Aug. 26, 1941. H. W. ROGERS 2,253,917

MANIFOLDING ASSEMBLY

Filed Nov. 9, 1940

Fig. 1.

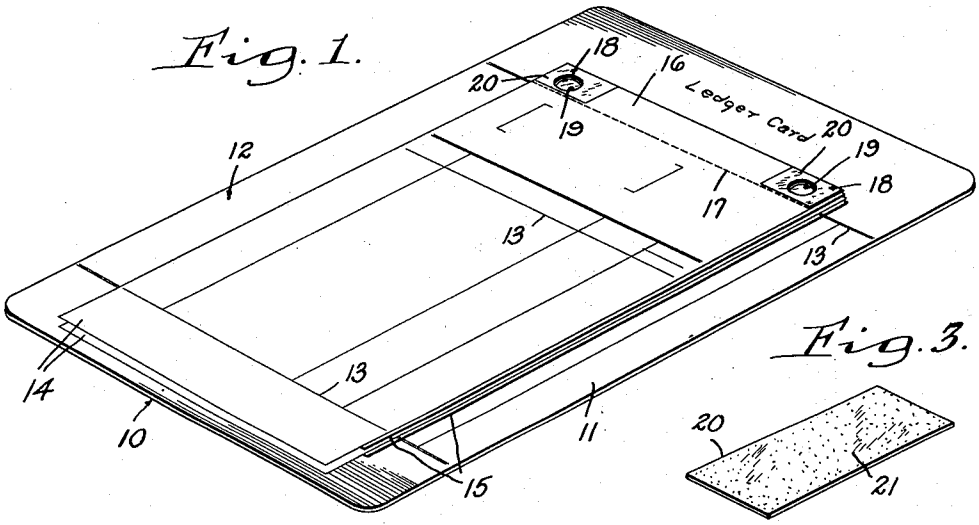


Fig. 3.

Fig. 2.

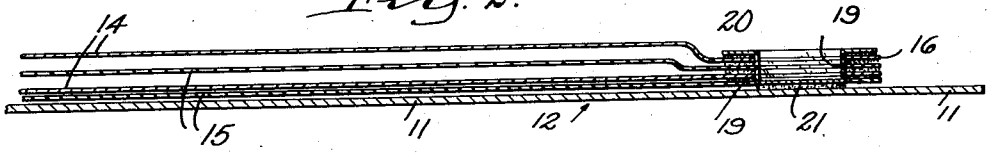


Fig. 4.

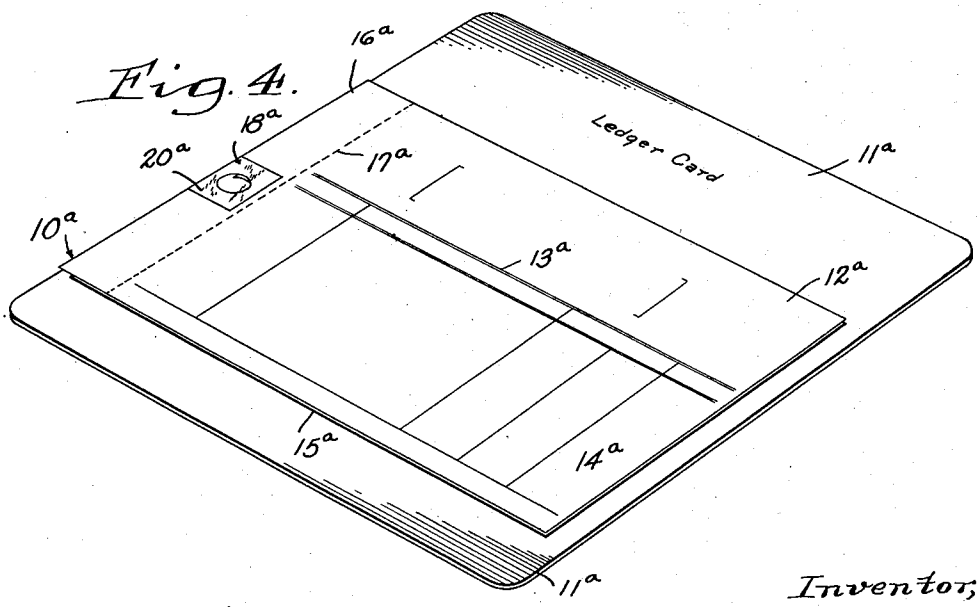
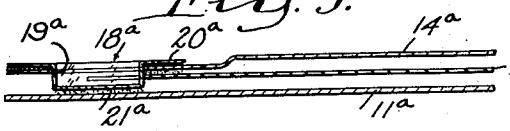


Fig. 5.



