

Oct. 10, 1944.

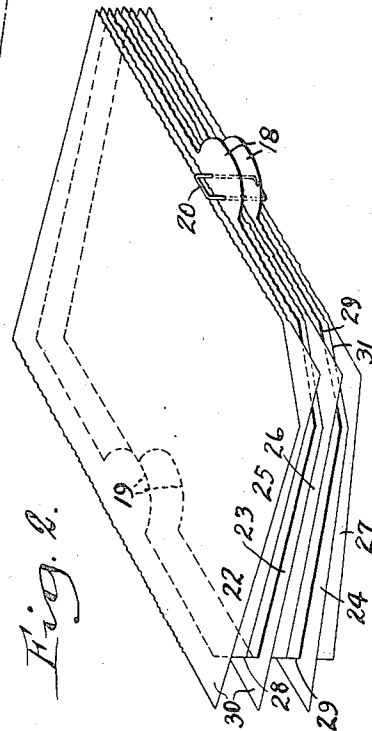
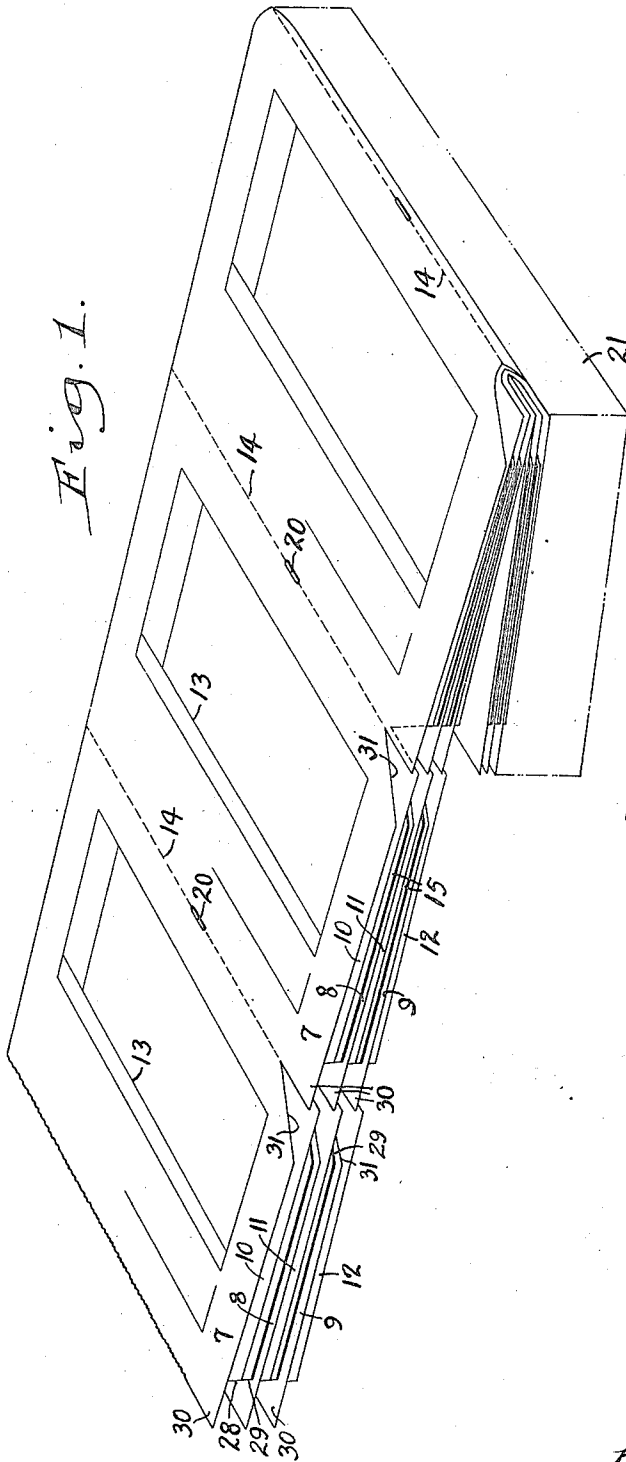
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2,360,143

CONTINUOUS MULTIUSE MANIFOLDING ASSEMBLY

Filed July 24, 1943

3 Sheets-Sheet 1



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CONTINUOUS MULTIUSE MANIFOLDING ASSEMBLY

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Fig. 3.

