

Aug. 31, 1954

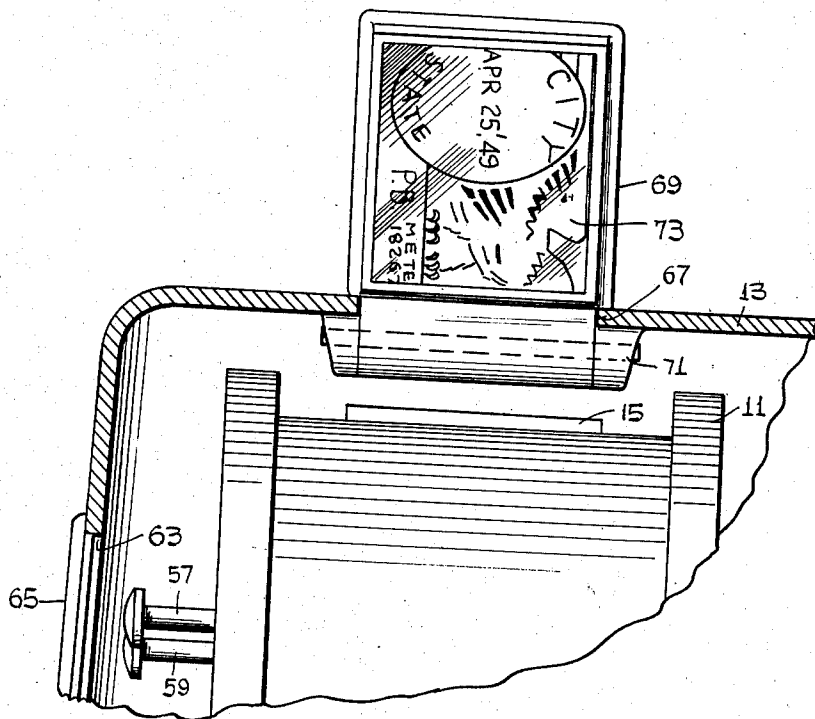
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DATE WHEEL SETTING DEVICE

2,687,692

Filed Aug. 17, 1951

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Fig. 3



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UNITED STATES PATENT OFFICE

2,687,692

DATE WHEEL SETTING DEVICE

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Application August 17, 1951, Serial No. 242,336

4 Claims. (Cl. 101-110)

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This invention relates to printing and more particularly to date printing in postage printing meters.

In postage printing and registering mechanism it is customary to have a date printing die including a plurality of settable wheels so arranged that the date may be changed by rotating the wheels to present the appropriate proportions of their peripheries at the printing position. The date wheels are carried by a movable printing member, such as a rotating drum, and the device as a whole is mounted within a tamper-proof casing. The latter is well known and has for its purpose the prevention of the taking of postage impressions unless the movable printing member is simultaneously moved through its printing cycle to affect the reading of the register.

It has been customary heretofore to provide a small opening in the casing opposite the stopping position of the date printing die through which a stylus could be inserted for rotating the date wheels to the desired date setting. This operation requires that the stylus be dextrously employed in order to rotate the wheels to show the correct type and is also complicated by the proximity of the edges of the casing opening. In addition, the usual small size and reverse reading of the printing type, together with the lack of illumination likely to be found within the casing and the interference of the stylus by the operator's hand, makes it difficult to see whether or not the setting is being or has been correctly made.

It is an object of the present invention, therefore, to provide means for setting the date wheels of a device of the above character which requires little if any manual skill to operate, and which can be used without impairing the visibility of the date wheel types.

It is another object of the invention to provide an aid to simultaneous inspection of the wheels during setting so that they may be easily read in direct fashion to determine whether or not the setting is being correctly made.

A feature of the invention is the provision of a wheel actuating means which is carried at all times on the printing member and guided for date-setting movement thereon.

Another feature of the invention is the provision of wheel rotating means which is so constructed as to rotate the date wheels by one full step per operation so as to reduce the chances for undershooting or overshooting the desired setting.

Still another feature of the invention is the provision of a wheel rotating means located with-

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in the printing member and behind the date wheels so that the printing types of the latter are clearly visible at all times during setting.

A further feature of the invention is the provision of means for closing the sight opening and for forming a direct reading image of the reverse reading date wheel types in such position that the wheels can be seen while operating the wheel setting mechanism.

In postage printers it is customary to mount the dater die within a town die, and to provide means for projecting the dies to printing position or retracting them to non-printing position. The town die and dater die are usually both simultaneously actuatable and individually movable so as to provide for printing various combinations to meet the requirements for various classes of mail.

