Nov. 12, 1935. R. M. BONN 2,020,287

MANIFOLD BOOK

Filed April 3, 1935

FIG. 1

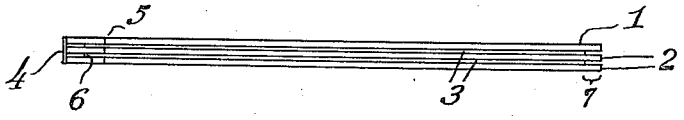


FIG. 2



FIG. 3

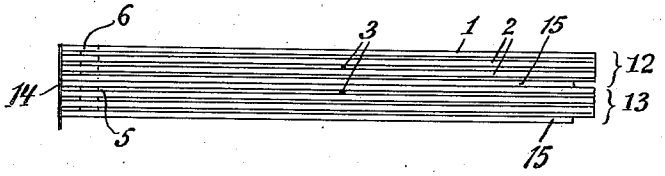
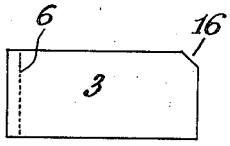


FIG. 4



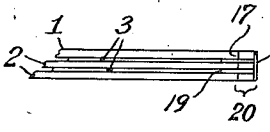
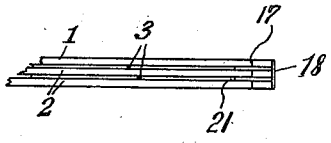


FIG. 5

FIG. 6



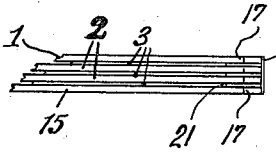


FIG. 7

FIG. 8

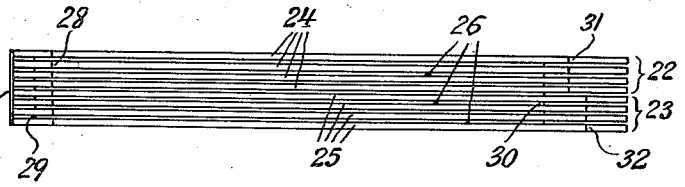
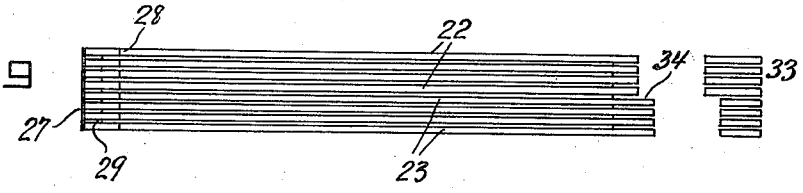


FIG. 9



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MANIFOLD BOOK

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Application April 3, 1935, Serial No. 14,402

3 Claims. (Cl. 282—22)

This invention relates to devices for general manifolding purposes, more particularly for manifolding printed business forms. Such devices include, at least, an original sheet, a copy sheet and a carbon sheet therebetween. Printed forms are required in nearly every kind of business. The larger and more complicated and departmentized the business is, the greater is the demand for improved manifolding devices to be used in the form of units, pads, tablets or bound in book form. Such devices must embody the elements of perfect alinement of forms, easy and quick separation of one form from another form, or separation of one set of forms from another set. They must also embody means for selective manifolding, i. e. that not every item be duplicated on every form. In addition, it is at times required that a certain form be manifolded first as a unit and subsequently divided into smaller units. It is also frequently demanded that the manifolding device be arranged with particular reference to the preservation of the edges of the paper, that is, that certain edges or sides of the paper be bound while other edges remain unbound. Another factor to be considered is that of neatness and cleanliness in handling the forms and of separating the carbons from the printed forms.

It is the object of this invention to provide manifolding devices embodying certain novel features of construction and arrangement whereby the above and other requirements may be fulfilled. One object of the invention is to provide a manifolding device including a plurality of sets of forms so arranged that separation of the several sets is indicated automatically and may be quickly performed. Other detailed objects of the invention will appear as this specification proceeds while reference is had to the accompanying drawing in which

Fig. 1 is an edge view of a manifolding unit embodying the features of this invention illustrated in a very simple form.

Fig. 2 is a similar view which includes other certain features of the invention relating to separation of the forms in more than one operation.

Fig. 3 shows the manifolding units bound in book form and includes still other novel features.

Figs. 4, 5, 6 and 7 illustrate certain modifications.

Figs. 8 and 9 illustrate how different sets of forms may be quickly separated.