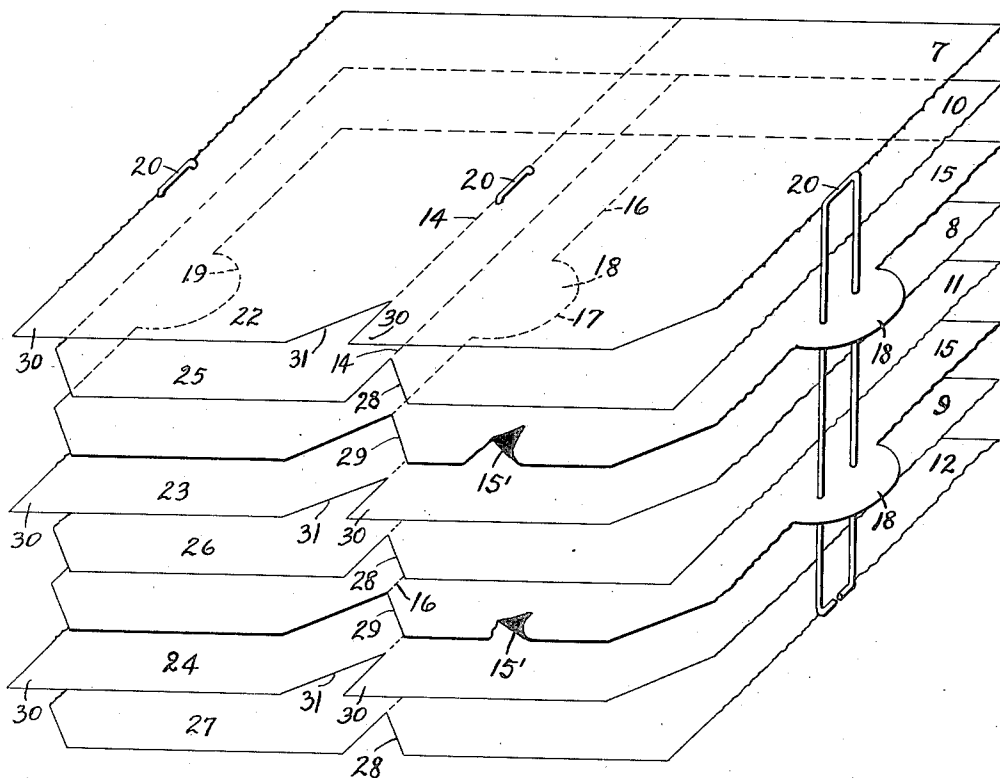
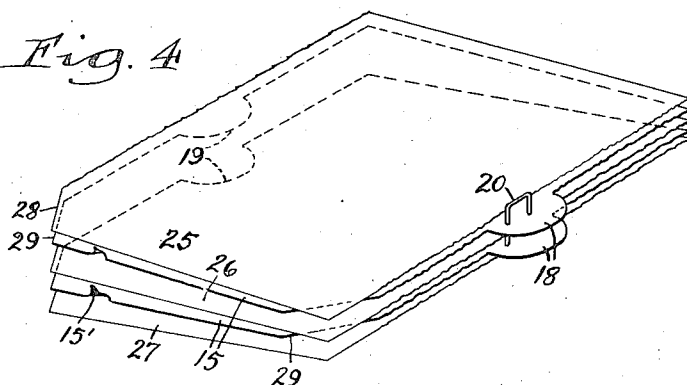


Fig. 4



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Fig. 5.

