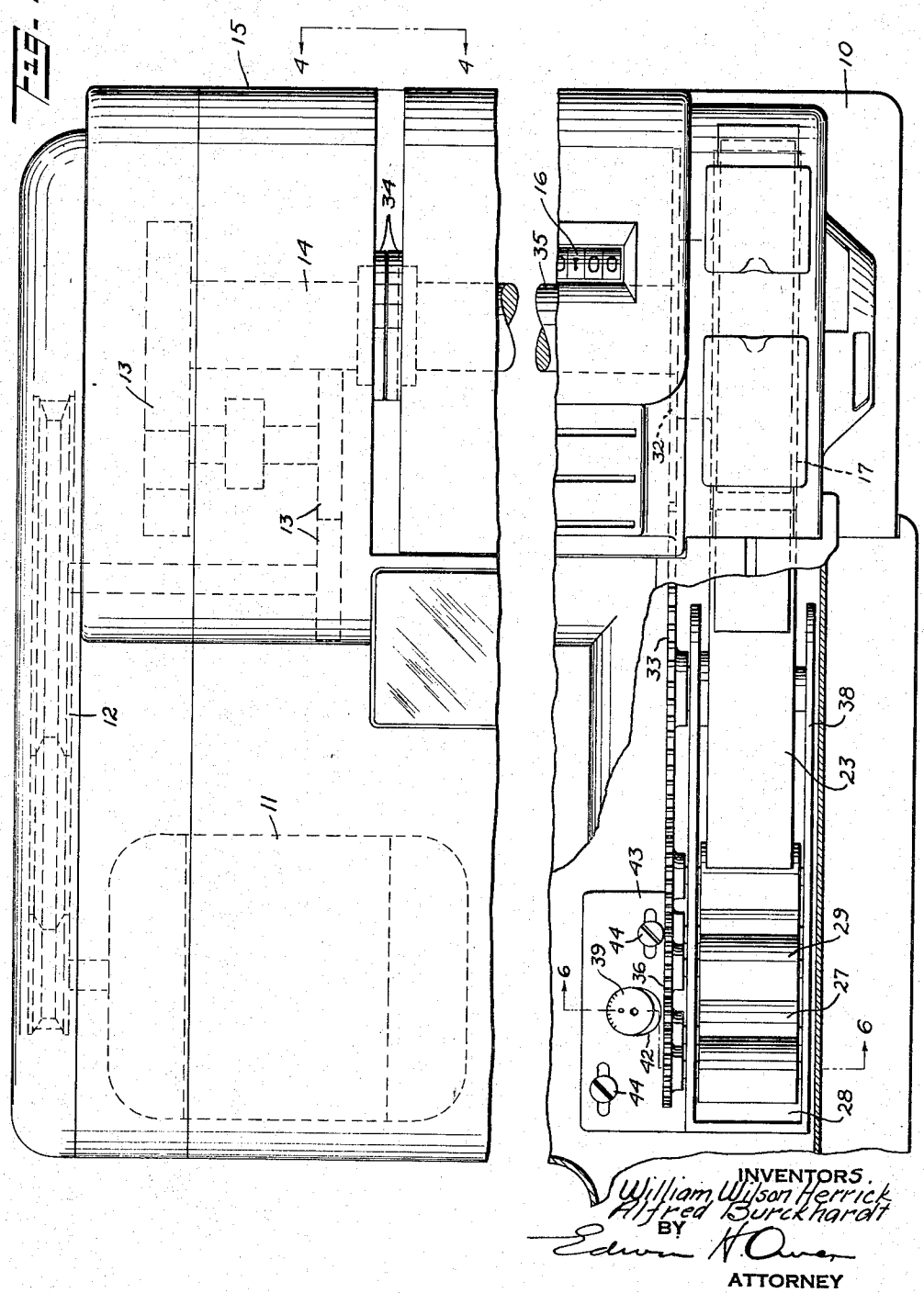
Nov. 24, 1953 W. W. HERRICK ET AL 2,660,111

POSTAGE PRINTING DEVICE USING DIRECT AND OFFSET PRINTING

Filed June 24, 1949 3 Sheets-Sheet 1

Fig. 1.