Another object of the invention, therefore, is to provide date wheel rotating means so arranged that it can operate from the exterior of the printing member through the town die to the dater, but also so that it will not interfere with the relative movement between the town and dater dies, nor itself be interfered with by said movement. A feature of the invention in this connection consists in the provision of a date wheel operator on the printing member and accessible at the exterior thereof, but so arranged as to be capable of penetrating the town and dater dies when they are both in projected printing position. The date wheel operator is provided with means normally holding the same away from die penetrating position.

A preferred embodiment of the invention is illustrated in the accompanying drawing, wherein:

Fig. 1 is a partial section through the casing and printing member of a postage printing device according to the invention, taken approximately on line 1-1 of Fig. 2, but with the inspecting cover in closed position;

Fig. 2 is a partial section of the postage printer of the invention taken approximately on line 2-2 of Fig. 1, but illustrating the inspection cover in open position;

Fig. 3 is a partial section of the device of Figs. 1 and 2 taken approximately on line 3-3 of Fig. 2 but showing the printing drum unsectioned for simplicity.

The figures of the drawing illustrate a postage printing meter having a rotary printing drum 11 mounted for rotation in a tamper-proof housing 13 which surrounds the drum 11 and substantially prevents the taking of impressions except by operating the printing drum as intended.

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The printing drum 11 carries on its surface a postal indicia die 15 which surrounds a slidably mounted town die 17 within which is also slidably mounted a dater die 19. The dater die includes a month printing wheel 21, two days wheels 23 5 and 25 and a year wheel 27. The wheels 21, 23, 25 and 27 are coaxially arranged on a shaft 29 fixed to the carriage or yoke 31 which forms the foundation of the dater die 19. Detent means such as indicated at 33 in Fig. 1 is provided for retaining each of the wheels at the desired setting.

Operating means is provided for projecting the town and dater dies to printing position, and for retracting the dater die alone or the town and dater die together to non-printing position. 15 This means is indicated generally by reference character 35 in Fig. 1 and is preferably of the type described in detail in the application of Berthold Knauer, Serial No. 214,750 filed March 9, 1951.

The present invention provides means mounted in the drum 11 for rotating certain of the date wheels to the desired setting. In the form shown it is the day wheels 23 and 25 only which 25 are provided with such means, since these are the only wheels which must be moved frequently, and hence the wheels where the inconveniences of prior setting arrangements are most strongly felt. It will be realized, however, that similar operating means can be provided for the month 30 wheel 21 or the year wheel 27 if desired.

The wheels 23 and 25 are, first of all, provided with grooves 37 between their type faces, so configured as to form ratchet teeth and which takes the place of the grooves normally provided for engagement by a stylus. Below the wheels, and slidably arranged in a pair of parallel bores 39, 41 in the yoke 31 are the crossheads 43 and 45. The crosshead 43 carries a pivoted pawl 47 operating through a slot 49 and arranged to engage the wheel 23. The crosshead 45 carries a pivoted pawl 51 operating through a slot 53 to engage the wheel 25. A coil spring 55 reposes in the bore 39 and engages the inner end of crosshead 43. A similar spring (not shown) reposes in the bore 41 and engages the inner end of the crosshead 45. The springs act in a direction tending to force the crossheads towards the bore openings.

The pawls 47 and 51 are so configured that in their gravity positions they tend to extend beyond the ends of their respective crossheads and to present a sloping cam face to the corresponding spring. When any pressure is placed on the assembly to compress the springs, the 55 pawls 47 and 51 are immediately cammed upwardly by the springs to project them through their slots 49 and 53 and into operative engagement with their respective date wheels.

In order to reciprocate the crossheads 43 and 45 and their pawls 47 and 51, manually operable plungers 57 and 59 respectively are provided. The plungers are slidably mounted in suitable openings in the printing drum 11 and are urged outwardly by springs such as springs 61 in Fig. 1. 65 The plungers 57 and 59 are of such length that when retracted by their springs they lie wholly outside the town die 17, so that the town die 17 or dater die 19 may be retracted whenever desired by the mechanism 35 without danger of interference from either of the plungers 57 or 59. When the plungers are manually depressed against the force of the opposing spring, each will finally engage its corresponding crosshead 43 or 45 to drive the pawl 47 or 51 and thereby 70

rotate the corresponding date wheel 23 or 25 clockwise as seen in Fig. 1. This rotation is preferably in the direction of increasing numbers as shown in the drawing. Furthermore, the stroke of the plungers 57 and 59 after making contact with the corresponding crosshead, is preferably arranged to be such as will produce a movement of the wheel from one number to the next adjacent number. Access to the plungers is provided by a small aperture 63 in the tamper-proof housing 13. The aperture 63 is opposite the plunger ends whenever the drum 11 is in its stopping position, and may be provided with a movably mounted closure 65.

