July 7, 1936. A. M. BOVIER 2,046,544

COMPOSITE TRAVELER RECORD

Filed Oct. 14, 1931 2 Sheets-Sheet 1

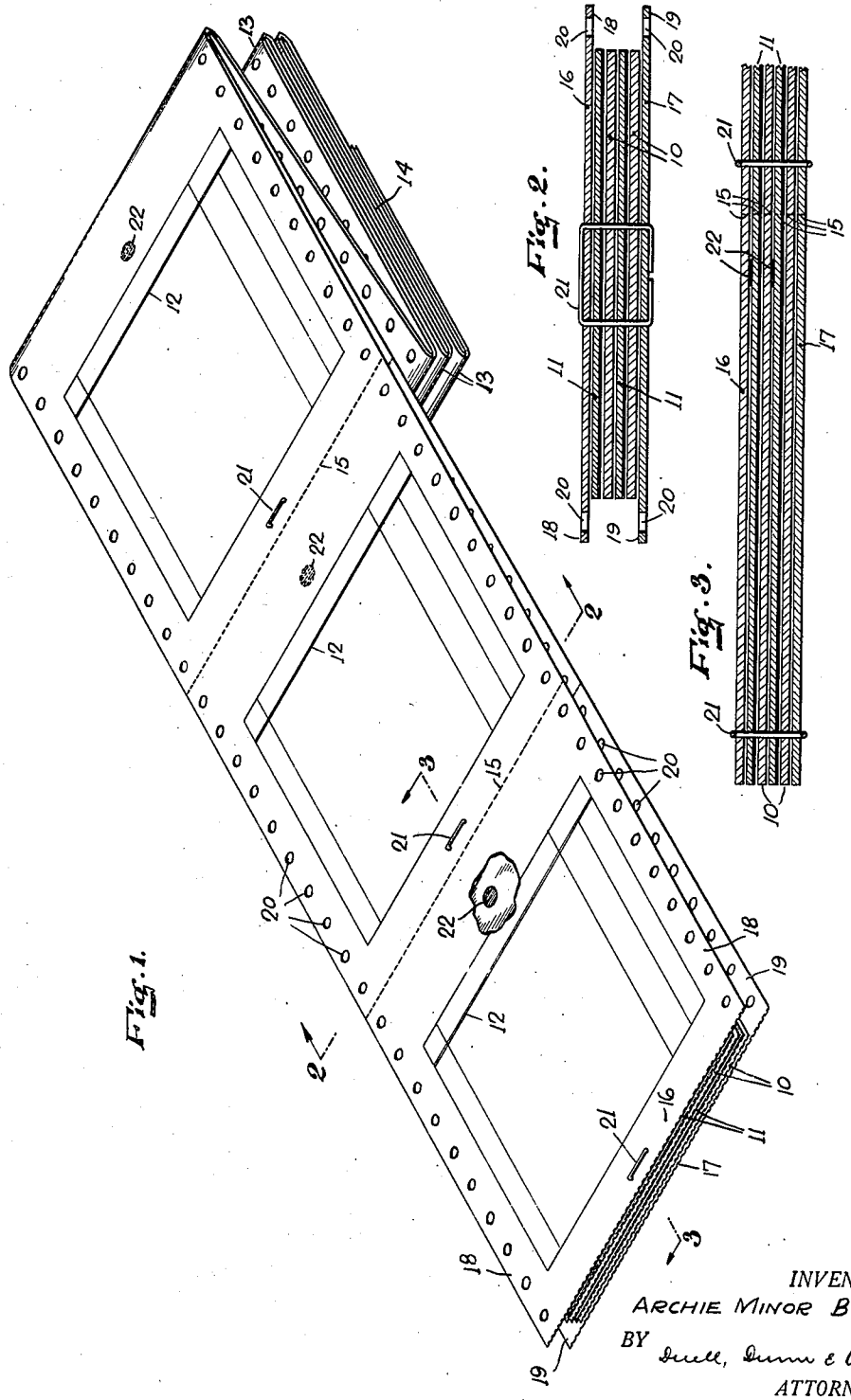


Fig. 1.

Fig. 2.

Fig. 3.

