Dec. 26, 1950 C. L. JOHNSTON 2,535,798

MANIFOLD FORM

Filed March 31, 1947

Fig. 1.

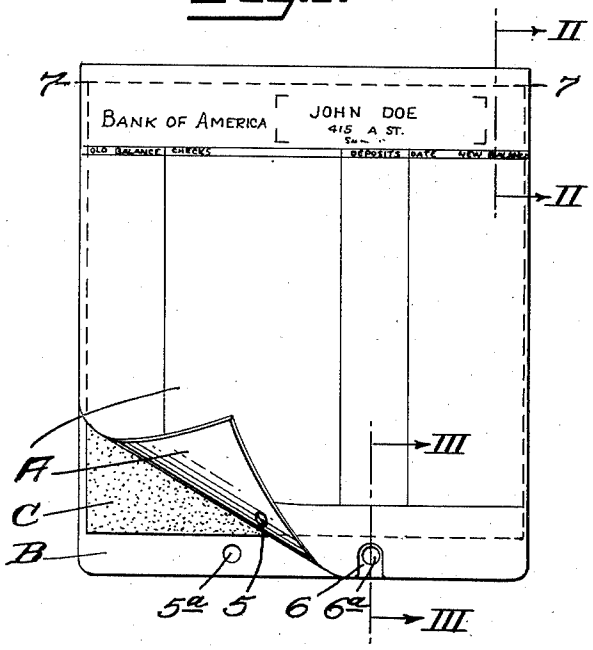


Fig. 2.

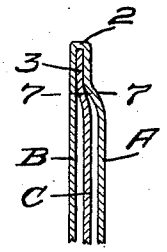


Fig. 3.

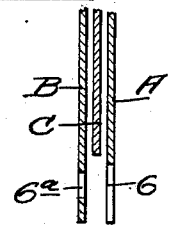


Fig. 4.

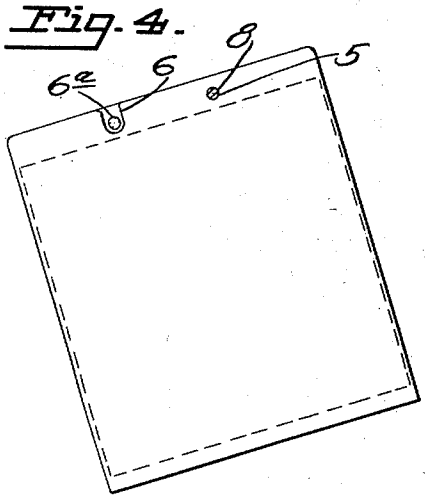
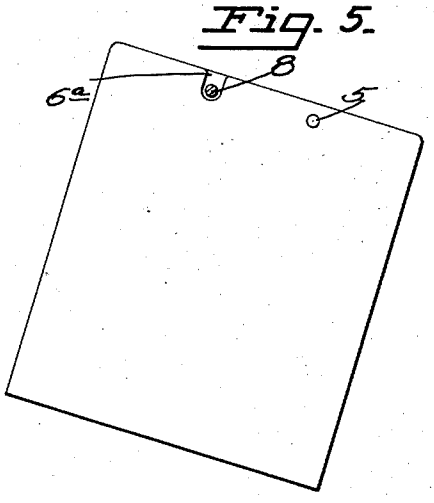


Fig. 5.



INVENTOR.
C. L. JOHNSTON.
BY
Thomas Castles Esq.
ATTORNEY.

Patented Dec. 26, 1950

2,535,798

UNITED STATES PATENT OFFICE

2,535,798

MANIFOLD FORM

Clarence L. Johnston, Piedmont, Calif.

Application March 31, 1947, Serial No. 738,323

2 Claims. (Cl. 282—1)

1

This invention relates to a manifold or multiple form comprising one original and one duplicate with an interposed carbon sheet, all the sheet being connected along one edge, and especially to means for removing the carbon sheet from between the original and duplicate form sheets, and for separating the form sheets into originals and duplicates.

The general idea of providing superimposed form sheets with one or more carbon sheets interposed between them and all joined at one end or edge is old. Multiple forms of this character are extensively used, for instance in banks for keeping records of various types such as bank statements and the like. The filling in of multiple forms is done on billing machines, typewriters and the like, and one original and one or more duplicates are obtained. If the forms employed are bank statements, they must remain intact during the month for which they are intended, as deposits and withdrawals must be applied to or entered on the form sheets day by day. When the end of the month is reached, the carbon sheets must be removed and the form sheets separated as the original is mailed to the depositor while the duplicate is retained by the bank. This removal of the carbon sheets and separation and segregation of the form sheets is a time consuming, tedious and dirty job as as hand labor is depended upon.

The object of the present invention is generally to improve and simplify the construction and operation of form sheets of the character described, and especially to provide a multi-form in which the connection between the several sheets of the form may be cut off so as to render the sheets free with relation to each other, and further to provide a plurality of sets of perforations in the sheets arranged so that when the sheets are hung by one set of perforations from the pin of a vibration machine, the carbon sheets will be shaken out and removed and when hung from another set of perforations and similarly subjected to vibration, the sheets will be separated into originals and duplicates.

The multiple form sheet forming the subject matter of the present application is shown by way of illustration in the accompanying drawings, in which:

Fig. 1 is a perspective view of a multi-form sheet;

Fig. 2 is an enlarged cross section taken on line II—II of Fig. 1;

Fig. 3 is an enlarged cross-section taken on line III—III of Fig. 1;

2

Fig. 4 shows the form sheets hung by one set of perforations on the vibrator pin so as to liberate or permit removal of the carbon sheets; and

Fig. 5 is a view similar to Fig. 4 showing the form sheets hung by another set of perforations so as to separate the originals from the duplicates.