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Patented Aug. 26, 1941 2,253,917

UNITED STATES PATENT OFFICE

2,253,917

MANIFOLDING ASSEMBLY

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Application November 9, 1940, Serial No. 365,079

6 Claims. (Cl. 282—9)

This invention relates to improvements in manifolding assemblies, and more particularly to such assemblies of the type including record and carbon or transfer sheets attached together into a unitary record assembly of sheets adapted for use as a single record unit in various forms of writing machines, such as accounting machines, bookkeeping machines, adding machines, typewriters, autographic registers, and the like, or for manual inscription independently of any inscribing apparatus.

It is a general object of the invention to provide a single manifolding unit of the class mentioned, wherein an improved arrangement has been devised whereby a unitary record assembly of record and carbon sheets can be attached in temporary fixed position upon a summary or ledger card or similar separate record sheet, which is ordinarily larger than the record unit, whereby the unit can be quickly and easily attached in different transfer positions upon the ledger card and can be as easily removed from such position without any mutilation or marring of any of the record sheets or surfaces thereof. By means of this improved arrangement the record units of record and transfer sheets can be used currently for recording separate individual transactions, such as sales and the like, and these individual transactions recorded on the separate units can be transferred to provide a continuous record or history of the transactions upon one or more ledger sheets.

A further and more particular object of the invention is to provide an improved temporary attaching device for each of the separate record units, whereby said units can be attached temporarily in fixed transfer position on a summary or ledger sheet, and can be quickly and easily detached and shifted to a different attached position on the summary sheet for further transfer inscription, or another similarly constructed record unit can be likewise attached in different transfer positions on the same summary sheet.

According to a more detailed feature of the invention, each record unit for receiving the current inscriptions of sales, etc., is provided with an improved attaching device in the form of an adhesive attachment having a coating of non-drying, pressure sensitive, cold-sealing adhesive, whereby the current record unit can be quickly and easily attached in any desired transfer position upon the ledger or summary sheet and as easily removed after the inscriptions have been completed. The ledger or summary sheet can thus be inscribed when assembled with different current record units, so as to carry a continuous record or history of the transactions, and it can be separately filed or bound as desired.

A further object of the invention is to provide an improved adhesive attaching means for record units of the class mentioned whereby the adhesive attachment is protected from damage by a novel means of attachment to the record unit, and also the adhesive surface is protected so as to avoid contact with outside surfaces and to avoid soiling the fingers.

Other objects of the invention will be in part pointed out in the following detailed description of some illustrative but preferred embodiments of the invention, and will be in part obvious as the disclosure proceeds.

The invention accordingly comprises the features of construction, combination of elements, and arrangement of parts, which will be exemplified in the construction hereinafter set forth and the scope of the application of which will be indicated in the claims.

For a more comprehensive disclosure of the nature, objects and advantages of the invention, reference is had to the following detailed description and to the accompanying drawing, in which:

Fig. 1 is a partially diagrammatic perspective view of a manifolding assembly embodying the invention;

Fig. 2 is a partially diagrammatic enlarged vertical, longitudinal section of Fig. 1 taken through one of the improved attaching devices;

Fig. 3 is a perspective view of a strip of adhesive tape used for making the assembly attaching device;

Fig. 4 is a view similar to Fig. 1 but showing a different arrangement for attaching the separate record unit to the summary or ledger sheet; and

Fig. 5 is a vertical transverse sectional view similar to Fig. 2, showing the attaching device of Fig. 4.

