

Nov. 26, 1968

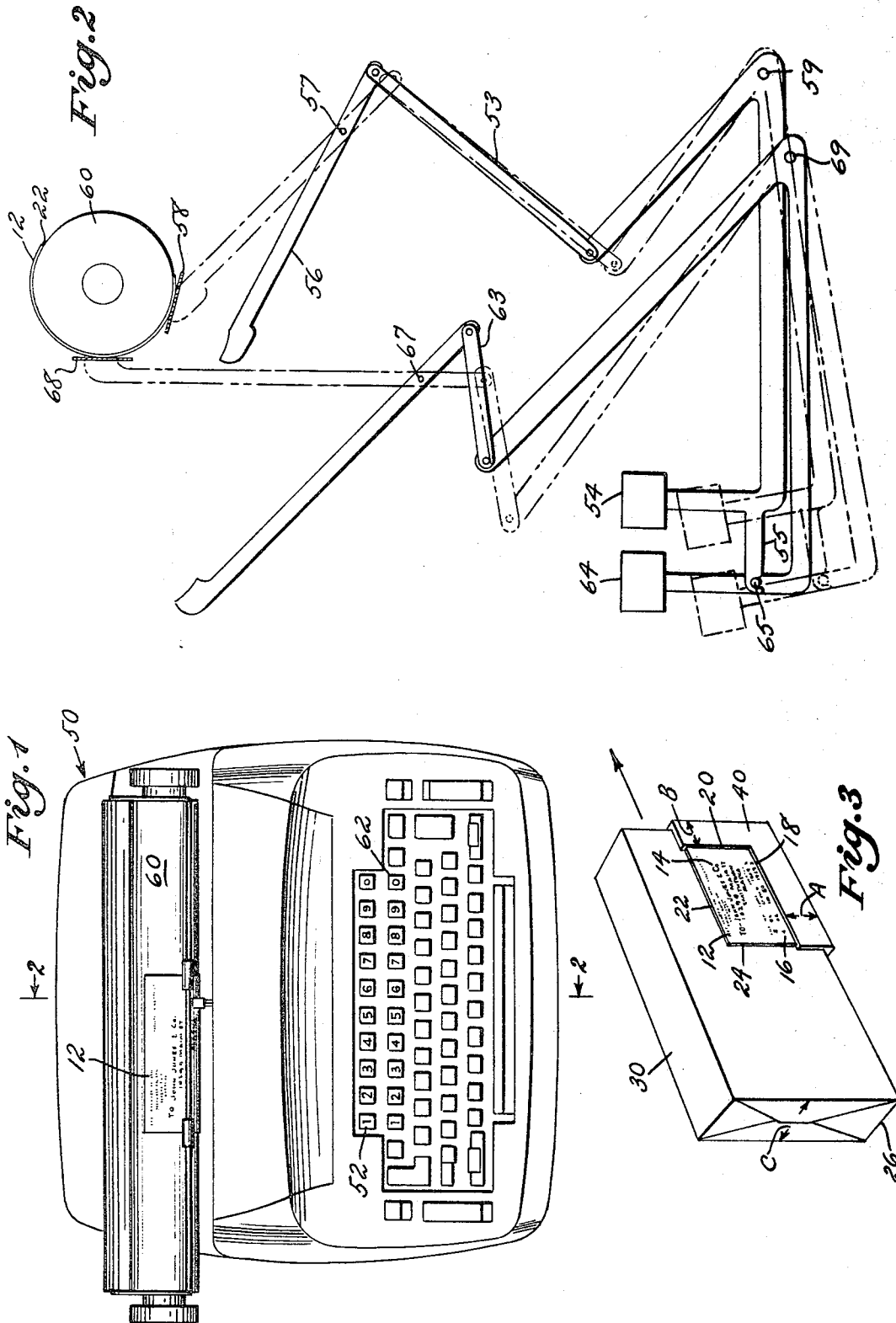
A. JOVIS

3,412,838

PRINTING MEANS FOR SORTING AND ROUTING SYSTEM

Filed Nov. 29, 1966

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

FROM- SAM SMITH & Co. ORDER NO. 1094586
8841 JACKSON ST.
WILLIAMSTOWN
N.Y. 16942

TO- JOHN JONES & Co.
10299 MAIN ST.
SMITHTOWN,
ALASKA

PP. ZONE WT.
4 00 lbs.
4 06 00 80 14692

REQUIRED POSTAGE \$00.80

ZIP - CODE 14692

POSTAL STAMP

Fig. 4

1

3,412,838

PRINTING MEANS FOR SORTING AND ROUTING SYSTEM

Arthur Jovis, New York, N.Y.

