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DATA RECORDING FORM

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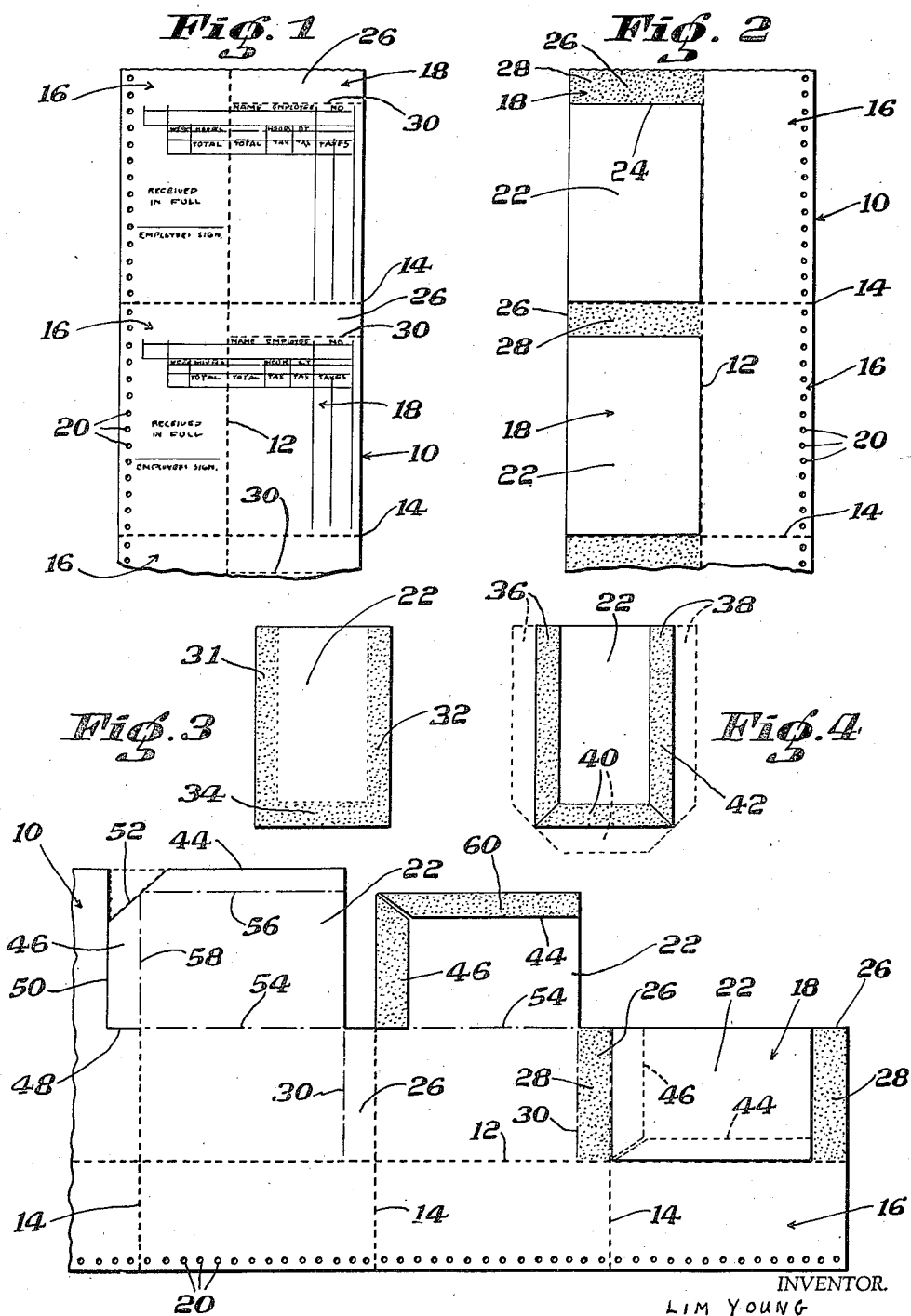


Fig. 5

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DATA RECORDING FORM

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4 Claims. (Cl. 283—62)

The present invention relates to data recording forms for business machines such as computing, tabulating, manifolding or addressing machines, and to methods of making the same. More particularly, the invention concerns such forms, and their manufacture, which are constructed and arranged to co-operate with the feeding and registering mechanism of such machines and a novel construction thereof in which a data receiving part of the form is suitable for use as an envelope, for example, a pay envelope.

In many instances where data is recorded by machine, it is desirable that some or all of the recorded data should appear upon an envelope and also upon a separate paper. For example, in making up a payroll it is often the practice to provide upon each pay envelope, in addition to the employee's name, a record for the employee of his work hours, amount earned, deductions, etc. for the period covered, and to provide also, on another paper, an employer's record which includes some or all of the same data, the latter record being generally used as a receipt which is signed by the employee at the time he receives his pay. Another example is in billing where it is usual for the customer's name and address to appear upon the face of the bill as well as upon the envelope.