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POSTAGE PRINTING DEVICE USING DIRECT AND OFFSET PRINTING

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Fig. 3.

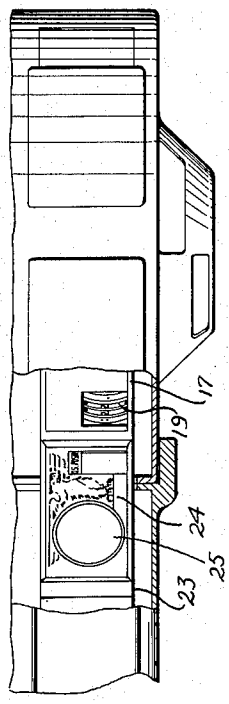


Fig. 2.

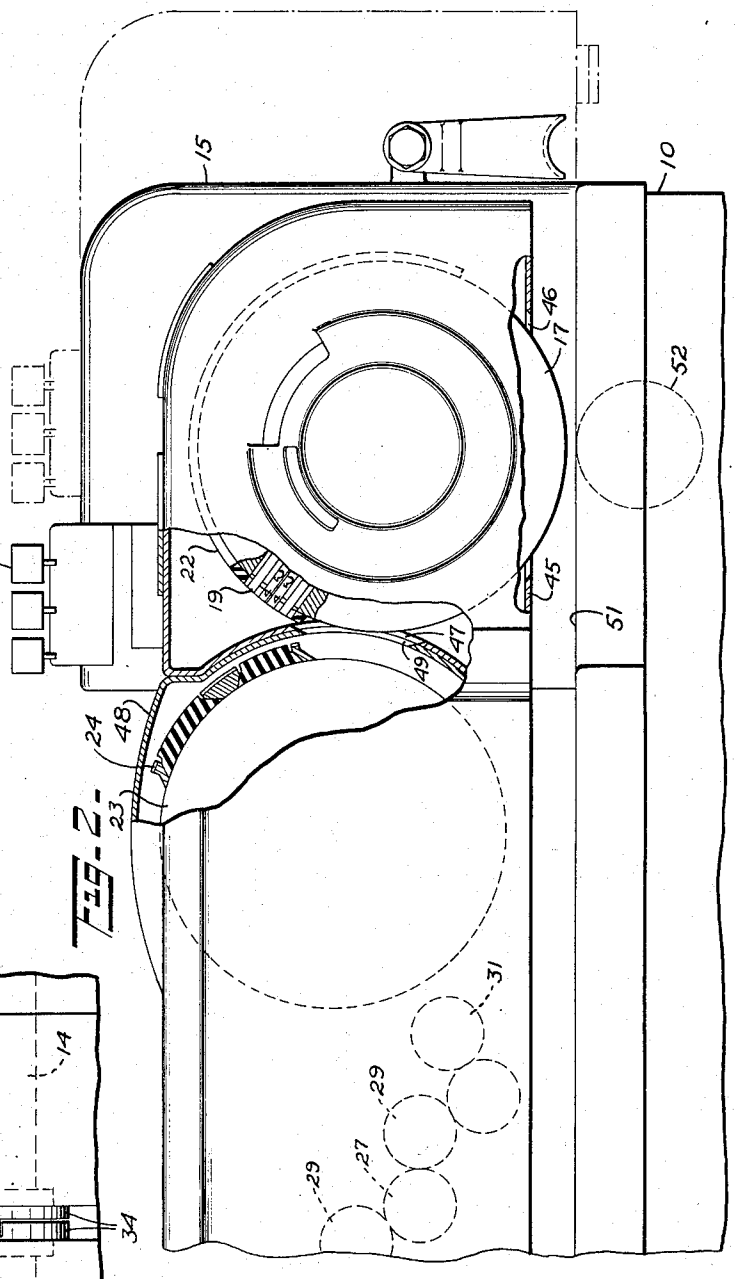
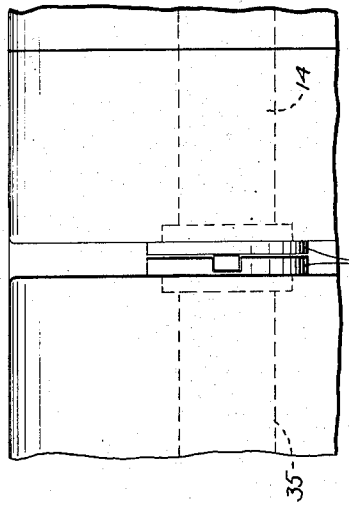


