

Dec. 29, 1942.

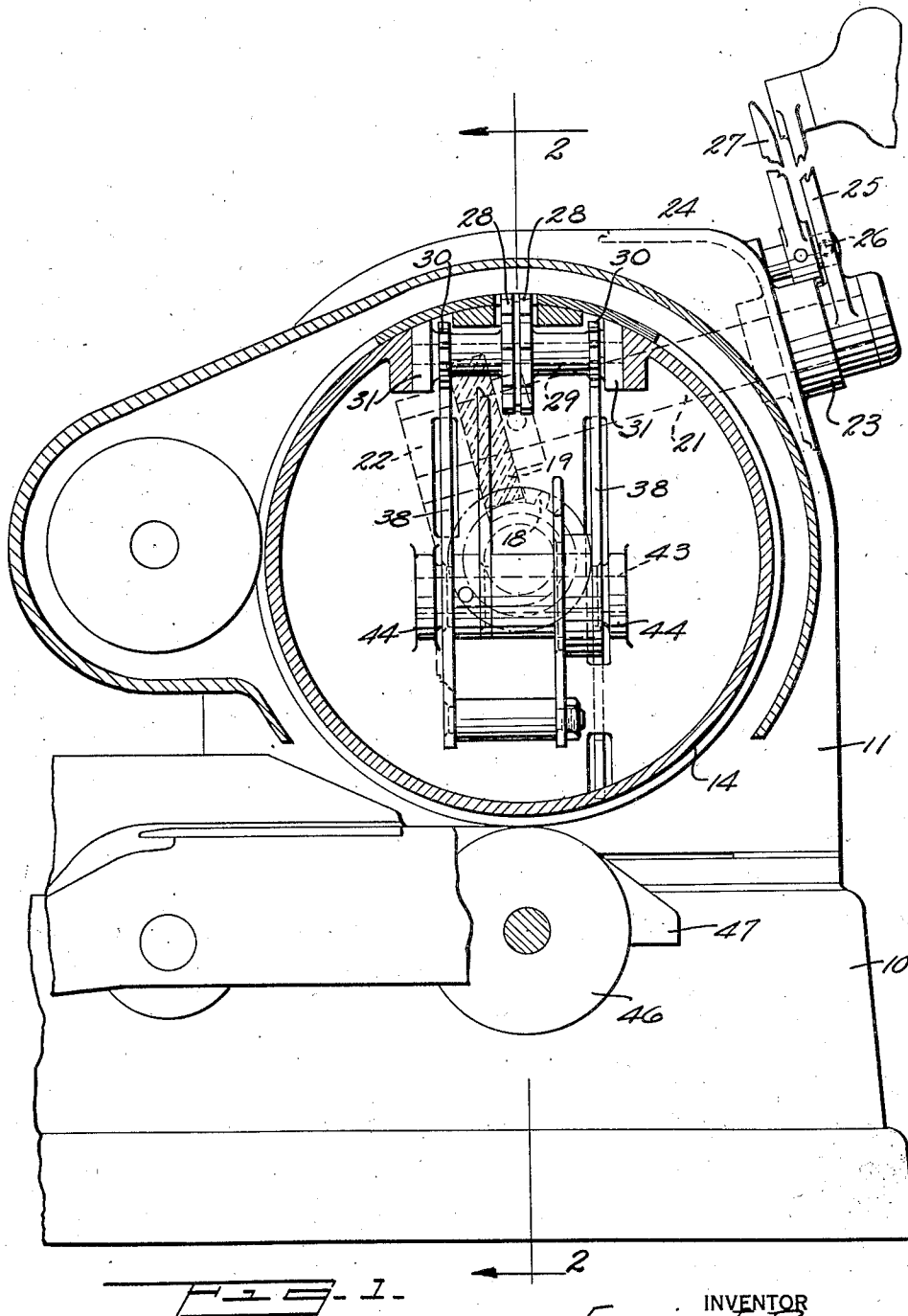
F. J. ROUAN

2,306,499

REGISTER ACTUATOR

Filed July 20, 1940