(1501 Undercliff Ave., Bronx, N.Y. 10453)

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1 Claim. (Cl. 197—1)

This invention relates generally to means and methods for directing an article to its destination by electronic sorting devices and more particularly to a novel and useful postal or express sorting and/or handling system.

An object of this invention lies in the provision of means and methods for applying to the article predetermined categories of information and intelligence for analysis by a computer.

These objects and other incidental ends and advantages will more fully appear in the progress of this disclosure and be pointed out in the appended claim.

In the drawings in which similar reference characters designate corresponding parts in the several views:

FIGURE 1 is a plan view of a typewriter or billing machine constructed in accordance with the invention.

FIGURE 2 is an enlarged fragmentary elevational view as seen from the plane 2—2 on FIG. 1.

FIGURE 3 is a reduced perspective view.

FIGURE 4 is an enlarged plan view of an address card produced by the typewriter or billing machine of FIGURE 1.

The purpose of the invention is to provide means to process the mail rapidly and precisely without its being touched by human hands or requiring human judgment, in other words to make the handling of the mail completely automatic.

Such means are adapted: to sort out each package by zip code; to check the weight of the package; to determine the parcel post zone; to check the required amount of postage by correlating the weight of the package with the parcel post zone; and to check other factors such as insurance or other special charges.

In accordance with the invention, my system utilizes an address paster or label 12 on which ordinary legible indicia 14a and 14b, and magnetically readable indicia 16 are placed in predetermined position with respect to guiding edges 18 and 20. Edges 22 and 24 may serve as guiding edges, and this will depend upon the positioning of the computer scanner, not shown, with respect to the supported surface 26 of the shipped article 30. Although I have shown article 30 as an oblong package with an added label, this is by way of example only, and this system with minor adaptations may be used with articles of varying shapes and sizes, and can be directly used on envelopes for first and second class mail, and wrappers used on magazines and newspapers, and the like.

This system is also applicable to addressing wrappers used on magazines and newspapers and the like where the information on the indicia 14a and/or 14b and/or 16 is periodically repetitive. The information may be printed on such wrapper by an address plate of the "Addressograph" type using suitably positioned normal and magnetic ink ribbons.

This system is also applicable to the typewritten writing of bank checks, to wit: the filling in of the amount of the check by use of keys 52 after the dollar mark (\$) usually appearing on the bank checks and the simultaneous inscription in magnetically scannable type at another predetermined location on the check, to assist in the electronic sorting of such checks, all as more particularly described in this applicant's patent application Ser. No. 587,525 filed Oct. 18, 1966.

Referring to the address paster or label 12, as a part of processing an order to be shipped by express or parcel

2

post, under general procedure a clerk types out information relating to the order, usually in bill form, with carbon copies distributed to various other departments such as shipping, billing, stock, etc. It is not necessary for the purpose of my invention to go into details of that procedure, but it is an important consideration that as part of the general addressing and billing procedure, the original top sheet includes a detachable label or address paster 12 of the general form shown in FIGURES 3 and 4.

Certain predetermined information is requisite to properly sort and route the article 30 and includes more or less of that shown in line 14b, and hereinafter called "Required Information."

When the "required information" is typed in normal type face on the address paster, it automatically appears in the proper location and in scannable type 16 on the paster at the same time and at the proper location. This translation of the "required information" into computer scannable digits and its transposition to a position in relation to the computer scanner is one of the principal objects of the invention. An order number and other data which will be of value to the user—but not required for shipping purposes—can be added for identification and so forth.

The information is provided at predetermined locations on the address paster. These locations are indicated by marks 32, by weight marks (Lbs.) 34, dollar marks (\$) 36 and/or zip code number 38 to insure that the typist who is preparing the required shipping information shall locate this information in the proper space provided for this purpose thereby properly locating the corresponding scannable numbers 16 on the address paster 12.

The paster is applied to the package 30 at a location determined by the template 40 so that dimension A and dimension B are the same for all packages regardless of their size. Dimension C will be limited by the width capacity of a sorter conveyor belt, mentioned below.

The linkages shown on FIGURE 2 are well known in the typewriter art, including fixed pivots 57, 67, and 59, 69, and links 53 and 63, and are shown by way of example only, as any suitable key and type bar movements may be substituted, including those electrically actuated.