Fig. 4.



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Fig. 9.

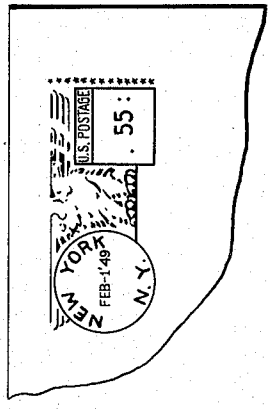


Fig. 8.

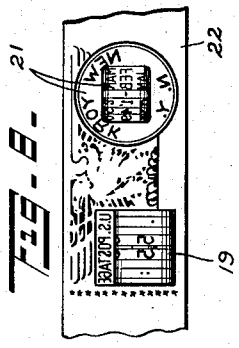


Fig. 7.

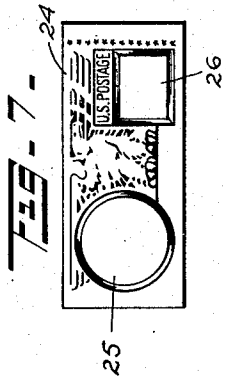


Fig. 5.

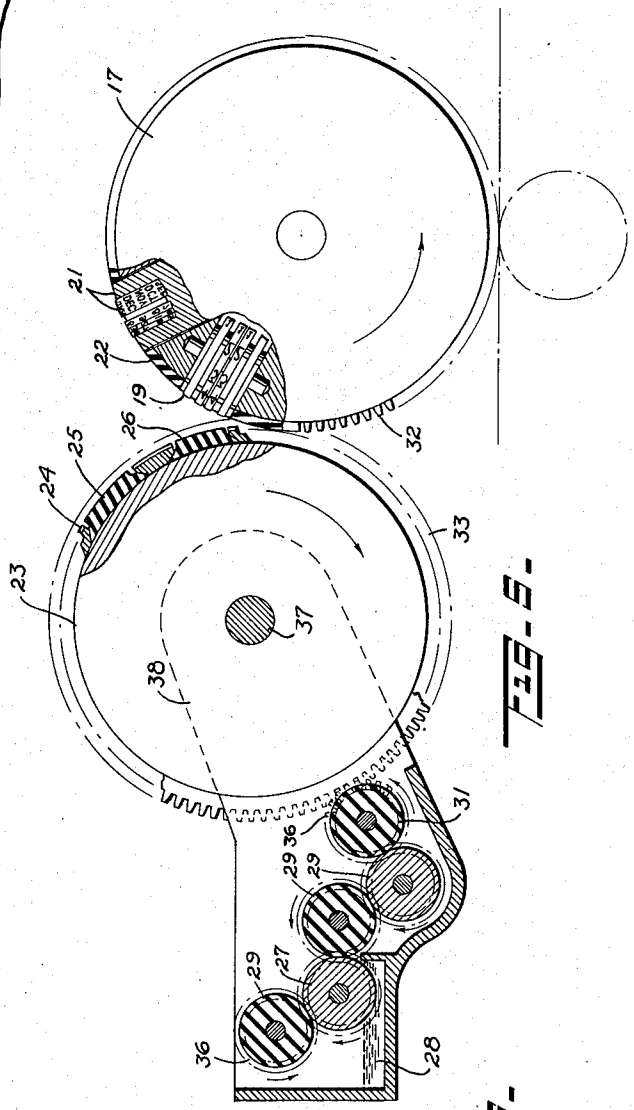
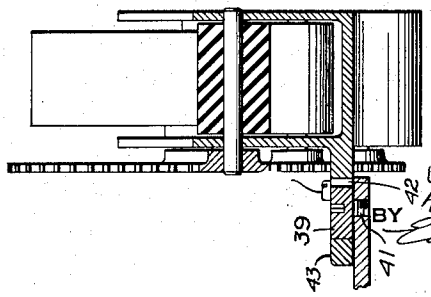