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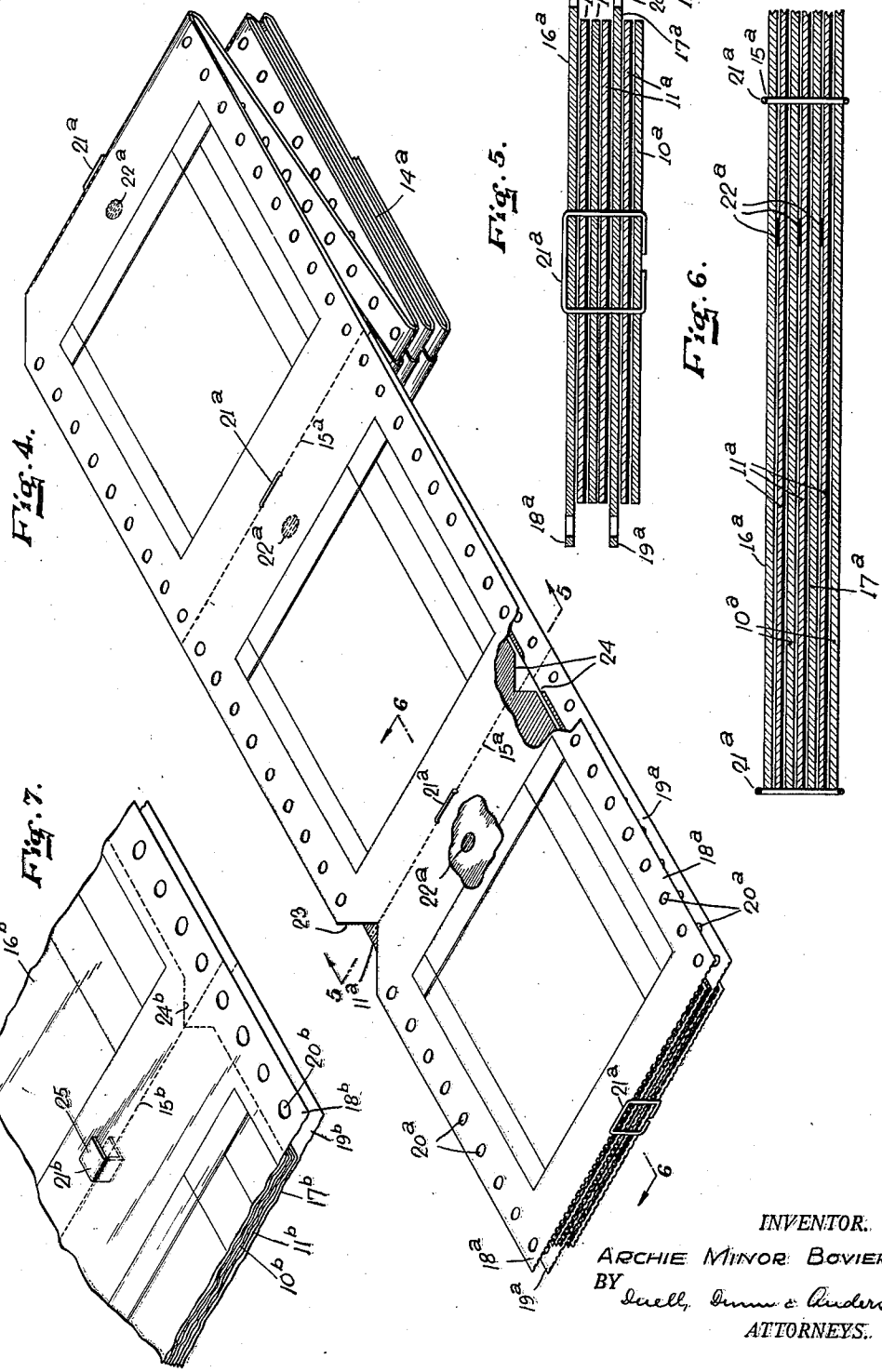


Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

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UNITED STATES PATENT OFFICE

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COMPOSITE TRAVELER RECORD

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Application October 14, 1931, Serial No. 568,702

3 Claims. (Cl. 282—12)

This invention relates to improvements in record devices for manifold inscription and, with reference to some of the more particular features thereof, it relates to improvements in composite traveler records adapted for use in various forms of writing machines. While the improved record may be utilized in various types of writing machines, especially where a large number of manifold copies are required, it is particularly well adapted for use in automatically or mechanically controlled writing machines such, for example, as printing telegraphs either in the transmitting or the receiving instruments.