An object of the present invention is to provide a novel recording form by means of which it is possible for a manifolding machine or the like, of conventional construction, to record data upon an envelope and other related paper in a single operation. Another object is to facilitate the use of envelopes in recording machines by providing a novel multiple form strip of series connected envelopes which is provided with means to enable the envelopes to be automatically, accurately fed to and registered with the recording mechanism of such machines by feeding and registering mechanism commonly employed therein. A further object is to provide a novel form or multiple form strip for recording machines, which is particularly suitable for payroll work, whereof each form comprises a data receiving portion forming part of an envelope and another data receiving portion detachably connected thereto.

The foregoing and other objects and advantages of the invention will be readily apparent from the ensuing particular description in conjunction with the accompanying drawing, wherein:

Fig. 1 is a front plan view of a portion of a multiple form strip of the present invention;

Fig. 2 is a rear plan view of the strip portion shown in Fig. 1;

Fig. 3 is a plan view of an envelope backing piece that may be used in making form strips according to the invention;

Fig. 4 is a plan view of a modified envelope backing piece;

Fig. 5 is a rear plan view of a form strip of the invention in process of manufacture, illustrating from left to right successive steps performed in making the individual forms of the strip in a preferred practice.

Referring now to the embodiments illustrated in the accompanying drawing, Figs. 1 and 2 show, respectively, the front and reverse sides of a multiple recording form strip of the invention, suitable for use in a computing manifold machine of an ordinary type used in payroll work, the forms being constructed and arranged to enable the machine to record in duplicate upon a pay envelope and employer's receipt, at one operation, computed pay data of an employee. The front of the strip, shown in Fig. 1, comprises an elongated unitary web 10 of paper of uniform width. Between and parallel to the side margins of the web is a longitudinal line of scoring or perforations 12 extending the full length of the strip, and transverse scoring or perforation lines 14, extending the full width of the strip at right angles to the line 12, are uniformly spaced apart longitudinally of the web. Transverse scoring lines 14 divide the strip into individual recording forms which are readily separable from, but still integral with, each other at their ends and these forms are in turn each divided into two parts 16 and 18, which are readily separable from, but still integral with, each other along their common side edge formed by the scored line 12.

Extending longitudinally of the web 10 for its full length, within the form parts 16 close to and parallel to their outer side edge, is a row of apertures 20 of predetermined uniform size, shape and spacing. These apertures 20 are designed to co-operate with the feeding and registering mechanism common in machines of the type concerned, consisting of a series of pins on a wheel or endless chain which successively enter the apertures 20 and advance the strip forwardly into the machine until an individual form of the strip is in accurate registry with the recording mechanism.

In the embodiment illustrated in Fig. 1, the part 16 of each form is intended as an employer's receipt and record of payment and the part 18 is intended as an employee's pay record. The front face of these parts is provided with appropriate printed matter to this end. Thus, there may be printed on the part 16, as indicated, a line for employee's signature with accompanying acknowledgment of payment, and spaces marked off by lines and designated by appropriate words or symbols for data recorded by the machine, such as the employee's number, the period of time covered, the number of hours worked and the total pay, and on the part 18, designated spaces

for such data and also additional data such as overtime, deductions for taxes, etc. The printed matter is spaced a predetermined distance below the upper end of each form part 18 for a reason hereinafter explained.

It will be understood that the strip is fed into the recording machine by the pin feeding mechanism until the data receiving spaces of a form are in accurate registry with the recording mechanism of the machine. The machine will then be operated to record the proper data in the spaces provided therefor on each part 16 and 18 of the form. The feeding mechanism then advances the strip again until the next succeeding form of the strip is registered with the recording mechanism, and so on.

Referring now to the back of the strip or web 10, as shown in Fig. 2, there is provided upon each part 18 of each form of the strip a backing 22 which forms, with the rest of said part 18, an envelope suitable to receive a worker's pay. As shown, this backing 22 extends the full width of the part 18 and from the lower end to adjacent the upper end of said part, and it is attached at its side and lower end margins to the side and lower end margins of the part 18. The upper edge 24 of backing 22 is not secured to the part 18 except at its side edges and thus provides an access opening to the interior of the envelope.

The portion 26 of the form part 18 which extends beyond the edge 24 of backing 22 forms a sealing flap for the envelope and to this end may, as shown, be provided on its back side with a coating of adhesive 28. To facilitate folding of this flap, it may be provided with a fold line along its lower edge adjacent edge 24 as indicated at 30 in Fig. 1. As shown in Fig. 1, the printing on the front of part 18 of each form is spaced below the flap portion 26 so that the latter can be folded back and sealed over the backing 22 without displacing printed matter from the front of part 18.