Fig. 6.



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UNITED STATES PATENT OFFICE

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POSTAGE PRINTING DEVICE USING DIRECT AND OFFSET PRINTING

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Application June 24, 1949, Serial No. 101,204

3 Claims. (Cl. 101—91)

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This invention relates to the printing mechanism of a postage printing device.

In machines of this character now in use, the printing of postage impressions is effected upon letters and the like, by means of a rotary printing element, wherein the stamp design or indicia, the value, date and town, are all included in one printing die member. With this arrangement of the printing element, it has always been necessary to take every precaution, through the use of die protection means, to prevent the fraudulent wiping of impressions from the printing die surface at any location where the die would normally become exposed such as at the inking or printing positions.

Various types of die protection devices have been provided, whereby only a restricted portion of the die is exposed at any given time, and certain blocking devices have been introduced which prevent contact of an envelope surface with the indicia printing die when attempts are made to print an impression in any other than the normal manner. Further, special intricate locking devices have been provided, whereby the rotary printing element is prevented from being moved to a printing position when the unit which houses the printing element is removed from the power base. Other devices have also been provided to effect tripping of further spring loaded locking elements, etc., if anyone attempted to fraudulently manipulate the device. For examples of the above, attention is called to Patent No. 2,141,119.

In the arrangement according to this invention, all of the above described precautionary devices are eliminated. Instead of using the direct method of printing postage impressions, a modified offset method of printing is provided wherein the indicia portion of the impression is applied to the envelope from a rotary printing element having an offset imprinter or blanket, while the value printing, also the town and date printing elements, print directly thereon.

The offset printing area or blanket receives a direct impression of the stamp design or indicia portion from an offset printing element, and this impression is transferred to the letter during a machine cycle of operation. By this method of printing, it is not possible to receive more than one good impression of the stamp design during a printing cycle, and hence, the fraudulent wiping of more than the one legitimate impression, is not possible.

In addition to the elimination of expensive die protection devices, offset postage printing permits

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far more engraving detail in the postage design portion thereof, and produces consistently good postage impressions, whether the material within an envelope is perfectly flat or not.

It is the principal object of the invention therefore, to provide postage printing means wherein at least a portion of the impression printed on the letters is effected through offset printing means.

It is another object to provide offset printing means for the printing of postage impressions, wherein settable printing elements form direct printing portions of the offset imprinter or blanket.

It is another object to provide printing means for the printing of postage impressions, wherein the postage design or indicia printing means is associated with one printing cylinder, whereas, the settable value and date printing members are associated with another printing cylinder, to thereby prevent the fraudulent taking of a combined indicia and value impression from one printing surface.