Each manifolding unit according to this invention consists of an original sheet, a copy sheet and a carbon sheet therebetween. The original sheet may be a blank sheet or it may contain a printed form. There may be and mostly are several copy sheets and of course there is a carbon sheet on top of each copy sheet. The original and the copy sheets are preferably of the same size, while the carbon sheets may be of the same size or smaller. The assembling of the carbon sheets with the other sheets, which I may call form sheets because they usually contain printed forms, is done in such a manner that when the form sheets are to be separated for distribution, the carbon sheets are separated together as a unit at one time. This feature is common to all the disclosed forms of the invention herein. In the drawing the form sheets are shown thicker than the carbon sheets for the sake of clearness. All the sheets are shown much thicker than actual dimensions.

Referring now to Figure 1, the manifolding unit consists of an original sheet 1 and copy sheets 2 interleaved with carbon sheets 3. The lateral dimensions of the sheets are not disclosed, it being understood that the size of the form sheets is such as will contain whatever printed form is required in a particular business. It will also be understood that the position of the printed form on the sheet is of no importance. The sheets may be assembled in units, books, pads or tablets with any one of their sides being secured to the corresponding sides of the other sheets, and any one side of a sheet may be the head or top. All such particular arrangements depend not upon the invention but upon each specific case. In Figure 1 the sheets are all secured or bound at one edge 4 in any suitable manner and whereby perfect alinement of the forms is secured and maintained. The secured edges of the sheets are indicated by double lines throughout the drawing as a matter of illustration only and not for the purpose of indicating any particular method or means for this purpose. For purposes of separation the form sheets are perforated across the sheet along the lines 5. Similarly the carbon sheets are perforated along the lines 6 and it will be noted that the carbon sheets are shorter than the form sheets which form a projecting margin 7 at their free edges. When the form has been filled in by writing by hand or typewriting, all the sheets are torn from the bound edge 4 along the perforated lines 5 and 6. Consequently the carbon sheets project at the left end in the drawing beyond the form sheets. The operator therefore may seize all the carbon sheet projecting margins with the left hand and all the form sheet margins 7 with the right hand and remove the carbon sheets at one time in a single operation. Thereafter

the filled-in form sheets may be distributed or otherwise used, while usually the carbon sheets are discarded.

It will be noted that because of the staggered perforated lines 5 and 6, the carbon sheets, when torn away, automatically are caused to project beyond the form sheets and provide a margin to be seized by the operator as will be understood. That portion of the carbon sheets which lies between the lines 4 and 5 may be uncoated if desired, so that the projecting carbon margin does not soil the fingers when the sheets are separated. The uncoated portion is also of advantage in pasting the sheets together if pasting is used at 4.

Figure 2 illustrates a manifolding unit like the one shown in Figure 1 with the additional feature that the form sheets may be separated into groups 8 and 9 by tearing along the perforated line 10. The carbon sheets have corresponding off set perforated lines at 11. The perforations 10 are made so as to provide greater resistance to the tearing operation than the perforations 5. Consequently the operator is enabled to tear off the entire unit 8—9 along the lines 5 and 6, and thereafter separate the group 8 from the group 9 by tearing along the lines 10 and 11. The carbon sheets may have uncoated strips between the lines 10 and 11. For the purpose of identification throughout this specification and the claims, perforations such as 10 will be called strong perforations as distinguished from weak perforations such as at 5. There need be no difference in the perforations in the carbon paper because the carbon sheets being confined between the other sheets will naturally follow the movements thereof and thus separate first along the perforations 6. However, if desired, the perforations in the carbon sheets may be varied to correspond.

Figure 3 illustrates a plurality of units of the character shown in the preceding figures bound together in book form with certain additional features of construction. In this figure there is a top unit 12 and another unit 13 below the same. The units are assembled in a pad or into a book by suitable means at 14 and of course there may be any number of units thus assembled one on top of the other. Each unit consists of an original sheet 1, copy sheets 2 and carbon sheets 3 as in Figure 1. These sheets are also perforated at 5 and 6 as in Figure 1. In this case the bottom copy sheet 15 of each unit is intended to be left as a permanent record in the book or pad. Such bottom copy sheet 15 is therefore not perforated at all and it is also shorter than the other sheets so that it will not be seized together with other sheets. It will also be noted that the carbon sheets in Figure 3 differ from the carbon sheets in Figure 1 that they are of the same size as the form sheets and extend clear to the free edges thereof. The carbon sheets in this case, Figure 3, have their one corner cut off as at 16 as seen in Figure 4.

In using the manifolding device in Figure 3 all writing on the original sheet 1 will be duplicated on the copy sheets 2 and 15 in the uppermost unit 12. Thereafter the operator separates the unit 12 from the pad or book by tearing along the perforated lines 5 and 6 as before, but the bottom copy sheet 15 is not separated because the operator does not take hold of it, it being shorter, and because such bottom sheet is not perforated at all. Next, the carbon sheets are separated by the operator taking hold of the projecting carbon margins at the left and the upper corners of the form sheets at the right and pulls the carbons out in a manner easily understood. Then the permanent or remaining bottom copy sheet 15 is turned over to the left. Thereafter the unit 13 is on top ready for use. When the book or pad has been used up so far as manifolding is concerned, there remains a book or pad of permanently assembled records of the manifold operations contained in the bottom copy sheets 15.

