth 40 with the ratchet notch 49 will hold the locking mechanism inoperative to lock the machine.

The operation of the machine may be continued as above described until at the end of the seventh operating cycle when tooth 40 will ride into one of the relatively deep notches 48ª, (Fig. 7) and, as a result thereof, the free end of arm 32 of the locking pawl will be free to swing into locking engagement with the locking surface 36 of the cam wheel, thus locking the machine against further use until a new purchase of postage is set up in the register.

From the time the register releases the control means until the machine becomes finally locked, each operation will sound the signal bell, thus notifying the operative of the condition of the machine.

It will be well to note, and it is one of the features of this invention, that the cycling means does not have to be reset during the charging of the register with a new value.

It is not necessary to wait until the machine has become locked before resetting the control register. This may be done at any time. If, however, the register should be reset at the completion of any of the cycles of operation after the cycling means have been brought into operation, it will reduce the number of times which the machine may be operated after the next release of the control means by the register.

An example will illustrate this feature. Let us suppose that the machine has just completed its sixth cycle of operation after release. During the final portion of this cycle tooth 40 will engage the peripheral land 50 just preceding the relatively deep ratchet notch 48ª of the cycling wheel and will traverse this section of the wheel and at the completion of the cycle will ride into the ratchet notch 49. Due to this arrangement tooth 40 will not cause sufficient relative movement between the cycling and cam wheels to bring the locking ratchet notch 48ª into locking position. If now the register is recharged, the notches 27 of the control discs 26 will be turned out of register with the locking comb fingers 28, thus actuating the control means to lift tooth 40 clear of the cycling wheel and the free end of arm 32 of the locking pawl clear of the cam wheel locking surface.

The machine may now be continuously operated until the amount registered in the register again passes the predetermined value, whereupon the locking mechanism will be released and at the end of the releasing cycle tooth 40 will swing into contact with the cycling wheel but will not engage the deep ratchet notch 48a because the tooth was lifted clear of the cycling wheel during the charging operation of the register and thus the cycling wheel had not been turned sufficiently to bring the notch 48ª into registering position. At the completion of this releasing cycle, the cycling and control means will be in substantially the same relative positions as at the time the register was recharged.

That is, tooth 40 will be positioned in the ratchet notch 49 of the sixth position of the cycling wheel. The machine may now be actuated and during the initial portion of the cycle, tooth 40 will hold the cycling wheel stationary until released therefrom by the cam surface 33 of the cam wheel turning under the free end of the locking pawl arm 32 as previously described. The relative motion of the cycling wheel with relation to the cam wheel will turn the relatively deep notch 48ª into position to be engaged by tooth 40 when the free end of arm 32 rides down the relieved cam surface 35. As previously described, the deep notch will permit the butt end of the locking pawl arm 32 to swing into locking engagement with the cam wheel locking surface 36, thus locking the machine against further use.

Even though under the extreme condition just described wherein the machine may be operated only once after the release of the locking mechanism by the register, this has not been found to be a serious handicap as it happens so seldom and in most cases the machine may be operated the full seven times after the release of the control means. The simplicity of the cycling means and the elimination of the necessity for setting the cycling means each time the register is reset greatly overcomes any disadvantage which may arise from the reduction of operations after release of the control means.

Power driven machine

In Figures 9 and 10 the postage printing and registering machine is illustrated in the form it would take when arranged to be mounted for mechanical drive upon the "Power plant" of the John Q. Finfrock application Serial No. 723,094, filed April 30, 1934.

The parts of this form of the invention which correspond to those of the first described form have been designated by the same numerals with the letter "c" added thereto.

In place of the operating handle 16 there is provided a coupling member 16c adapted for operative connection with the related driving coupling member of the power plant driving mechanism of the Finfrock application and to be driven thereby.

The cam rod 55c will act to operate the stop button 190 of the power plant to control the driving clutch thereof in the manner fully described in the Finfrock application.

The operation of the power driven machine will be substantially the same as described for the hand operable form and, therefore, this description need not be repeated.

While I have illustrated a preferred form of my invention, it is to be understood that the foregoing description is for illustrative purposes only and I do not desire to be limited by any of the details shown or described, except as defined in the appended claims.