Backing 22 may be provided in various ways. As shown in Fig. 3, the backing may be a piece of paper of the same dimensions as desired for the envelope, provided on one face with marginal coatings of adhesive 31 and 32 along the two side edges and 34 along the bottom edge, by which it is attached to the form part 18. Or, as shown in Fig. 4, backing 22 may be a paper strip wider and longer than the dimensions of the finished envelope having its side margin portions 36 and 38 and its bottom margin 40 folded back 180°, as indicated by the dotted lines, and provided on their exposed face with adhesive 42 by which the backing is attached to the part 18, this construction forming a more roomy envelope than that of Fig. 3. The folding of these marginal parts is facilitated by first cutting off the corners where they intersect, as indicated by the dotted lines.

Again, and preferably, backing 22 may be integral with part 18 along its outer side edge, as shown in Fig. 5, in which case it need be secured to the part 18 along only two of its margins, side margin 44 and bottom margin 46.

An economical method of making form strips of the invention embodying this last named type of backing from a single strip of paper is illustrated in Fig. 5. The left hand end of said figure shows the paper web 10 after the first step of the process has been performed, that of punching the feed and registering apertures 20 along one side margin of the strip. This is by preference the first step of the process as the presence of these apertures in the strip facilitates the performance of subsequent manufacturing steps by mechanical

means, permitting the use of pin feed and registry devices in such means. Mechanical punching means for providing these apertures 20 of uniform predetermined size and spacing are available and will preferably be used.

Referring to the left hand end of Fig. 5, it will be observed that the web 10 in its initial stages of processing is substantially wider than the width of the finished form strip shown at the right hand end of said figure. Preferably, after the apertures 20 have been punched, the blank is subjected to transverse scoring operations which produce the scoring lines 14 between successive forms of the strip, these lines extending from the margin of the web 10 toward the opposite margin for the predetermined width of the finished strip. At the inner end of each said transverse scoring line a short rearward longitudinal cut 48 is made which defines the outer side edge of the flap portion 26 of the succeeding form and at the rearward end of said longitudinal cut a transverse cut 50 is made extending from the cut 48 to the side edge of the web opposite the side edge adjacent the apertures 20. This cut 50 separates the rearward end of the backing part 22 for the form forwardly of the scoring line 14 from the forward end of the backing 22 for the next succeeding form. As shown, a cut 52 is also made from the cut 50 near its outer end diagonally forward to the adjacent edge of the web, thus removing the bottom outer corner of the backing 22 (shown in dotted lines) ahead of said cut 50.

The blank is subjected to longitudinal scoring to form the scored line 12 which separates each form into the parts 16 and 18 and is also creased longitudinally at 54 along the juncture of backing 22 and form part 18 to facilitate folding of the latter over the former, longitudinally on the line 56 and transversely on the line 58 to facilitate infolding of the marginal parts 44 and 46 respectively of the backing, and transversely on the line 30 to facilitate folding of the flap portion 26 of form part 18.

Marginal parts 44 and 46 are then folded inwardly over backing 22, their exposed face is provided with a coating of adhesive 60, and the backing 22 is folded over the corresponding form part 18 and sealed thereto by means of the adhesive 60. Adhesive 28 is applied to the rear face of flaps 26 of form parts 18 and the strip is structurally completed. Printing may be applied to the front face of the strip in any convenient manner during any stage of its manufacture or after it has been structurally completed.

I prefer to secure the backing over the form part 18 by means of infolded margins as 44 and 46, since this provides a roomy envelope. It is not necessary to do this, however. For example, the starting width of the web 10 may be made less than that indicated in Fig. 5 by the width of the margin 44, the margin part 46 may be entirely removed by a cut in place of the fold line 58. The backing 22 may then be secured to the form part 18 by adhesive along its outer side and bottom margin to form a completed strip which differs from that of Fig. 5 only in the absence of infolding of the margins of the backing that are adhesively attached to the form part.

In making the form strips with separate backings 22 such as shown in Figs. 3 or 4, I utilize two paper webs. One, conforming in width and length to the width and length of the finished strip, I process to provide the scoring lines 12 and 14, the apertures 20, the fold line 30 and adhesive 28 if these are desired, and the print-

ing on the front face. The other, conforming in width to that desired for the backings, I process to provide individual backings such as shown in Figs. 3 or 4 and apply each backing to the rear face of a form part 18 of the first web to complete the form strip.