The typewriter or billing machine 50 which in other respects is of standard construction, is provided with a special bank or row 52 of keys 54 and type bars 56 consisting of numerals 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0. Impressions from bars 56 are used only for typing the scannable numbers line 16 by striking the magnetic ink ribbon 58 against label 12 on platen 60 and for no other use whatsoever.

It will be noted that the bottom line which is the magnetically readable indicia 16 which encompasses the information required to route the parcel by zip code, parcel post zone, weight, postage, or any other cogent intelligence etc., and this is "scannable information" which is used in this sorting and routing system.

The row 62 of standard keys 64, actuates the type bars 66 having the regular numerals which print by striking normal ribbon 68 against the label 12 and are never used for "required information."

Keys 54 and 64 are interrelated. As seen in FIGURE 2, key 54 is provided with a member 55 which, when key 54 is depressed, engages a projection 65 causing key 64 to move in unison with key 54. When key 64 is depressed, it operates bar 66 in the normal manner without affecting, and is independent of, bar 56.

Operation

One mode of procedure then is as follows:

After the address paster bearing the "scannable information" has been affixed to the article by means of the

locating template 40, the package 30 is laid on a moving belt and moves (in the direction of the arrow in FIGURE 3) along a channel and in such position that the address paster 12 is positioned in a predetermined relation to the scanners located on the side of the channel. (For large scale shippers, the packages would be arranged in advance on racks which would feed the packages directly from delivery trucks to the belt at the truck ramp in the post office.)

There are a series of electric eyes along the channel, and corresponding light beams are directed across the channel. These beams are successively interrupted by the package as it is carried along the channel by the belt.

As the beam for the first electric eye is interrupted, it energizes the zip code scanner, which then "reads" the zip code 38b which has been magnetically inked on the address paster. This information is then stored in the "memory" of a computer. This computer also has locked in its "memory" the parcel post zone (in relation to the office of origin) of all the other post offices in the country, and from its reading of the zip code it determines the parcel post zone of the package's destination and holds this information in its "memory." At the interruption of the next electric eye beam, the scanner controlling the parcel post zone is energized and "reads" the parcel post zone 32b magnetically inscribed on the address paster. If this reading of the parcel post zone disagrees with the zone number already stored in the computer's memory, the package is rejected to be returned to the sender for correction. If the package is accepted, it proceeds to the next electric eye station which energizes a weighing mechanism and also a scanner to read the weight 34b which has been magnetically inscribed on the address paster. If the weight of the package disagrees with the magnetically inscribed weight, the package is rejected, but if accepted the weight is stored in the computer's "memory" and the package proceeds to the next electric eye station. At this station a scanner "reads" the required postage 36b on the paster and compares this with the amount which the computer has already determined from the stored data of weight and parcel post zone. Again, if there is disagreement the package is rejected otherwise it passes on to the final step which is automatic sorting by zip code. This sorting can be done by means of the zip code already stored in the computer or it may be more practical to "read" the zip code independently of the first reading.

For the purpose of simplicity in the disclosure separate scanners are described for each function. It will be understood, however, that they may be combined into one scanner to selectively feed the separate functions into the computer.

Additional functions may be added such as special handling, insurance, and so on, as required, without changing the basic concept of the invention.

When the package 30 arrives at its last post office destination and is ready for delivery, the postal clerk or mailman by checking arrows 75 will verify that the item for postage in line 16 matches with the stamp 77.

If the clerk, by his examination, finds a disagreement between "Required Postage" 36 and the value of the "Postage Stamp" 77, he will add the necessary postage due notation; thereby assuring that the proper amount of postage is paid.

I wish it to be understood that I do not desire to be limited to the exact details of structure shown and described, for obvious modifications will occur to a person skilled in the art to which the present invention pertains.

I claim:

1. A writing machine comprising: first means to print a line of information in normal type; a second means to print simultaneously a line of corresponding information in magnetic ink type; said machine having a platen, first ribbon, and a second ribbon carrying ink with magnetic particles therein; said first means having a first set of type positioned to strike said first ribbon; said second means having a second set of type positioned to strike said second ribbon; said first and second ribbons being spaced from each other; said first and second means being operable to print either a character from said first set of type or both a character from said first set and said second set of type by actuation of a single key of a key means consisting of only two keys; a first key to move an individual type in the first set of type independent of said second means to print, said first key having a projection; and a second key to move an individual type in the second set of type, said second key having a member which is uni-directionally engageable with said projection; whereby said second key actuates said first key, thereby producing a shipping label with a visible address and a scannable address for mail processing.

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ROBERT E. PULFREY, *Primary Examiner.*

E. S. BURR, *Assistant Examiner.*