I claim:

1. In a locking system for a registering machine, a register for registering each operation of the machine, a control means conditioned by the register when the amount registered therein passes a predetermined value for locking the

machine against further use, and a cycling ratchet wheel and pawl means for maintaining the said control means inoperative to lock the machine until the machine has operated one or more times after the control means has been conditioned by the register.

2. In a locking system for a registering machine, a register for registering each operation of the machine, a control means conditioned by the register when the amount registered therein passes a predetermined value for locking the machine against further use, a cycling means for maintaining the said control means inoperative to lock the machine until the machine has operated one or more times after the control means has been conditioned by the register, an audible signal means, and means for actuating the signal means from the control means each time the machine is operated after the response of the control means to the register.

3. In a locking system for a registering machine, a register for registering each operation of the machine, a control means conditioned by the register when the amount registered therein passes a predetermined value for locking the machine against further use, a cycling means for maintaining the said control means inoperative to lock the machine until the machine has operated one or more times after the control means has been conditioned by the register, a signal means, and means actuated by the control means for actuating the signal means each time the machine is operated after the response of the control means to the register.

4. In a locking system for a registering machine, a register for registering each operation of the machine, a control means conditioned by the register when the amount registered therein has passed a predetermined value for locking the machine against further use, a cycling means for maintaining the said control means inoperative to lock the machine until the machine has operated one or more times after the control means has been conditioned by the register, a signal means and a signal actuating means operatively connected with the control means for indicating the conditioning of the control means by the register.

5. In a locking system for a registering machine, a drive shaft arranged to drive the machine through an operating cycle for each revolution thereof, a control register having a driving connection thereto, a locking cam wheel fixedly mounted upon the shaft, a locking pawl alternately controlled by the cam wheel and register during each operating cycle of the machine, locking pawl actuating means being conditioned by the register at the completion of the operating cycle of the machine in which the amount registered in the register has passed a predetermined value for releasing the locking pawl for locking engagement with the cam wheel, a cycling ratchet wheel independently rotatable with relation to the locking cam wheel and having appropriate ratchet notches, one or more of said notches being formed deeper than the other of said notches, and a cycling ratchet wheel actuating tooth carried by the pawl and operable upon the release of the pawl by the control means for engaging the cycling ratchet wheel for advancing this wheel a portion of a revolution with relation to the locking cam wheel for each actuation of the machine and acting to retain the pawl out of locking engagement with the cam wheel until one of the deep ratchet notches is turned into engagement with the actuating tooth.

6. In a locking system for a selective denomination registering machine, a drive shaft, a register operatively connected to the shaft, a locking means carried by the shaft, a locking pawl, locking pawl actuating means conditioned by the register when the amount registered therein has passed a predetermined value for releasing the locking pawl for entering into locking engagement with the locking means, a cycling means operatively mounted upon said shaft, and a cycling tooth rendered active by the locking pawl actuating means for rendering the locking pawl inoperative to enter into locking engagement with the locking means until the machine has operated one or more times after the conditioning of the pawl actuating means by the register.

7. In a locking system for a registering machine, a drive shaft, a register operatively connected thereto, a locking cam fixedly mounted upon the shaft, a locking pawl, locking pawl actuating means arranged to be conditioned by the register when the amount registered therein has passed a predetermined value for releasing the locking pawl for locking engagement with the cam, a cycling ratchet member having shallow and deep ratchet notches, and a cycling tooth engageable with the ratchet member for advancing the same when the locking pawl is actuated and operable for preventing the pawl from entering into locking engagement with the locking cam until the tooth engages one of the deep cycling ratchet notches.

8. In a locking system for a registering machine, a drive shaft, a register operatively connected thereto, a locking cam fixedly mounted upon the shaft, a locking pawl, locking pawl actuating means arranged to be conditioned by the register when the amount registered therein has passed a predetermined value for releasing the locking pawl for locking engagement with the cam, a cycling ratchet wheel journaled upon the shaft adjacent to the locking cam and having sets of ratchet notches and each set of notches being separated by a concentric peripherial land and one or more of said notches being deeper than the other of said notches, a friction driving means for said wheel, and a cycling tooth carried by the locking pawl arranged to be actuated into operative engagement with the notches of the ratchet wheel when the locking pawl responds to the register for causing a relative rotation between the locking cam and cycling wheel and said tooth operating to prevent the pawl from entering into locking engagement with the locking cam until the tooth engages one of the deep ratchet notches.

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