It is a general object of the invention to provide a composite traveler record for use in machines of the class mentioned having improved construction and arrangement whereby the several traveler strips of the record are effectively maintained in correct alignment with each other even though a large number of strips are used and where it is necessary to operate the record continuously over considerable periods of time without readjustment by an operator. For example, the receiving instrument of a printing telegraph system is often necessarily operated over long intervals of time without any manual readjustment of the records to keep them in alignment. It is therefore very important in such a system that the different record strips be maintained in correct alignment and registry with each other in order that the manifold copies may appear in their proper positions upon the respective blank forms or spaces provided for them. This improved composite traveler record is well adapted for this class of work as it is provided with improved means for maintaining the record strips always in correct alignment with each other and it can accomplish this result even though a large number of manifold copies are to be made.

A further object of the invention is to provide an improved composite traveler record wherein feeding supports or supporting belts are provided for work webs or record strips to support the latter and to maintain them at all times in correct alignment with each other. The supporting belts themselves may be made up to form record strips and to this end may be provided with blank forms for receiving inscriptions or they may be unprovided with such blank forms if desired. In any case the supporting or carrier belts may be made of sheet material such as paper which is sufficiently tough and strong to provide the necessary support for the record and transfer strips.

According to another feature of the invention, the supporting or carrier belts for the record and transfer strips are provided with reed bands extending laterally beyond the adjacent longitudinal edges of the record and transfer strips, thus avoiding engagement and pressure upon the transfer strips by the feeding mechanism and preventing smutting or smearing of the record strips by the carbonized areas. These feed bands are also preferably, though not necessarily, provided with longitudinal series of feeding apertures for the reception of the teeth of feeding sprockets or pin wheels.

Another object of the invention is to provide a composite record of the class mentioned having an improved arrangement of attachments for securing the several traveler strips together, thus avoiding relative displacement or disalignment thereof and maintaining them in correct superposed register especially when used in the type of automatic writing machines above mentioned.

Still another object of the invention is to provide in composite traveler records an improved attaching arrangement at each of a series of longitudinally spaced parts whereby the attachment is released when the inscribed parts or leaves are severed from the supply.

Another object is to provide in composite traveler records of the class mentioned embodying continuous record and transfer strips an improved means for selectively engaging the record sheets and for selectively engaging the transfer sheets of an inscribed section of the record when severed from the supply whereby said record and transfer sheets may readily be separated or stripped from each other.

Other objects of the invention will be in part pointed out in the following detailed description of an illustrative but preferred embodiment of the invention and will be in part obvious in connection therewith.

The invention accordingly comprises the features of construction, combinations 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 complete understanding of the nature and objects 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 fragmentary perspective view of a record embodying the invention, the showing being partially diagrammatic and the strips or webs slightly separated for convenience of illustration;

Fig. 2 is an enlarged transverse section upon line 2—2 of Fig. 1, the parts being enlarged or magnified to facilitate the disclosure;

Fig. 3 is also an enlarged or magnified section taken longitudinally of the record substantially on line 3—3 of Fig. 1;

Fig. 4 is a perspective view similar to that of Fig. 1 but showing certain modified features;

Fig. 5 is an enlarged section substantially on the line 5—5 of Fig. 4;

Fig. 6 is an enlarged longitudinal section upon the line 6—6 of Fig. 4; and

Fig. 7 is a fragmentary section similar to Fig. 4 but disclosing a further modified embodiment.

Referring to Figs. 1, 2 and 3 for a detailed disclosure of this embodiment, it will be observed that there are a plurality of relatively superposed record strips 10 with which are interleaved in manifolding relation carbon or transfer strips 11. Although but two record strips and two carbon strips are shown for convenience of illustration, it will be understood that any desired number may be utilized. In certain classes of work where the inscriptions are made by automatic machines, eight or more copies are required and the necessary strips may be arranged in superposed manifolding relation for this purpose. These record and transfer strips, as shown, are preferably of the long continuous traveler type and the record strips may be provided with blank forms 12 arranged in longitudinal series therealong and appropriately designed for the reception of inscriptions. These traveler strips may be transversely folded at longitudinally spaced intervals as indicated at 13 to form the zigzag folded supply pack 14 or they may be arranged in a supply roll or otherwise if desired.