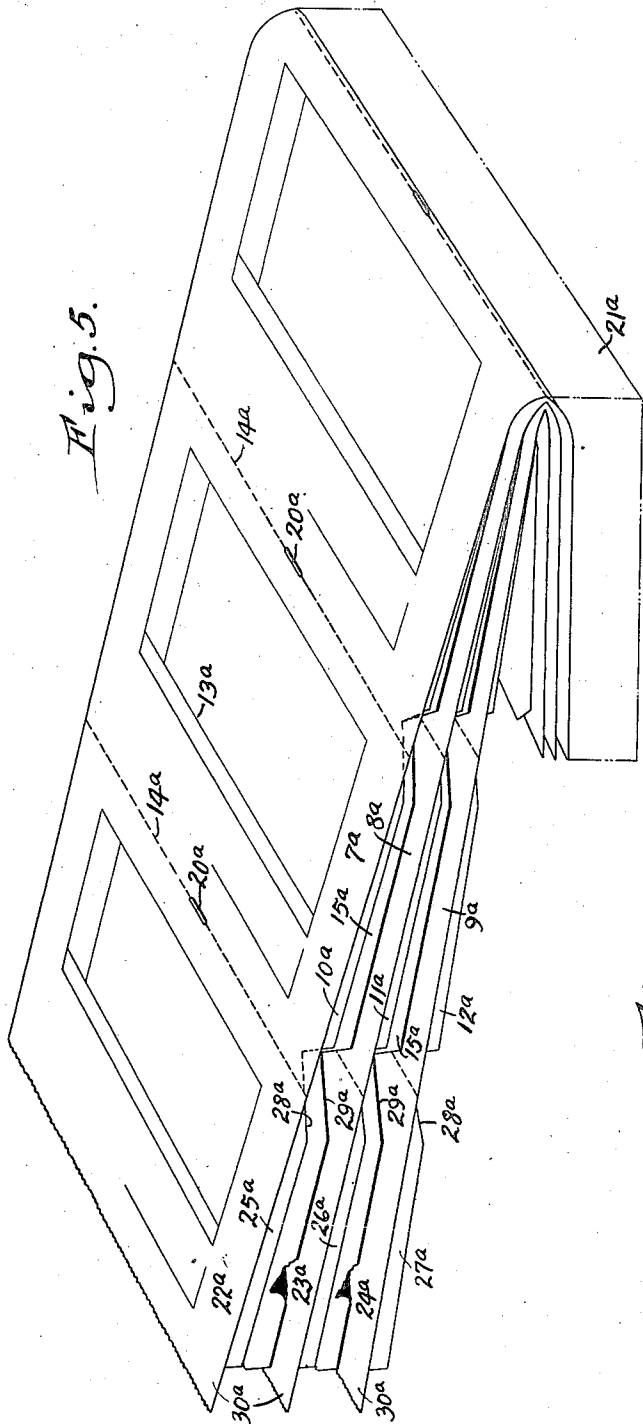
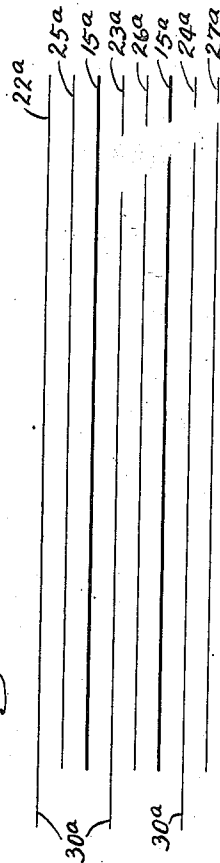


Fig. 6.