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

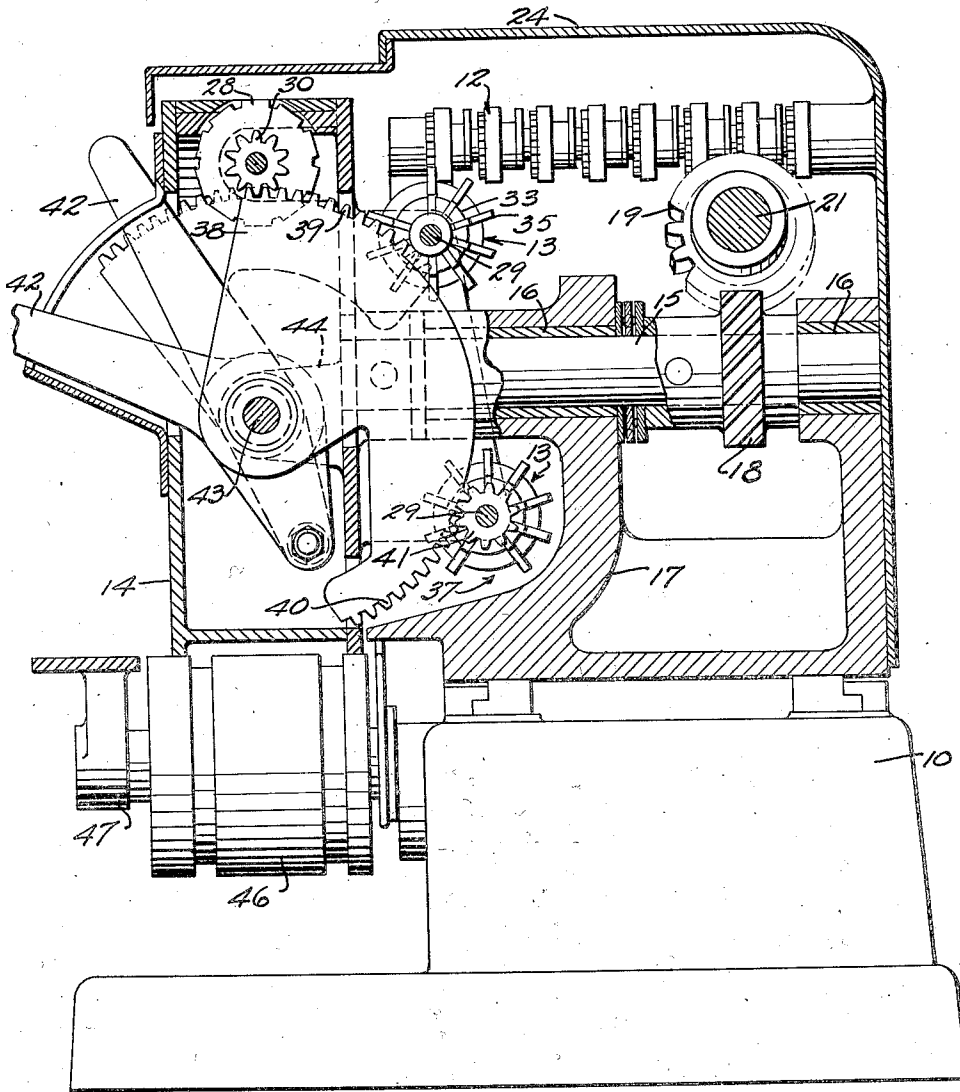


FIG. 2.