Referring to the drawing for a detailed description of the invention, and first to the embodiment particularly shown in Figures 1, 2 and 3, a manifolding assembly indicated generally at 10 is there depicted. This manifolding assembly embodies a single record sheet 11 and a record assembly or unit 12. The record sheet 11 is ordinarily in the form of a summary or ledger sheet somewhat larger than the record unit 12 and is preferably made of a better or heavier quality of paper for use in making a continuous record or history of transactions or sales, and

for filing or binding in any desired appropriate manner. Both the record unit 12 and the ledger sheet 11 are provided with blank forms 13 arranged to receive inscriptions to accommodate the particular class of business for which the assembly is designed. The record unit 12 includes record leaves or sheets 14 and carbon or transfer sheets 15 arranged in superposed transfer relation with the record sheets. Two record sheets and two carbon sheets are thus shown in Figures 1 and 2, but any desired number of record and carbon sheets may be utilized. One record and one carbon sheet may be sufficient for some purposes, but three or four or more record sheets with a corresponding number of carbon sheets may be required for other purposes.

Binding means is provided for attaching the record and carbon sheets together in a unitary record assembly, this being provided by the binding stub 16 in which stubs or extensions of the sheets are attached together by adhesive means and other well known attaching devices. Each of the record sheets 14 is provided with a transverse weakened severance line 17 extending along and just outside of the binding stub. These severance lines may be made in any well known manner, as by perforating, scoring, cutting or similar known means. The transfer sheets 15 could be provided with similar weakened lines but they are ordinarily omitted from the transfer sheets. The carbon sheets, as shown, terminate at their end portions opposite to the binding stub 16, short of the adjacent end portions of the record sheets so as to provide a selective grip formation whereby the ends of the record sheets can be gripped, without at the same time gripping or engaging the transfer sheets. By means of this arrangement, the record unit 12 can be gripped at the binding stub and at the selective grip formation at the other end, whereupon a quick pull or perk will sever the record sheets from the stub along the weakened lines 17 and strip the transfer sheets from their interleaved relation with the record sheets in a manner well known in the art. The carbon sheets will remain attached to the binding stub and can be discarded therewith.

It will be noticed that the lower transfer sheet 15 is positioned at the outside of the record unit 12 and has its lower transfer surface directed downwardly. This is for the purpose of transferring inscriptions made upon the record unit to the upper face of the summary sheet when these two parts are assembled, as shown in Fig. 1. The under surfaces of both transfer sheets are carbonized for transfer inscription, but in some cases it will be desirable to carbonize the upper surfaces, especially where translucent record sheets are used, transfer inscriptions being thus made upon the back or under surfaces of such translucent sheets.

Improved attaching means for attaching the separate record unit upon the ledger or summary sheet is indicated generally at 18. In the embodiment shown, each of these attachments includes an opening or aperture 19 extending through the record unit. As shown in Fig. 1, there are two such apertures spaced apart and positioned directly at the binding stub 16. These apertures are shown as being spaced inwardly from the adjacent edges of the record unit and thus are entirely closed, but for some purposes the aperture may extend through the adjacent end or side edges of the assembly sheets, so as to be partially open. The apertures are shown as being circular, but they may be of other configuration, such as rectangular, triangular, diamond-shaped, etc. The apertures 19 are preferably positioned outside of the weakened severance lines 17 so that the attaching devices are entirely free and separate from the main body of the record sheets upon severance along these lines, thus leaving the record sheets free from any objectionable or unsightly marring.

Attached in position over each of the attaching apertures 19 is an attaching sheet member 20, preferably in the form of a special adhesive tape having its under surface coated with an adhesive material 21, that is non-drying, pressure sensitive, and cold sealing. Each attaching strip 20 can be attached to the binding stub over the corresponding aperture 19 by this adhesive means or in any other desired manner. But the surface of the attaching tape that is exposed downwardly through the aperture 19 for contact with the ledger sheet should be of the type mentioned, thus providing for attachment of the record unit in a temporary fixed inscription position upon the ledger sheet merely by applying pressure on the tape directly over the apertures 19. It thus takes only an instant to attach the record unit in transfer position upon the ledger sheet and after the inscription has been made the unit can be as quickly stripped from its attached position and transferred to another attached position if desired. Or, another record unit may thus be attached to the ledger sheet after the preceding unit has been thus attached and inscriptions made. In this manner a continuous record or history of individual transactions made upon the current record unit 12 can be recorded upon the ledger sheet.