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 plan view of a postage printing machine with parts broken away;

Fig. 2 is a front view of Fig. 1 with parts broken away;

Fig. 3 is a fragmentary plan view with parts broken away, showing the printing areas of portions of the printing elements;

Fig. 4 is a view taken in the direction of the arrows 4—4 Fig. 1, showing a means for coupling the printing unit to the power drive;

Fig. 5 is a part elevational and part sectional view of the printing and inker elements;

Fig. 6 is an end sectional view taken on the line 6—6 of Fig. 1;

Fig. 7 is a face view of the postage indicia printdie;

Fig. 8 is a face view of the postage indicia as impressed upon the offset imprinter or blanket of the direct printing member, also the direct printing value, town and dater elements; and

Fig. 9 represents an impression applied to a letter by the printing member indicated in Fig. 8.

Referring to the drawings in detail, a postage printing machine normally comprises a power base 10 which houses power drive means, including a motor 11, pulley and belt members 12 and gearing 13, to effect the drive of a power shaft 14.

A printing and registering unit is detachably mounted on the power base and comprises a casing 15, within which is provided suitable registering mechanism, indicated at 16, and a direct printing cylinder 17. Value setting levers 18 project beyond the casing 15 and are associated with value printing wheels 19, in the printing cylinder 17, to effect the setting of said wheels to a value which it is desired to print. A town and dater die structure 21 is also provided in the printing cylinder 17 and cooperates with the value printing wheels 19 to effect the direct printing of the value, town and date. All of the above elements form a part of the standard structure of a postage printing machine and a more detailed description will be found in the aforementioned patent.

Said printing cylinder 17 also has a blank printing surface or offset blanket 22, which will be referred to as the offset imprinter surface, in that it will receive an impression from another direct printing source. The latter direct printing source comprises an offset printing cylinder 23, which has a postage design or indicia printing element 24 associated therewith. Said indicia printing element 24 is arranged to cooperate with the value printing wheels 19, and the town and dater die structure 21, to produce a finished printed impression upon an envelope or other article of mail matter, of the type indicated in Fig. 9. The actual indicia portion 24 is represented in Fig. 7. Also associated with said indicia printing die 24 are two inker pad portions, one indicated at 25 for the inking of the town and dater die 21, and the other indicated at 26 for the inking of the value printing wheels 19.

Inking mechanism is provided, as best indicated in Fig. 5, and preferably comprises an ink roller 27, having a portion thereof submerged in an ink well 28, which roller cooperates with a series of ducter rollers 29 to supply a consistent film of ink to an ink transfer roller 31. Said latter roller 31 is mounted in the path of the indicia die 24 and its pad portions 25—26, in such manner that when the offset printing cylinder 23 is rotated, ink will be supplied to the said indicia member and pad portions. When said indicia portion 24 reaches the direct printing cylinder 17, the inked indicia surface will be transferred to the offset printing surface 22 in proper relation to the value printing wheels 19 and town and dater die members 21. Gears 32—33, connected with the printing cylinders 17 and 23 respectively, are in mesh when the detachable printing unit 15 is mounted in a printing position on the base 10, and are driven from the power shaft 14 at a ratio which will effect the proper synchronization of said printing cylinders.

A connection between the power shaft 14 and printing cylinder 17, is provided through a coupling element indicated at 34, Fig. 4, to couple said shaft 14 with a printing cylinder drive shaft 35. Gearing 36 is provided for the drive of the ink rollers 27—29 and is driven from gear 33.

The offset printing cylinder 23 is supported on a shaft 37, carried within the two walls of a bracket 38, which walls also form a support for the ink rollers 27—29. Said bracket is further arranged to provide for minute adjustment of the offset printing cylinder 23 relative to the printing cylinder 17, which may be accomplished by means of an eccentric portion 39 of a rotative element 41, in cooperative relation with an elongated slot 42 in the bracket 38. After adjustment, the bracket 38 is clamped to the power base 10 by means of screws 44—44.

The direct printing cylinder 17 is shielded by means of a guard 45, which guard has an opening 46 at the base thereof to permit printing contact with letters or other mail matter passed therebeneath. A second opening is provided at 47, at a location where the indicia of the printing cylinder 23 engages the offset printing surface of the printing cylinder 17.