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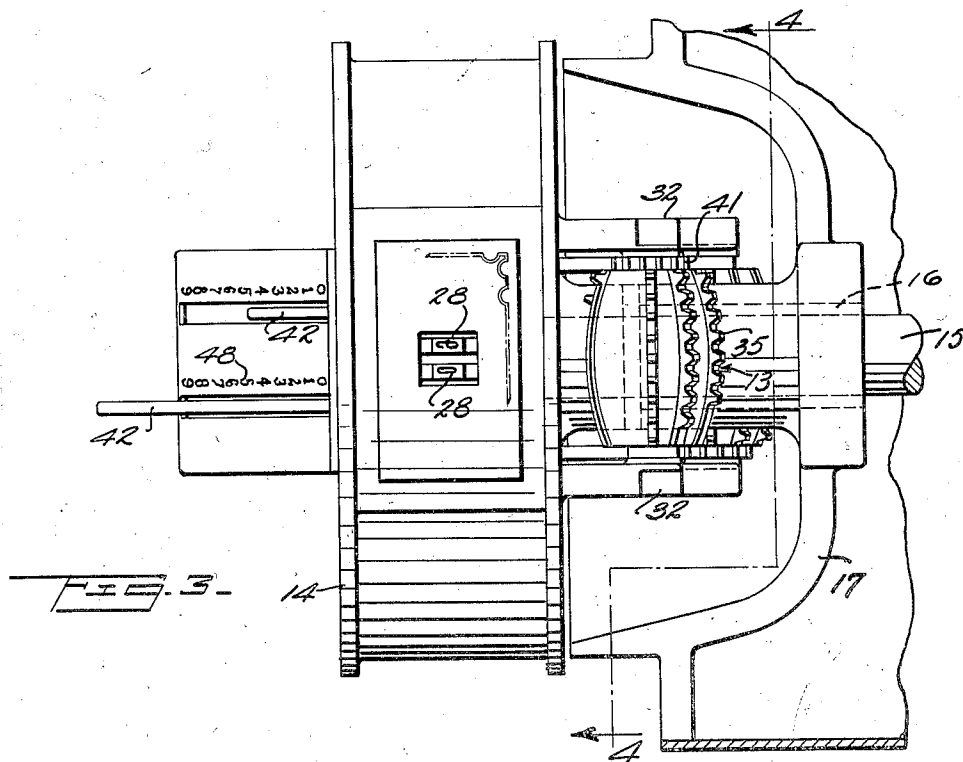
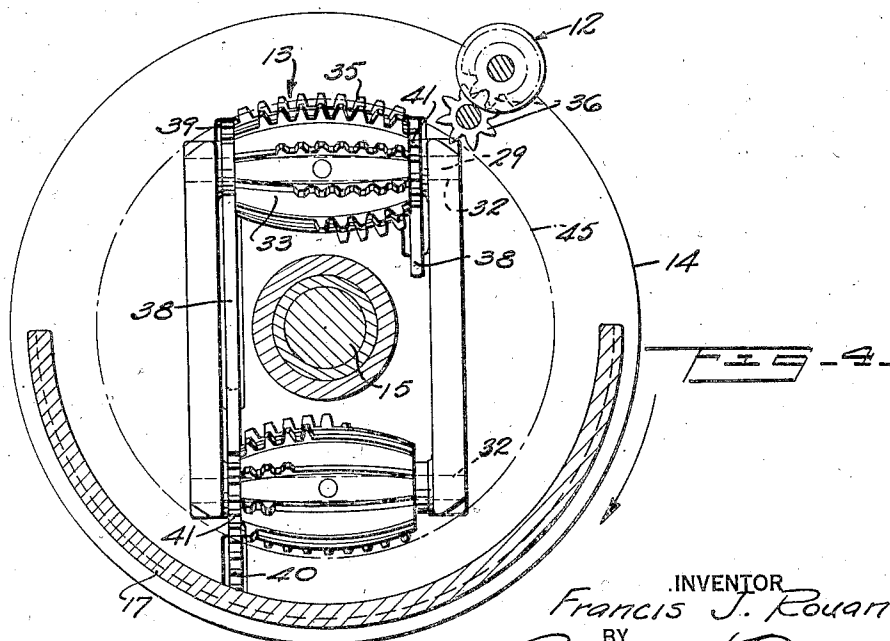
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3 Sheets-Sheet 3



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2,306,499

REGISTER ACTUATOR

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Application July 20, 1940, Serial No. 346,506

5 Claims. (Cl. 235—101)

This invention relates to a selectively adjustable register actuator gear which is particularly adapted for use in a postage printing and registering machine, commonly known as a metered mailing machine.