Different forms of an adhesive material, for the purpose above set forth, are known such, for example, as adhesive embodying rubber or latex, such as the well known friction tape employed in electrical work and similar adhesive tape for attaching sheets of paper, etc. A very satisfactory adhesive for this purpose is described in United States Letters Patent to R. G. Drew, No. 2,177,627, issued October 31, 1939. This discloses a pressure sensitive tape made of cellulosic sheet material or regenerated cellulose sheeting with a coating of non-drying, pressure sensitive, cold-sealing adhesive, as set forth in detail in this patent. This adhesive is especially advantageous for this purpose since it not only is sufficiently tacky to attach the manifolding units firmly in position upon the ledger sheet during entry of the inscriptions, but it does not offset or peel off from the tape or sheeting. Marring or soiling of the surface of the ledger sheet due to off-setting is thus avoided. Also, its adhesive qualities are satisfactory throughout a considerable temperature range and it is therefore satisfactory to hold the record units in position at ordinary living room temperatures, or at temperatures considerably above or below such room temperatures. It is non-drying over long periods of time and does not deteriorate appreciably with age. Also, its pressure sensitive qualities continue for long periods of time. Accordingly, this adhesive is very advantageous in secluding the record units in different transfer positions upon the ledger sheets.

Referring to the embodiments of the invention disclosed in Figures 4 and 5, it will be noted that the manifolding assembly is of the same general nature as that described in detail above; for this reason corresponding parts are designated by the

same numerals with the addition of the index *a*. In this embodiment the manifolding assembly **10***a* includes the ledger or summary sheet **11***a* and the record unit **12***a*, similarly to the previously described embodiment. Also, the record unit **12***a* includes a record sheet **14***a* and a transfer sheet **15***a* arranged similarly to the sheets of the previously described embodiment. More record and transfer sheets may be used when desired. The carbon sheet **15***a* is shown as of substantially the same size as the record sheet but a selective grip formation may be provided at the marginal portion thereof opposite to the binding stub **16***a*, as in Fig. 1.

In the embodiment of Figures 4 and 5, the attachment of the record unit **12***a* to the ledger sheet is at the lateral or left-hand margin rather than at the top of the unit, as shown in Fig. 1. Also, there is a single attaching device **18***a* for the record unit instead of two spaced attaching devices as shown in Fig. 1. The attaching device **18***a* is substantially the same in structural details as the attaching devices **18** described above, and it is positioned at an aperture or opening **19***a* in the record unit, similar to the openings **19**. The record and carbon sheets may be attached in the binding stub **16***a* as above described, and the attaching adhesive tape or sheet **20***a* is constructed and arranged in substantially the same manner as above described. The single attaching device **18***a* is sufficiently strong to hold the record unit in transfer position upon the summary sheet during the entry of transfer inscriptions.. The record unit can be attached in any desired position and shifted from one attached position to another, as already described, and different units can be attached in different transfer positions upon the ledger sheets so as to make a continuous record or history upon the ledger sheets.

It is desirable to make the attaching tape **20** or **20***a* of translucent material such as described, so that the openings over which the tape is positioned may be utilized as observation windows for aiding in locating the record unit correctly in the different inscription positions upon the ledger sheet. For this purpose, the marks included in the blank forms of the ledger sheet or other marks, if desired, may be utilized as indices to aid in the location of the unit in correct transfer position upon the ledger sheet. The attaching tape may, however, for some purposes be opaque and of different sheet material such as paper or textile fabric.

It will be understood that the drawing is partially diagrammatic, especially the enlarged views of Figures 2 and 5 in which the sheets are shown considerably separated for the purpose of improving the disclosure. The record and transfer sheets in actual practice are ordinarily of thin paper, such as used for recording written data and they lie close together in flat relation in the assembly. The adhesive attaching tape **20** or **20***a* will thus lie substantially in flat position across the corresponding openings and the adhesive surface will lie flat substantially in a single plane across the top of the apertures at the binding stub. When it is desired to attach the record unit in position on the ledger sheet or other surface, the area of the attaching tape aligned with the opening can be deflected laterally by pressure until its adhesive surface contacts with the underlying surface of the ledger sheet, thus effecting the desired attachment.