At longitudinally spaced intervals each of the record and transfer strips 10 and 11 may be provided with transverse weakened lines 15 which may be formed in any preferred manner such as by perforating, creasing or scoring or the like.

For the purpose of supporting and for feeding the record and transfer strips and for maintaining them in correct registry and alignment with each other, supporting or carrier belts 16 and 17 are provided. Both of these carrier belts are preferably longitudinally coextensive with the record and transfer strips and are arranged in superposed supporting relation therewith. Also, both the upper and lower carrier belts are preferably provided with transverse weakened lines 15 spaced to correspond with line 15 of the record and transfer strips. The upper carrier belt 16 is also shown as being provided with a longitudinal series of blank inscription forms 12 spaced the same as the forms of the record strips 10 and arranged in superposed manifolding relation therewith. The lower carrier belt 17 may also be provided with similar blank forms. However, the blank forms may be omitted from the carrier belts.

Both the upper and lower carrier belts 16 and 17 will be constructed of sheet material, such as paper, which is sufficiently tough and strong to provide support for the record and transfer strips 10 and 11 but the upper carrier belt 16 will be made of material which is sufficiently flexible and pliable to readily transmit the impressions of the type bars for effecting transfer inscriptions on the lower record strips. When the lower carrier belt 17 is arranged at the bottom of the record, as shown in Figs. 1, 2 and 3, it may if desired be made of heavier and stronger material than the upper strip since it is unnecessary that the transfer impressions be transmitted through it. The lower carrier belt 17 can also be used as a record strip, in which case an additional transfer strip will be interleaved between it and the lower record strip 10. It will be understood that the record and transfer strips 10 and 11 will be of a weight and quality ordinarily used for manifolding inscriptions. The record strips 10 may be made of different colors to aid in sorting or distribution and the transfer sheets 11 are preferably of the one-time type to be discarded ordinarily after a single transfer use.

Both the upper and lower carrier belts 16 and 17 are provided with feeding bands 18 and 19 positioned at opposite lateral edges thereof and extending longitudinally for the entire length of the record. These feeding bands are preferably, as shown, formed integrally with the respective carrier belts although they may be separate strips pasted or otherwise secured to the respective belt edges. They preferably, as shown, extend outwardly or laterally at opposite edges of the record beyond the adjacent edges of the record and transfer strips 10 and 11. The feeding bands thus extend beyond the lateral edges of the record strips proper and beyond the edges of the transfer strips, thus being positioned laterally outside of superposed registry therewith, or in other words, the edges of the record and transfer strips are inset from the feeding bands. While it is preferred to employ the feeding bands at both lateral edges of the carrier belts, as shown, one or more of said bands may for some purposes be omitted. Also the feeding bands may be connected to the respective carrier belts by weakened severance lines extending longitudinally of the record preferably adjacent the edges of the record and transfer strips. By this means the feeding bands may be readily severed from the carrier belts or strips after they have served their feeding function.

These feeding bands 18 and 19 are designed for cooperation with feeding elements of a writing machine which may be of any well known form such as gripping elements or rolls designed to grip the bands to feed the entire record. If feeding sprockets or pin wheels of the type employing strip penetrative teeth or pins are used, the feeding bands 18 and 19 will be provided with longitudinal series of feeding apertures 20. These series of feeding apertures are relatively superposed in the superposed bands and also the individual apertures 20 are respectively in superposed relation whereby each feeding pin may readily enter two or more relatively superposed apertures, thus exerting a feeding impulse upon all of the carrier belts at any given instant. If more than two carrier belts are thus employed, it will be understood that the feeding bands and feed apertures for all of the carrier belts will be arranged in relatively superposed relation at each longitudinal edge of the record. Since the feeding bands are disposed laterally beyond the adjacent edges of the record and transfer strips, the feeding elements of the machine will not press directly against said strips and the tendency to smut or smear the record strips with carbon or transfer material will thus be entirely avoided.