While it is advantageous for many purposes to have the form part 16 a data-receiving part of each form, this is not essential for some purposes. For example, the strip of connected envelopes arranged as recording forms with marginal feeding and registering means which the invention provides is, of itself, advantageous over previously existent envelope arrangements for recording purposes. When the part 16 is not used as a record-receiving part of the form, it will ordinarily be made only wide enough to contain the apertures 20 to avoid waste of paper.

After recording of the forms has been completed, the individual forms of the strip may be separated by tearing along the scoring lines 14 and the parts 16 and 18 of each form may be separated by tearing along the scoring line 12. If the part 16 of the form is to be used as a receipt slip, it will ordinarily remain integral with the part 18 until the envelope is transferred, being then removed, signed by the transferee and returned to the transferor.

It will be obvious that the embodiments illustrated and described are susceptible of various modifications in detail within the scope of the invention and that I do not intend the invention to be limited thereto, but only as may be required by the appended claims.

I claim:

1. A multiple form strip for a recording machine of the type which includes laterally spaced printing mechanisms for recording duplicate data simultaneously at laterally spaced intervals and which also includes a pin feed device at one side of said mechanisms, comprising an elongated paper web having along one side margin thereof a row of apertures for receiving the pins of said pin feed device, said web presenting upon the front face thereof successive pairs of laterally spaced data receiving forms, the forms of each pair being so positioned with respect to said apertures as to register respectively with said laterally spaced printing mechanisms of said machine successively as the web is advanced therethrough by engagement of said pin feed device with said apertures, said web having mounted upon its rear face a succession of longitudinally spaced backings each underlying only that web portion which constitutes one of said data receiving forms of each pair and forming with said portion an envelope, said web being divisible transversely between each pair of forms and longitudinally between the forms of each pair beyond the confines of said backings.

2. A multiple form strip for a recording machine of the type which includes laterally spaced printing mechanisms for recording duplicate data simultaneously at laterally spaced intervals and which also includes a pin feed device at one side of said mechanisms, comprising an elongated paper web having along one side margin thereof a row of apertures for receiving the pins of said pin feed device, said web presenting upon the front face thereof successive pairs of laterally spaced data receiving forms, the forms of each pair being so positioned with respect to said apertures as to register respectively with said laterally spaced printing mechanisms of said machine successively as the web is advanced there-

through by engagement of said pin feed device with said apertures, said web having longitudinally spaced and separated portions of its side marginal area opposite the margin thereof containing said apertures infolded and fastened, along two edge portions thereof, to the rear face of the web portions presenting on their front face the form of said pairs of forms more remote from said row of apertures so that said portions form a succession of envelopes, said web being divisible transversely between each pair of forms and longitudinally between the forms of each pair beyond the confines of said infolded marginal portions thereof.

3. A multiple form strip for a recording machine of the type which includes laterally spaced printing mechanisms for recording duplicate data simultaneously at laterally spaced intervals and which also includes a pin feed device at one side of said mechanisms, comprising an elongated paper web having along one side margin thereof a row of apertures for receiving the pins of said pin feed device, said web presenting upon the front face thereof successive pairs of laterally spaced data receiving forms, the forms of each pair being so positioned with respect to said apertures as to register respectively with said laterally spaced printing mechanisms of said machine successively as the web is advanced therethrough by engagement of said pin feed device with said apertures, said web having mounted upon its rear face a succession of longitudinally spaced backings each underlying only that web portion which constitutes the one of said data receiving forms of each pair which is more remote from said marginal row of apertures and forming with said portion an envelope, the structure of said web being weakened on a longitudinal line between the forms of each pair to facilitate separation of said forms, said web being divisible transversely between each pair of forms beyond the confines of said backings.

4. A multiple form strip for a recording machine of the type which includes laterally spaced printing mechanisms for recording duplicate data simultaneously at laterally spaced intervals and which also includes a pin feed device at one side of said mechanisms, comprising an elongated paper web having along one side margin thereof a row of apertures for receiving the pins of said pin feed device, said web presenting upon the front face thereof successive pairs of laterally spaced data receiving forms, the forms of each pair being so positioned with respect to said apertures as to register respectively with said laterally spaced printing mechanisms of said machine successively as the web is advanced therethrough by engagement of said pin feed device with said apertures, said web having longitudinally spaced and separated portions of its side marginal area opposite the margin thereof containing said apertures infolded and fastened, along two edge portions thereof, to the rear face of the web portions presenting on their front face the form of said pairs of forms more remote from said row of apertures so that said portions form a succession of envelopes, the structure of said web being weakened on a longitudinal line between the forms of each pair to facilitate separation of said forms, said web being divisible transversely between each pair of forms beyond the confines of said infolded marginal portions thereof.

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