The offset printing cylinder 23 is concealed beneath a guard 48, fixed to the base 10, there being but a single opening 49, which coincides with the opening 47 of the guard 45. Although shielding of the printing dies 19, 21 and 24 is provided, it will be seen that a simple shielding arrangement is all that is required to provide adequate protection against the wiping of fraudulent postage impressions.

When letters are passed through the machine, they are either power fed or hand fed along the table surface 51 of the machine base, then between the rotating direct printing cylinder 17 and a platen roller 52. A detail description of a typical postage printing operation will be found in the aforementioned Patent No. 2,141,119.

Having described the invention, what is claimed is:

1. In a postage printing machine having a base and a detachable printing unit wherein the printing unit becomes operable for printing a complete postage indicia, postage value, town and date, when the detachable unit is attached to the machine base and is sporadically operated; the combination of two coacting rotary printing elements, one of said printing elements comprising an offset printing cylinder mounted on the machine base and including type bearing postal indicia and inker elements; the second rotary printing element comprising a direct printing cylinder supported by the detachable printing unit and having an offset imprinter surface with direct type imprinters combined therewith, the direct type imprinters coacting with the inker elements during a printing cycle of operation, gearing associated with said printing cylinders arranged in synchronously operative driving relation when the detachable unit is attached in a printing position on the machine base, inking means operatively positioned relative to the type bearing postal indicia and inker elements of the offset printing cylinder, and a drive to rotate said printing cylinders; whereby the postal indicia impression and ink from the printing cylinder associated with the machine base are transferred to the printing cylinder associated with the detachable printing unit, and a complete postal indicia impression along with the impression from the direct type imprinters are printed by the direct printing cylinder on an article of mailmatter presented thereto.

2. In a postage printing machine having a base and a detachable printing unit wherein the printing unit becomes operable for printing a complete postage indicia, postage value, town and date when the detachable unit is attached to the machine base; the combination of two associated and coacting rotary printing elements, one of said printing elements comprising an offset printing cylinder mounted on the machine base

and including type bearing postal indicia and inker elements within said indicia die, the second rotary printing element comprising a direct printing cylinder supported by the detachable printing unit and having an offset imprinter surface with direct type imprinters comprising a part of the cylinder and located within the offset imprinter surface, the direct type imprinters coacting with the inker elements during a printing cycle of operation, gearing associated with said printing cylinders arranged in synchronously operative driving relation when the detachable unit is attached in a printing position on the machine base, inking means operatively positioned relative to the postal indicia printing die and inker elements of the offset printing cylinder, and a drive to rotate said printing cylinders; whereby the postal indicia impression and ink from the printing cylinder associated with the machine base are transferred to the printing cylinder associated with the detachable printing unit, and a complete postal indicia impression along with the impression from the direct type imprinters are printed by the direct printing cylinder on an article of mailmatter presented thereto.

3. A postage printing machine having means for producing a single cycle of operations sporadically as desired; a printing cylinder having type wheels settable to expose selected type at the printing surface of the cylinder; an inking cylinder having inking-pad means positioned to engage said type-wheel type; gearing connecting the printing cylinder to the inking cylinder for coordinate cooperative rotation to engage the inking pad means with the type-wheel type to ink the same during rotation of said cylinder in

a cycle of operations of the machine; supplemental printing type carried on the peripheral surface of the inking cylinder; means for applying printing ink to said inking pad means and to said type-wheel type during each cycle of operations of the machine; offset blanket material on said printing cylinder in position to be engaged by the inked supplemental printing type on the inking cylinder to receive a transferable ink image therefrom during each cycle of operations of the machine; and a platen cylinder positioned to press work to be imprinted against said type-wheel type and said indicia-bearing blanket material and transfer the ink thereon to the work during the cycle of operations of the machine.

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ALFRED BURCKHARDT.

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