In order that the operation of setting the date wheels may be clearly viewed while it is in progress, and hence be accurately and quickly carried out, the invention further provides inspection means adapted to give the operator a clear, 20 normal reading view of the date types at all times. This consists of a small inspection opening 67 in the tamper-proof housing 13, which opening lies adjacent the stopping position of the dater die 19, and hence takes the place of the ordinary setting opening found in the previous stylus-operated devices. The opening is filled by a closure 69 hinged to the casing 13 as indicated by reference character 71. The inner surface of the closure 69 carries an optical reflector or mirror 73. The parts are so arranged that when the closure 69 is positioned approximately as shown in Figs. 2 and 3, the operator is able to see the date types. They also appear 35 reversed by the mirror 69 so that they are direct-reading and quite easily legible.

To operate the device of the invention the town and dater dies are projected to printing position by means 35, and the closures 65 and 69 are opened, the latter to approximately the angle shown in Fig. 2. The operator then inserts his fingers through the opening 63 and depresses 40 either the tens plunger 57 or the units plunger 59, or both, depending upon the particular date change to be effected. Each depression of a plunger causes feeding of the corresponding wheel one step, and this can be continued until the appropriate day setting is arrived at. During this procedure, the operator is simultaneously watching the rotation of the wheels by looking 45 into the optical reflector 73. Since the types are reflected in a direct reading position, they are easily interpreted, and no difficulty is experienced in bringing the date wheels to the proper setting without undershooting or overshooting. Once the setting is made, of course, 55 release of the plungers 57 and 59 permits them to retract fully under the influence of their springs, such as spring 61, and subsequently the dies 17 and 19 may be retracted and projected as desired by means 35 without danger of interference from the plungers.

While the plungers 57 and 59 have been described and shown as equipped with springs such as spring 61 which will retract them automatically when released, it will be understood that this is merely the preferable construction and that they may be arranged to operate without such springs or their equivalents in which case manual retraction of the plungers 57 and 59 would be required before the town die 17 or dater die 19 can be retracted to non-printing position.

Having described the invention, what is claimed is:

1. In a postage printing meter a rotatable printing drum; a carriage having an opening

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therein and slidable in said drum between printing and non-printing positions; date printing wheels rotatably mounted on said carriage; and manually controlled means for engaging and rotating one of said date wheels, said means comprising a wheel contacting device movably mounted on said carriage, and an operating plunger carried by said drum and movable through the carriage opening to engage with and drive said device and retracting means supported within the drum and engaging said plunger, whereby the plunger is normally retracted to a position clear of the carriage to permit retraction of the carriage when desired.

2. In a postage printing meter; a rotatable printing drum; a town die slidable in said drum between printing and non-printing positions and having a lateral opening; a carriage slidable within said town die between printing and non-printing positions; date printing wheels rotatably mounted on said carriage; and manually controlled means for engaging and rotating one of said date wheels, said means comprising a wheel contacting device movably mounted on said carriage and aligned with said town die opening when both the town die and carriage are in printing position and an operating plunger carried by said drum, extendable through the town die opening, and engageable with said device to drive the same when the town die and carriage are in printing position, said plunger being movable to a position clear of said town die and carriage to permit retraction thereof when desired.

3. In a postage printing meter; a rotatable printing drum; a town die slidable in said drum between printing and non-printing positions and having a lateral opening; a carriage slidable within said town die between printing and non-printing positions; date printing wheels rotatably mounted on said carriage; and manually controlled means for engaging and rotating one of said date wheels, said means comprising a wheel contacting device movably mounted on said carriage and aligned with said town die opening

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ing when both the town die and carriage are in printing position and an operating plunger carried by said drum, extendable through the town die opening, and engageable with said device to drive the same when the town die and carriage are in printing position, and spring means for withdrawing said plunger to a position clear of said town die and carriage.

4. In a postage printing meter, a printing drum having a postage indicia die, a carriage having an opening therein, an adjustable type wheel having a notched peripheral surface and mounted in said carriage, said carriage being adjustable to place the type wheel in a printing or non-printing position relative to the postage indicia die, a pawl engageable with a notch in said type wheel and slidably mounted in the carriage, a plunger movable through the carriage opening and against the pawl to effect type wheel setting when the carriage is in a printing position, and means to urge said plunger beyond the path of the carriage.

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