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UNITED STATES PATENT OFFICE

2,360,143

CONTINUOUS MULTIUSE MANIFOLDING
ASSEMBLY

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Application July 24, 1943, Serial No. 496,031

3 Claims. (Cl. 282—11.5)

This invention relates to improvements in manifolding assemblies for transfer inscription, and more particularly to improvements in manifolding assemblies of the long continuous traveler type embodying long continuous record strips interleaved in transfer relation with transfer material for transferring inscriptions made upon the original record strip to the underlying or copy record strips. Such manifolding assemblies are ordinarily employed for making records in various forms of writing machines such as typewriters, billing machines, tabulators, autographic registers, and the like, or by manual inscription.

It is a general object of the invention to provide a manifolding assembly of the class mentioned having an improved arrangement of long continuous record strips with the transfer material so that successive transfer inscriptions can be made by the same areas of the transfer material, thus conserving the consumption of the latter.

A further object of the invention is to provide an improved arrangement of selective grip formations in a manifolding assembly of the class mentioned, whereby a set of record leaves after being inscribed can be selectively separated from the assembly and from interleaved relation with other record strips, thus placing a secondary set of record leaves in inscription transfer relation with the transfer material. If desired, a third set of record leaves can be similarly arranged to receive the transfer inscriptions after the secondary set has been inscribed and removed, and also additional sets of record leaves may be similarly successively inscribed.

Other objects of the invention will be in part pointed out in the following detailed description of certain 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 disclosure of the illustrative embodiments, and to the accompanying drawings in which:

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

Fig. 2 is a partially diagrammatic perspective

view of a set of interleaved record and transfer leaves severed from the complete assembly so as to disclose the structure and arrangement;

Fig. 3 is an enlarged partially diagrammatic perspective view of a short section of a manifolding assembly embodying the invention;

Fig. 4 is a partially diagrammatic perspective view showing the arrangement of the secondary set of record leaves with the transfer leaves after the primary set of record leaves has been removed;

Fig. 5 is a partially diagrammatic perspective view similar to Fig. 1, but showing a modified form of the invention; and

Fig. 6 is a transverse vertical section taken through the set of record and transfer leaves at the left as appearing in Fig. 5.

In manifolding assemblies of the type to which this invention relates, the carbon or transfer strips are ordinarily of the one-time type wherein the paper or similar material carrying the transfer material is relatively thin and the coating of carbon or transfer material is ordinarily quite light. This type of transfer paper is well known in the art and is usually employed for a single transfer inscription after which it is discarded. However, there are numerous conditions under which the so-called one-time carbon is effective for making more than a single transfer inscription, particularly in cases where the lines or letters of a second transfer inscription are displaced slightly from those of a previous inscription, thus bringing fresh transfer material in transfer position. The manifolding assembly of this invention has been particularly designed and arranged so that the transfer strips or leaves can each be employed for a plurality of transfer inscriptions, and in such a manner as to assure full, clear and legible transfer copies.

Referring to the drawings for a detailed description of the invention, and first to the embodiment thereof shown in Figs. 1, 2, 3 and 4, a manifolding assembly of the long continuous traveler type is shown embodying a plurality of long continuous record strips 7, 8 and 9 constituting what may be termed the primary group, and also a similar plurality of long continuous record strips 10, 11 and 12 that may be termed the secondary group. Each record strip is ordinarily provided with a series of blank forms 13 arranged for receiving the matter which is to be inscribed or recorded thereon by the writing machine or the like. Also, each record strip is preferably provided with a longitudinal series of transverse weakened severance lines 14 longi-

tudinally spaced apart so as to divide the assembly into a series of sets of superposed record leaves, these weakened severance lines ordinarily being positioned substantially in depthwise alignment in groups in the several record strips. These weakened severance lines may be formed in any well known manner as by perforating, slitting, scoring or otherwise weakening the paper or other material to provide for easy severance along these lines.