Referring to the drawings in detail, and particularly Fig. 1 A indicates an original form sheet which is printed on its face to form a bank statement, said statement giving the name of the bank, the name of the depositor, together with columns and spaces where the amounts of deposits and withdrawals may be typed. A duplicate sheet B is also provided and this sheet has an identical form printed thereon so that whatever is printed or typed on the original will also appear in the same place on the duplicate. The transfer from the original to the duplicate is made by a carbon sheet C interposed between them.

All of the sheets are connected along the upper edge by folding, gluing, or otherwise. For instance, the sheets A and B may be a single sheet folded upon itself at the point 2 (see Fig. 2) and the carbon sheet may be glued as indicated at 3 to the sheet B. The manner in which the sheets are connected is not important but a connection must be provided which is sufficiently durable to retain the sheets as a multiple form or sheet assembly during the month for which they are intended.

At the end of the month when the statements are to be mailed out, the sheets are separated and the carbon sheet removed, and this is accomplished as follows. Formed along the lower edge of the original or form sheet A is a perforation 5 and a slot 6 and formed on sheet B in alignment with perforation 5 is a perforation 5*a* and in alignment with slot 6 is formed a perforation 6*a*. The carbon sheet C (see Fig. 1) is shorter than sheets A and B. The perforations 5 and 5*a*, together with the slot 6 and the perforation 6*a* are formed in that portion of the sheets which projects beyond the carbon sheet. By providing the slot 6 and the perforations 5, 5*a* and 6*a*, it becomes possible readily to remove the carbon sheet and to separate and segregate the original and the duplicate.

At the end of the month when the statements are completed, a number of them like the one described are stacked in similar arrangement in a bundle and are passed through a machine which will cut off the upper connected ends along the dotted line indicated at 7—7 (see Figs. 1 and 2). This leaves the three sheets of each form free for separation as the perforated and slotted

ends of the sheets are in no manner connected. A bundle of forms thus cut but temporarily held in the original arrangement is next slipped over a pin 8 (see Fig. 4). That is, the perforations 5 and 5a of the several stacked or bundled multi-forms align and a pin is slipped through these aligned perforations. The pin 8 is subjected to vibration in a manner not here disclosed, and if the sheets are hanging in a vertical plane with their cut, free ends lowermost, it is obvious that as the carbon sheets are not hung on the pin, they will be shaken out from between the originals and duplicates, and when shaken out may be conveniently disposed of.

This separation or shaking out of the carbon sheets takes only a few seconds and the operator then removes the multi-forms from the pin 8 but replaces them still in substantially their original arrangement this time with the pin 8 passing through the perforations 6a (see Fig. 5). The original sheet A has a slot 6 formed therein and as this only partially surrounds and is not engaged by the pin, it is obvious that all of the original sheets will be shaken out from between the duplicates and may thus be gathered and stacked while all the duplicates will be retained and will remain hanging on the pin and may then be removed and stacked.

In this manner the tedious hand work of removing the carbon sheets from between the multi-forms and then separating the originals from the duplicates is entirely eliminated. The work is nearly all done by the vibrating pin 8 and is accomplished with very little additional effort and in a short period of time. Furthermore, mistakes such as mixing duplicates with originals are also avoided. The perforations and slots may obviously be formed in either the ends or the sides of the sheets with the same result, and the sheets may be connected at either side edge or end, the important feature being that the carbon sheet must be shorter so that the perforations 5 and 5a together with the slot 6 and the perforation 6a may be formed in that portion of the form sheets which extends beyond the carbon sheet.

The two perforations 5a and 6a formed in the duplicate form in addition to serving the functions heretofore described may also serve as punch holes for filing purposes, this being important as the duplicates are retained by the bank and are filed away for possible future reference. In the present instance the multiform discloses only one original and one duplicate with an interposed carbon sheet, but as many duplicates may be added as desired, and while this and other features of the invention have been more or less specifically described and illustrated, it should be understood that changes may be resorted to within the scope of the appended claims and that the materials and finish of the several parts employed may be such as the experience or judgment of the manufacturer may dictate or varying conditions or uses may demand.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A multiple form of the character described comprising an original form sheet, a duplicate form sheet, a carbon sheet interposed between said sheets and being shorter than said sheets, means connecting the carbon and the form sheets at one end, said form sheets being thereby held in register at said end and at the sides but projecting beyond the shorter carbon sheet at the opposite end, a perforation and a slot formed in the projecting portion of one form sheet, said slot extending to said opposite end of said one form sheet, and a pair of perforations formed in the projecting portion of the other form sheet and registering with the perforation and the slot formed in the first named form sheet.

2. A multiple form of the character described comprising a single sheet folded midway of its length to form two sheets connected by the form, one of said sheets having an original form printed thereon and the other of said sheets having a duplicate form printed thereon, a carbon sheet interposed between the two connected sheets and being shorter than the same, said carbon sheet being secured to one of said sheets by a glue line parallel to the fold and closely adjacent the same, and said form sheets having portions projecting beyond the opposite end of the shorter carbon sheet, there being a perforation and a slot extending to the sheet edge formed in the projecting end portion of one form sheet, and there being a pair of perforations formed in the projecting end portion of the other form sheet and registering respectively with the perforation and the slot formed in the first named form sheet.

CLARENCE L. JOHNSTON.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,098,158	O'Neill	Nov. 2, 1937
2,259,795	Brower	Oct. 21, 1941