Metered mailing machines include two principal units, a printing unit and a registering unit. The printing unit is provided to print a postal stamp and value impression on mail matter, in accordance with the postage required. The registering unit is provided to register the currency value of the printed stamp.

It is the principal object of the invention to provide a new and novel type of selectively adjustable gear for actuating the registering unit, which, owing to its construction, is adapted to simplify the structure for the combined setting of a type value in the type wheels and the toothed member in the gear agreeing with said selected value.

It is also an object to provide a novel form of adjustable register actuating gear which has a plurality of variable toothed segments rotatably supported on the gear structure.

It is another object to provide a register actuating gear wherein the effective operating toothed portion includes a plurality of variable toothed segments which are rotatably adjustable transversely through the normal pitch circle of the gear.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that various changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

A preferred embodiment of the invention is illustrated in the accompanying drawings, wherein;

Fig. 1 is a front elevational view including a section through the printing drum and with parts broken away;

Fig. 2 is a vertical sectional view taken along the line 2—2 of Fig. 1;

Fig. 3 is a plan elevational view showing the printing drum and register actuating gear; and

Fig. 4 is a vertical sectional view taken along the line 4—4 of Fig. 3.

The machine comprises a base 10 having a detachable meter unit 11 mounted thereon. Within the meter unit is included a registering mechanism 12, a register actuator 13 and a printing drum 14. The printing drum is carried by a horizontally

disposed shaft 15, which shaft is mounted in bearings 16—16 forming a part of a supporting structure 17.

A drive is provided by means of a gear 18 fixed on the shaft 15 and a gear 19 meshing therewith which is supported on a drive shaft 21. Said drive shaft 21 is supported in bearings 22—23 forming a part of the support structure 17 and has one end thereof extended outwardly through the casing 24 of the meter unit. A crank 25 is fixed to said outwardly extending end of the shaft 21 and normally rests against a limit stop 26 which limits the movement of said crank to one revolution. The stop is removable from the path of the crank by means of a thumb lever 27 in a manner well known in devices of this character.

Type wheels 28—28 are rotatably supported upon a shaft 29 carried by bearings 31—31 within the meter drum and each has a pinion 39 joined therewith.

The register actuators 13 are also supported by the printing drum structure, the same being rotatably supported in bearings 32—32 projecting rearwardly from the inner wall of the printing drum. Each of said actuators comprises a hub 33 having a shaft 34 therethrough, which shaft is mounted within the bearings 32—32. A plurality of gear segments 35 extend radially outward from the hub 33, each segment having a different number of gear teeth thereon. By rotating the actuator, one of the several gear segments is adapted to be moved to an operative position with relation to the registering mechanism 12, that is, the segment in operative position becomes aligned with gearing 36 associated with one of the register wheels of said registering mechanism. The teeth on each of said segments agree in number with the unit value of the value type on the type wheel 28 which is associated therewith. A blank space is also provided between two of the segments as indicated at 37 to provide for a zero type position.

It will be noted that the actuators 13 have their axes parallel to the axis of the type wheels and hence make it particularly convenient to connect both a type wheel and actuator by means of single connecting member, a gear sector 38. As shown in Fig. 2 the sector 38 has one set of teeth 39 which meshes directly with the pinion 30, forming part of one of the type wheels, and another set of teeth 40 meshes with a pinion 41 which forms a part of one of the actuator gears. Suitable setting levers 42 extend outwardly from the segments 38 beyond the front of the printing drum, where they are adapted to be manipulated by an operator to adjust the value type wheels to a selected value

and to simultaneously adjust the actuators to move the segments which agree with said type value to operative positions.