Carbon or transfer strips 15 preferably also of the long continuous traveler type are interleaved in the assembly in transfer relation with the record strips so that inscriptions made upon the top or original record strips will be transferred by these transfer strips to the underlying or copy record strips. As shown, the upper transfer strip 15 is interleaved between adjacent record strips 8 and 10, and the lower transfer strip is interleaved between the record strips 9 and 11. Thus, it will be noticed there is no transfer material initially in position to transfer inscriptions to the copy record strips 11 and 12 but that the transfer strips will transfer the inscriptions to the copy record strips 8 and 9. The transfer strips 15 are preferably coated with transfer material only on their under surfaces as indicated at 15'.

Each transfer strip is also preferably provided with a series of transverse weakened severance lines 16, these lines being longitudinally spaced and substantially in depthwise alignment respectively with the severance lines 14 of the record strips, thus dividing the transfer strips into a series of transfer leaves interleaved in transfer relation respectively with the record leaves of the different leaf sets. Each of the severance lines 16, as shown, is formed with a part 17 deviating from the general course of the line 16 so as to provide a tongue or grip tab 18 on each transfer leaf positioned within a recess 19 of the respective adjacent transfer leaf. As fully described in the Conklin Patent No. 2,083,295, granted June 8, 1937, these grip tabs 18 project outwardly beyond the adjacent edges of the transfer leaves when the set of leaves has been severed from the assembly so as to form selective grip tabs whereby the transfer leaves can be gripped and separated from interleaved relation with the record leaves. Also, as fully described in the Conklin patent referred to, attaching devices such as attaching staples 20 extend through all of the record and transfer strips of the assembly so as to attach them together in assembled relation. These attaching staples 20 are positioned directly upon the severance lines 14 of the record strips and at the grip tabs 18 of the transfer strips. In this manner the staples are released from the record strips upon severance of the assembly along the lines 14, but they are retained by the tongues 18 of the transfer sheets so that they do not fall into the writing machine. As described in the Conklin patent, the deviating parts of the weakened severance lines 16 are preferably slitted through the paper or otherwise weakened to a greater extent than the remainder of the lines so that when severance is effected along these lines the tongues will be perfectly formed and will not be torn off at the bases thereof or otherwise marred.

As shown in Fig. 1, the complete assembly of record and transfer strips is preferably folded along transverse lines coincident with the severance lines 14 and 16 into a zigzag folded supply

pack 21 convenient for use. It will be observed that the several views of the drawings are partially diagrammatic, the record and transfer strips being shown as separated considerable distances from each other for the purpose of disclosing the structure and arrangement more clearly. When the record and transfer strips are in their normal operative positions they are ordinarily close together in compact contacting relation, and the binding staples 20 secure the composite parts of the assembly together in this position.

It will be particularly noted that the record strips are arranged in record strip units, each unit having a plurality of record strips. In the embodiment shown, each record strip unit embodies two record strips positioned in face to face contacting relation with each other. Thus the two top record strips 7 and 10 comprise the top or original record strip unit, the record strips 8 and 11 comprise the duplicate record strip unit, and the record strips 9 and 12 comprise the triplicate record strip unit. The upper transfer strip 15 is positioned between the original and duplicate record strip units, while the lower transfer strip 15 is positioned between the duplicate and triplicate record strip units.

By means of the arrangement of record and transfer strips above set forth, it will be noted that each leaf set of record and transfer leaves, as comprised between adjacent transverse severance lines 14, comprise what may be termed primary and secondary sets of record leaves corresponding to the primary and secondary sets of record strips described above. Thus, as shown in Figs. 1 and 2, each primary set of record leaves comprises the original record leaf 22, the duplicate record leaf 23, and the triplicate record leaf 24. Also, each secondary set of record leaves comprises the original record leaf 25, the duplicate record leaf 26, and the triplicate record leaf 27. The inscriptions are first written upon the original record leaf 22 and transfer inscription will be made by means of the transfer leaves to the duplicate record leaf 23 and the triplicate record leaf 24 of the primary set. During this initial inscription no writing or transfer inscription will be made upon the secondary set of record leaves, but these leaves will be later inscribed upon a second writing after the primary set of record leaves has been removed from interleaved relation.