In order to aid in maintaining the traveler strips, including the carrier belts as well as the record and transfer strips, in correctly aligned manifolding relation with each other, it is desirable to secure the strips together. This is accomplished in the embodiment shown by attaching devices 21 spaced at longitudinal intervals throughout the length of the record. While these attaching

devices may be of various forms, it is convenient to employ a stitch or light wire, as shown, extending through all of the superposed transfer strips. Also it is desirable to place one such attaching device at or near each set of relatively superposed weakened severance lines 15. The severance lines of the respective traveler strips divide said strips into a longitudinal series of form sheets or leaves, as shown, the leaves being relatively superposed in sets. Therefore in the form of Fig. 1 when a set of the superposed leaves having been inscribed is severed from the supply along the set of weakened lines, said sets of leaves will remain attached by the attaching device 21. Therefore, supplemental data may be entered and transferred to the lower sheets or leaves after severance. The leaves may be separated from each other after the inscriptions have been completed by pulling them apart to cause severance thereof at the attachment 21.

Additional attachments are preferably employed for attaching certain of the traveler strips together at a longitudinal series of points therealong. Said attachments are shown in the form of spots 22 of adhesive spaced longitudinally of the record in each set of form sheets from the respective attachments 21. The attachments 22, as shown, are used between alternate adjacent leaves only of each set of leaves, the other adjacent leaves being unattached in this manner. As shown, the back or uncoated surface of each transfer strip is thus attached by a spot of adhesive to the adjacent overlapping record strip. These attachments aid in keeping the strips in correct superposed alignment and they also aid in keeping the leaves of the severed sets in correct superposed position during the entry of any subsequent inscriptions, and they assist in maintaining the sheets in assembled relation until such time as it is desired to separate them. The spot attachment is quite light in character and is readily severed by pulling the sheets transversely of their planes away from each other. Before the transfer sheets are detached from the respective record sheets by severing the attaching spots 22, each record sheet with the attached transfer sheet may serve as a transfer unit to transfer to any desired record surface any supplemental data writen upon the record sheet.

According to the embodiment of the invention shown in Figs. 4, 5 and 6, the general arrangement of record and transfer strips and also of the carrier belts is the same as above described, and corresponding parts are designated by the same reference numerals with the addition of the index "a". In this form, however, the lower carrier belt 17a is not disposed at the extreme bottom of the assembly but a record strip 10a and transfer strip 11a are disposed beneath it. It will be understood that the number of strips shown is illustrative merely, and a larger number may ordinarily be employed. This arrangement of carrier belts is more effective where an unusually large number of record strips are used.

Furthermore in this embodiment, the record and transfer strips are provided with selective engaging or gripping devices whereby the carbon sheets and also the record sheets, when a set thereof has been severed from the record, may be selectively gripped or engaged at remote points thereof and separated or stripped from each other. The form of device shown for this purpose includes the notches 23 in the record strips including the carrier belts arranged in a longitudinal series along one edge of the carrier, and similar notches 24 in the transfer strips arranged in longitudinal series along the opposite lateral edge of the record. The notches 23 and 24 preferably extend across the adjacent set of severance lines 15a, as shown. Thus, it will be seen that severance of one of the sets of form leaves along the severance lines 15a will provide selective grip formations for the record strips at one corner thereof and similar grip formations at another corner for the transfer sheets. These selective grip formations provided by the notches 23 and 24 are in embryo or incomplete state until the set of form leaves is severed but are completed by the severing operation. It will be noted that the corners of the record sheets are thus exposed through the notches of the transfer sheets so that they may be selectively gripped without gripping the transfer sheets. Similarly, the corners of the transfer sheets may be selectively gripped at an opposite corner. The transfer sheets may thus be readily separated in a group from the record sheets. It will be obvious that the selective grip formations may be variously constructed and arranged for effecting the stripping operation, the construction shown being illustrative merely.

As shown in Figs. 4 and 6, the attaching stitches or staples 21a may be positioned contiguous to the respective sets of severance lines 15a. That is, these severance lines lead directly to the attachments. Therefore, when the sets are severed along the weakened lines, the respective attachment 21a will be released so that the form leaves or sheets of the set will be released from each other insofar as this attachment is concerned. However, the alternate adjacent record and transfer leaves will remain respectively attached to each other by the spots of adhesive 22a, as above described.