The gear sectors 38 are rotatably mounted upon a shaft 43 which shaft is supported in bearings 44—44 extending outwardly from the inner wall of the drum housing.

When one of the radial gear segments 35 of the actuator is in operative relation with the registering unit gearing 36, as shown in Fig. 4, the toothed portion thereof is on the pitch circle, designated by the dot and dash line 45. During the rotation of the drum, when printing is effected, the said segmental portion will rotate through the path of the pitch circle and operate the gearing 36.

Hence, the complete actuator gear actually comprises the supporting structure, which includes the printing drum 14 and bearings 32—32, in addition to the hub portions 33 with their variable teeth 35. The hub 33 provides for the adjustability of the teeth, and when once adjusted, the supporting structure provides for the direction of rotation of the gear as a whole to effect the drive of the register.

When adjusting an actuator 13, as by means of a setting lever 42, the actuator is rotated about an axis which is parallel to the axis of the type wheels. By means of this arrangement, the number of parts required for the setting of both the type wheels and actuators is reduced to a single element, the sector 38.

In the structure shown, two actuators are provided, one of which operates the units register wheel, and the other of which operates the tens register wheel, the same being set in a staggered relation to provide for the completion of a registering operation by one actuator before the other registering operation is started.

Cooperating with the printing drum is an impression roller 46 which is suitably mounted in a bracket 47 in the usual manner known in devices of this character.

In operation, the operator sets the setting levers opposite index numbers indicated at 48 to agree with the value which it is desired to print, which operation will provide for the simultaneous setting of both the type wheels and actuator through movement of the sectors 38. The crank 25 is then rotated through one revolution which movement is transmitted through the gearing 18—19, and shaft 21 to the printing drum 14. The drum 14 is thus rotated through one revolution to print the postage indicia and value impression upon a letter which is passed between said printing drum 14 and the impression roller 46. Also during said revolution of the drum, the actuators 13 are rotated therewith and the seg-

ment members in operative position will engage with the gearing 36 of the registering mechanism to enter therein the value of the printed impression.

Having described the invention, what is claimed is:

1. In a selectively adjustable gear, a variable toothed element comprising a hub having toothed segments thereon and rotatable transversely through the normal pitch circle of the gear to adjust a selected segment in an operative position, and a manipulative gear sector in driving engagement with said hub.

2. In a variable toothed gear, a rotatable support member, and a variable toothed member comprising a plurality of toothed segments rotatably supported by the support member and rotatable about an axis transversely disposed relative to the axis of the support member, whereby each of said toothed segments is individually adjustable through the same relative path to an operative driving position on said rotatable support member.

3. In a selectively adjustable gear, a rotatable support, and a rotatable element carried by said support, said element comprising a plurality of variable toothed segments rotatable about an axis running longitudinally of the segments with the axis of the rotatable element so positioned as to effect adjustment of the toothed segments through the pitch circle of gear.

4. In combination, a rotary printing drum, a value type wheel having an attached pinion and rotatably mounted in the drum on an axis transverse to the drum axis, an actuator member connected with the drum to rotate therewith, a settable variable toothed element including a pinion connected therewith and rotatably supported by the actuator member on an axis parallel to the type wheel axis, whereby variable numbers of teeth may be adjusted to an actuating position, and a manipulative toothed member having teeth thereon meshing with both the type wheel pinion and variable toothed member pinion, to effect simultaneous adjustment thereof.

5. The combination with a toothed member, of a variable toothed gear structure including a rotatable support, a variable toothed segmental gear carried by said support on an axis transverse to the support axis, the teeth of the variable toothed gear being adjustable to place a predetermined segment in an operative position with relation to the toothed member upon rotating the variable toothed gear about its axis, and being adapted to effect operation of the toothed member upon rotating the rotatable support about its axis.

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