It will be understood that the primary and secondary sets of record leaves may each comprise three leaves as disclosed in Figs. 1, 2 and 3, or that they may each comprise only two record leaves, or they may embody more than three such leaves. It will be understood that when the two lower record strips 9 and 11 with the lower transfer strip 15 are omitted, each primary record leaf set will then comprise only the original and duplicate leaves 22 and 23, and the secondary set will comprise only the original and duplicate leaves 25 and 26.

Selective grip formations are provided for selectively severing and separating each primary set of record leaves from the remaining leaves after it has been initially inscribed, and for separating the secondary set of record leaves from the transfer leaves after the secondary set has been inscribed. For this purpose each record leaf 25, 26 and 27 of the secondary set of record leaves is provided with a corner notch 28, and each corresponding transfer leaf is provided with

an aligning corner notch 29. These selective grip notches 28 and 29 are repeated at each leaf set or form length throughout the assembly length. These notches leave the adjacent corner portions of the primary set of record leaves projecting beyond the adjacent edges of the other leaves to provide selective grip sections or tabs 30, whereby the record leaves of the primary set can be gripped to the exclusion of the other leaves. As best seen in Fig. 3, each notch 28 preferably terminates at one side thereof substantially in line with the respective weakened severance lines 14, thus forming straight uninterrupted edges along the bottoms of the record leaves. However, it is often desirable, as shown, to make the notches 29 of the transfer strips to extend to both sides, that is, both forwardly and rearwardly of the corresponding severance lines 16 of the transfer strips, so that the courses of the lines 16 substantially bisect the notches 29.

As shown in Figs. 1 and 3, the record strips 7, 8 and 9 of the primary set are also provided with notches 31 at their rear ends adjacent to the respective severance lines 14, these notches being substantially the same shape as the notches 28 but positioned at the opposite sides of the tear-off lines. The notches 31 are repeated throughout the assembly length at form length intervals and positioned adjacent to the respective severance lines 14. The notches 31 assist in severing the record leaves of the primary sets after they have been inscribed, but in some cases they may be omitted, as shown in the embodiment of Fig. 5.

In use the improved manifolding assembly may be inscribed either in a writing machine or by a pencil or other manual means, inscriptions being first written upon the record leaves 22, 23 and 24 of a primary set. The original inscription is made on the top or original record leaf 22 and transferred to the copy leaves 23 and 24 by means of the transfer material. When these entries have been made, the primary set of record leaves is gripped at the grip sections 30 and severed from the assembly along the weakened severance lines 14 and at the same time stripped or removed from interleaved relation with the other leaves. If a typewriting machine is used, the assembly is fed forwardly over the platen so as to expose the next successive group of severance lines 14, 16 forwardly of the platen. When in this position the inscribed primary set of leaves is severed and removed as described. The assembly is then fed rearwardly in the typewriting machine to bring the record leaves 25, 26 and 27 of the secondary set into inscription receiving position, whereupon the original writing is made upon the upper or original record leaf 25 and transferred by the transfer strips to the copy record leaves 26 and 27. Since the original record leaves are contiguous to each other and the copy record strips and corresponding copy record leaves are similarly contiguous to each other, each inscription made on the upper original record leaf is excluded from appearing on the contiguous underlying original record leaf because there is no intervening transfer material; and similarly the inscription is excluded from appearing on the contiguous underlying copy record leaf. In other words, the inscriptions made on a set of record leaves at any one time is exclusive of inscriptions made on another set. As soon as this secondary set is thus completely inscribed, the entire secondary set together with the interleaved transfer leaves is severed from the assembly along the weakened

severance lines. A secondary set thus severed is shown in Fig. 4 of the drawings. When in this condition the transfer leaves may be quickly and easily stripped or separated from the record leaves by gripping the tabs 18 and at the same time gripping the record leaves in line with the notches or recesses 19, and then exerting a pull at the two gripped parts in opposite directions. It will be noted that the attaching staple 20 is released from the record strips by severance along the weakened lines 14, but that it continues to cling to the grip tabs 18 of the transfer strips.