In any of the above described units it may be found desirable to bind or secure also the right hand edges of each unit. Figure 5 illustrates such a bound or secured right hand edge of a unit. In this case the form sheets are provided with perforations 17 near the right hand edges and are secured together at 18. The free edges of the carbon sheets are shown at 19. Hence, before or after the unit has been separated from its bound edge at 4 as in Figure 1, the margin portions 20 of the form sheets are torn off and finally the carbon sheets separated in a group as in Figure 1.

Figure 6 is the same as Figure 5 except that here the carbon sheets extend clear to the edges of the form sheets. This may be necessary where one wishes to write clear to the edge of the form sheets or for other reasons. In Figure 6 therefore, the form sheets have the perforations 17 and the carbon sheets have off set perforations at 21. Hence, when the unit as such has been used separately or has been torn away from the secured edge 4, as in Figure 1, the margins at the other secured edge 18 are torn off along the lines 21 and 17. Thereafter the carbon sheets are removed in a group as before. Figure 7 is like Figure 6 but shows the bottom copy sheet 15, as in Figure 3, being of the same size as the other copy sheets. Hence sheet 15 is also perforated at 17 and its edge secured to the other sheets at 18. When the margins at 18 are torn off the bottom sheet remains as in Figure 3.

Figure 8 illustrates how the principle of staggering perforation lines may be used to advantage for the separation of groups or sets of manifolding forms. In this figure the single manifolding unit consists of two groups of different forms. The uppermost group or set 22 consists of four form sheets 24 and the lower group or set 23 consists of four form sheets 25. The number of sheets is of course immaterial and two groups or sets may not contain the same number of sheets. There may be more than two sets in a unit. The form sheets are interleaved with carbon sheets 26. All the sheets are secured together at the one edge 27 where the form sheets have perforations at 28 while the carbon sheets have off set perforations at 29. The free edges of the carbon sheets terminate at 30. The free edges of the form sheets have perforations 31 and 32 staggered groupwise as shown.

After the manifolding common to all the forms in this unit has been done, the operator first tears off the free edges of the form sheets along the perforations 31 and 32 as seen in Figure 9 where the portions marked 33 indicate the torn off margins or edges of the form sheets. When these have been removed there is immediately and automatically disclosed a difference in width or length between the sheets in the two groups in that the lower group sheets extend beyond the upper group sheets. It is therefore a very simple matter to separate the groups without having to count the sheets or inspect them closely to insure that all the sheets which belong in one

group be separated together. In practice this is accomplished by the operator placing his right thumb upon the projecting margin **34**. He grips this margin and turns the edges of the lower group downward, at the same time taking hold of the edges of the upper sheets with the left hand like opening a book and thus separates the two groups. In practice the operator, in lifting the upper group from the lower group, naturally takes hold of the fourth lowest carbon sheet at the bottom of the upper group so that when the lower group is separated there is no carbon sheet on top thereof.

It will also be clear that while the invention is disclosed in its preferred form, changes in the detailed arrangements and alterations may be made without departing from the principle of the invention and the scope of the appended claims.

I claim:

1. A manifolding unit of the character described comprising a plurality of sets of forms all being of the same original size, one of said sets of forms having at its one end a severable stub portion of a given dimension, the other set having at the same end a severable stub portion of a different dimension, means for securing the two sets of forms together in registered alined position with the said stub portions in superposed relation and carbon sheets between adjacent forms.

2. A manifolding unit of the character described comprising an upper and a lower set of form sheets of the same original size, the upper form sheets having a severable portion at one end, the lower form sheets having a larger severable portion at the same end, all of said severable portions being adapted to be removed from the forms sheets by a single tearing operation whereby to automatically disclose that the lower form sheets are longer than the upper form sheets, carbon sheets between all of said sheets, means for securing the carbon sheets and all the form sheets together at the end opposite the first mentioned end of the form sheets, the portions of all the form sheets to which the carbon sheets are secured being severable, the carbon sheets being shorter than the usable portions of all the form sheets.

3. A manifolding unit of the character described including an original sheet, a copy sheet and a carbon sheet therebetween, all of said sheets being secured together at one end, the carbon sheet being shorter than the other sheets, the original and the copy sheet being of the same size and having severable variably sized stub portions at their other ends whereby when said severable variably sized stub portions are removed, the original sheet and the copy sheet will be automatically disclosed as being of different sizes to facilitate separation.

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