For some purposes it is convenient and satisfactory to omit the carbon sheet or sheets from the separate record unit and to supply such carbon sheet or sheets in loose unattached form in transfer relation with the assembled record unit and ledger sheets. Also the transfer material may be supplied by carbonizing the back or under surface of each record sheet of the separate record unit and omitting the separate carbon sheets.

Since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

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

1. A manifolding assembly, in combination, a ledger sheet, a separate assembly of record and transfer sheets bound together in a separate record unit and including a transfer sheet having a transfer surface exposed to the outside for making outside transfer inscriptions, said record unit having a marginal opening extending therethrough, and an attaching device including sheet material attached to the separate assembly over said opening and having a non-drying, pressure sensitive adhesive surface exposed through said opening for contacting with a surface of said ledger sheet, whereby the record unit can be quickly attached in temporary fixed superposed manifolding relation with said ledger sheet in different positions thereon with said exposed transfer surface in transfer relation with the ledger sheet for transfer thereto of inscriptions made upon said record unit.

2. In a manifolding assembly, in combination, a ledger sheet, a separate assembly of record and transfer sheets bound together in a separate record unit and including a transfer sheet having a transfer surface exposed to the outside for making outside transfer inscriptions, said record unit having a closed marginal opening spaced inwardly from the assembly edges, and an attaching device including a sheet member attached to the separate assembly over said closed opening and having a non-drying, pressure sensitive adhesive surface exposed through said opening for contacting with a surface of said ledger sheet whereby the record unit can be quickly attached in temporary fixed superposed manifolding relation with said ledger sheet in different positions thereon, with said exposed transfer surface in transfer relation with the ledger sheet for transfer thereto of inscriptions made upon said separate assembly.

3. In a manifolding assembly, in combination, a ledger sheet, a separate assembly of record and transfer sheets having a detachable binding stub in which said sheets are bound into a separate record unit, said unit including a transfer sheet having a transfer surface exposed to the outside for making outside transfer inscriptions, said separate record unit having a marginal opening positioned at said binding stub, and an attaching device including sheet material attached to the said unit in position over said stub opening and having a non-drying, pressure sensitive adhesive exposed through said opening for contacting with a surface of said ledger sheet, whereby the record unit can be quickly attached

in temporary fixed superposed manifolding relation with said ledger sheet with said exposed transfer surface in transfer relation with the ledger sheet for transfer thereto of inscriptions made upon said separate unit.

4. In a manifolding assembly, in combination, a plurality of record and transfer sheets having a detachable binding stub in which the sheets are bound to form a record unit, said record unit having an opening positioned at said binding stub, and an attaching device including sheet material attached to the record unit over said opening and having a non-drying, pressure sensitive adhesive surface exposed for contacting with an outside surface, whereby the separate assembly can be quickly attached in temporary fixed superposed relation with said outside surface.

5. In a manifolding assembly, in combination, a plurality of record and transfer sheets having a binding stub in which said sheets are bound to form a record unit, said record sheet or sheets being weakened adjacent to the binding stub providing for severance of the latter, said record unit having a closed opening positioned at said binding stub and spaced inwardly from the assembly edges, and an attaching device including sheet material attached to the record unit over said opening and having a non-drying, pressure sensitive adhesive surface exposed through said opening for contacting with an outside surface whereby the record unit can be quickly attached in temporary fixed superposed manifolding relation with said outside surface.

6. In a manifolding assembly, in combination, a ledger sheet for receiving inscriptions, a record sheet smaller in size than said ledger sheet and having a marginal opening, and an attaching device including sheet material attached to said record sheet over said opening and having a non-drying, pressure sensitive adhesive surface exposed through said opening for contacting with a surface of said ledger sheet, whereby said record sheet can be quickly attached in temporary fixed superposed manifolding relation in different positions upon said ledger sheet.

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