It will thus be seen that the same transfer material is employed for two successive writing operations, first for transferring inscriptions to the copy leaves of the primary set of record leaves, and secondly to transfer the inscriptions to the copy leaves of the secondary set of record leaves. The result is that full, clear, legible transfer copies are made at each inscription.

The embodiment shown in Figs. 5 and 6 of the drawings is similar to that above described and the corresponding parts are designated by the same reference numerals with the addition of the index *a*. However, in this embodiment the record leaves 25*a*, 26*a*, 27*a* of each secondary set, and the corresponding record strips 10*a*, 11*a* and 12*a* are slightly narrower than the corresponding record leaves and record strips of the primary set, and the edges of these record leaves of the secondary sets, as best seen in Fig. 6, are inset at the left margin of the assembly from the corresponding edges of the record leaves of the primary sets. Also, the transfer strips 15*a* have the left hand edges inset substantially the same distance as the edges of the record leaves of the secondary set. This offsetting of the edges of the strips provides selective grip extensions or margins 30*a* along the lengths of the record leaves 22*a*, 23*a*, 24*a*, whereby these leaves of each primary set can be gripped anywhere along these projecting edges to the exclusion of the underlying edges of the record leaves of the secondary set and without gripping the transfer leaves. In this manner each inscribed primary set of record leaves can be severed along the weakened lines 14*a* and separated from the assembly in a manner similar to that described above in connection with the embodiment of Fig. 1.

In order to provide for ample thumb space in gripping the leaves at the selective grip formations, it is sometimes desirable to provide the secondary sets of record leaves with marginal notches 28*a*, and to provide the transfer strips with similar marginal notches 29*a* arranged in a manner similar to that of the notches 28 and 29 and described above in connection with the embodiment of Fig. 1. Projecting grip tabs on the transfer strips 15*a* are provided at each group of transverse severance lines similar to the grip tabs 18 as described above in connection with the embodiment of Figs. 1 to 4. Therefore, it will be seen that the record leaves of a secondary set can be separated from the transfer leaves in the same manner as described above in connection with the first embodiment.

Since certain changes may be made in the article herein described 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 drawings shall be interpreted as illustrative and not in a limiting sense.

The invention having thus been fully described, the following is claimed:

1. In a manifolding assembly, in combination, a plurality of record units in superposed relation and each having a plurality of long continuous record strips in face to face contact with each other and having longitudinally spaced transverse weakened severance lines dividing them into leaf sets arranged in a series along the assembly, each said leaf set including a primary record leaf set having original and copy record leaves and a secondary record leaf set including original and copy record leaves, the record leaves of said secondary set being respectively arranged in contiguous relation with the record leaves of said primary set whereby any inscription entered on the record leaves of the primary set is exclusive of inscriptions of the record leaves of the secondary set, transfer material positioned in transfer relation between said record units at each said leaf set of the assembly so as to initially transfer inscriptions to the copy leaves of the primary leaf sets and later to transfer inscriptions to the copy leaves of the secondary leaf sets when the leaves of the primary set have been removed, selective separating formations spaced along the assembly at each said leaf set thereof for effecting severance and removal of the primary set of record leaves while still in their original position in the assembly and thus placing the secondary set of record leaves in position for later transfer inscription with said transfer material, the record leaves of each said secondary set being arranged so as to be free from the transfer material thereof when severed from the assembly along the respective weakened severance lines after removal of the primary set as aforesaid, and selective stripping formations at spaced intervals along the assembly at the respective leaf sets whereby the record leaves of said secondary set when severed from the assembly as aforesaid may be separated from the transfer material thereof.

2. In a manifolding assembly in combination, long continuous record and transfer strips interleaved in transfer relation, said assembly having longitudinally spaced transverse weakened severance lines dividing it into a plurality of leaf sets of record and transfer leaves arranged in transfer relation, said record strips being arranged in an original record strip unit and one or more copy record strip units, said original record strip unit having at least two original record strips arranged in superposed contiguous relation with each other whereby only the upper original record strip can be inscribed at any one time while the underlying original record strip or strips is excluded from being inscribed, and said copy record strip unit or units similarly having at least two copy record strips arranged in superposed contiguous relation with each other whereby only the upper copy record strip or strips can be inscribed at any one time while the underlying copy record strip or strips is excluded from being inscribed, said original and copy record strip units adjacent to each other having a transfer strip positioned therebetween in transfer relation so as to form at each said leaf set primary and secondary record leaf sets arranged for exclusive successive transfer inscription, each said record leaf set including an original record leaf arranged to receive only original inscriptions and a copy record leaf arranged to receive only copy or trans-

fer inscriptions, selective grip formations in each of said leaf sets whereby the record leaves of a primary set that are initially inscribed may be gripped and severed from the strips along certain of said weakened severance lines and stripped from the leaf set, thus leaving a remaining secondary set of record leaves in its original attached position in the assembly for later transfer inscription with the transfer leaf, the record leaves of said remaining set of record leaves being arranged so as to be free from the transfer leaf after inscription and severance thereof from the assembly along certain of said transverse weakened severance lines so that they may be readily separated from interleaved relation with the transfer leaf, and tongues on said transfer strip or strips respectively positioned adjacent to said transverse severance lines so as to form projecting grip tabs and complementary recesses providing spaced selective grip formations at each of said remaining sets of record and transfer leaves when severed as aforesaid, whereby the record and transfer leaves thereof may be separated from each other.

3. In a manifolding assembly, in combination, a plurality of record units in superposed relation and each having a plurality of long continuous record strips in face to face contact with each other and having longitudinally spaced transverse weakened severance lines dividing them into leaf sets arranged in a series along the assembly, each said leaf set including a primary record leaf set having original and copy record leaves and a secondary record leaf set including original and copy record leaves, the record leaves of said secondary set being respectively arranged in contiguous relation with the record leaves of said primary set whereby any inscription entered on the record leaves of the primary set is exclusive of inscriptions of the record leaves of the secondary set, transfer material positioned in transfer relation between said record units at each said leaf set of the assembly so as to initially transfer inscriptions to the copy leaves of the primary leaf sets and later to transfer inscriptions to the copy leaves of the secondary leaf sets when the leaves of the primary set have been removed, selective separating formations spaced along the assembly at each said leaf set thereof for effecting severance and removal of the primary set of record leaves and thus placing the secondary set of record leaves while still in their original position in the assembly in position for later transfer inscription with said transfer material, attaching devices positioned along the assembly respectively directly at said weakened severance lines whereby the record leaves of each said secondary set will be freed from the transfer material thereof when severed from the assembly along the respective weakened severance lines so as to provide for separation of the record leaves and transfer material, and tongues on said transfer material respectively positioned adjacent to said transverse severance lines so as to form projecting grip tabs and complementary recesses providing spaced selective grip formations at each of said secondary record leaf sets when severed from the assembly as aforesaid whereby the record leaves thereof may be separated from the transfer material.

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CERTIFICATE OF CORRECTION.

Patent No. 2,360,143.

October 10, 1944.

JAMES GORDON KERR.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 4, first column, lines 29 and 30, claim 1, strike out the words "while still in their original position in the assembly" and insert the same after "leaves" in line 31, same claim; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 2nd day of January, A. D. 1945.

Leslie Frazer

(Seal)

Acting Commissioner of Patents.