In the embodiment of Fig. 7, the general construction and arrangement is similar to that of Figs. 4, 5 and 6 and corresponding parts are designated by the same reference numerals with index "b" instead of index "a". However, in this form the series of attaching devices 21b is in the form of light sheet members such as light paper or cardboard or very light metal, and is provided with upper and lower flanges 25 extending rearwardly of the record and engaging the upper and lower surfaces thereof. These flanges, if desired, can be secured to the upper and lower faces of the record as by light pasting. Such attachment may, however, be omitted, the flanges remaining in close contacting condition with the surfaces by virtue of the tendency of the material to stay bent or to remain in the position to which it is adjusted. Each of the attachments 21b described above in connection with Fig. 4 may extend through the assembly directly at the superposed set of severance lines 15b. In other words, the aperture through which the attachment extends is intersected by the severance lines 15b. Therefore severance of the record along these lines will expose the attachment 21b, whereupon its attaching effort is released and it may readily be removed, whereupon the record and transfer sheets may be stripped or separated from each other as already described. Also this form of attachment is flexible to some extent longitudinally of the record permitting the several traveler strips to move longitudinally slightly with reference to each other so as to avoid buckling or wrinkling of the strips, especially when they are folded into the supply pack.

All of the illustrative embodiments of the in-

vention herein described are well adapted for maintaining all of the elements of the composite record in correctly aligned condition at all times. This desirable result is effectively accomplished even though large numbers of superposed record and transfer strips are employed. Also, by virtue of the novel features of construction described, the composite record may be accurately fed by the feeding mechanism and maintained at all times in accurate register over long periods of time and without the services of an attendant for effecting manual adjustment.

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 drawings 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 composite traveler record comprising a plurality of relatively superposed traveler strips, certain of which are record strips and transfer strips and a plurality of which are carrier belts for the other strips, each of said carrier belts having both of its lateral edges projecting beyond the adjacent lateral edges of the other strips to form feeding bands for the composite record, and said record and transfer strips being disposed between said carrier belts and having their lateral edges inset from the adjacent feeding bands, longitudinally spaced transverse weakened lines relatively superposed and arranged in a longitudinal series of sets and dividing the respective strips into a longitudinal series of form sheets or leaves which are relatively superposed in sets, a fastening device for holding together the sheets or leaves of each of said sets and located adjacent one of said transverse weakened lines, a further fastening means for securing each transfer sheet to the adjacent overlying record sheet in a set without securing it to any of the other sheets of said set, said further fastening means being located at the other end of said set adjacent the respective transverse weakened line, a series of selective grip notches formed in said carrier belts and record strips adjacent one edge thereof and in line with alternate sets of transverse weakened lines, and a second series of selective grip notches formed in said transfer strips directly across the traveler record from each of the other notches, said notches being formed in each instance so as to extend into the material of the sheets on either side of the transverse weakened line at which they are formed so that a severance of the record upon such transverse weakened line will leave a portion of such notches upon each of the resultant sets of form leaves.

2. A composite traveler record including, in combination, a plurality of relatively superposed traveler strips, certain of which are record and transfer strips, said record and transfer strips having longitudinally spaced weakened transverse severance lines arranged in a longitudinal series of sets providing for division of the strips into sets of relatively superposed record and transfer sheets, fastening devices arranged in a longitudinal series along the composite record and one of which is located in the vicinity of each of said sets of sheets for holding said superposed strips together, further fastening devices one of which is located at each of said sets of sheets and positioned for attaching the respective transfer sheet to the adjacent overlying record sheet in the set without attaching it to any of the other sheets of said set, said record strips being formed along one edge thereof with selective grip notches positioned only in line with alternate sets of transverse weakened lines, said transfer strip being formed with selective grip notches along the edge of the record opposite to the first mentioned grip notches, said transfer strip notches being respectively positioned directly across the traveler record from the corresponding record strip notches and at the same sets of severance lines, said notches in the record and transfer strips being formed in each instance so as to extend into the material of the sheets on either side of the transverse weakened lines at which they are formed so that a severance of the record upon such transverse weakened lines will leave a portion of such notches upon each of the resultant sets of sheets.

3. A composite traveler record including, in combination, a plurality of relatively superposed traveler strips, certain of which are record and transfer strips, said record and transfer strips having longitudinally spaced weakened transverse severance lines arranged in a longitudinal series of sets providing for division of the strips into sets of relatively superposed record and transfer sheets, fastening devices arranged in a longitudinal series along the composite record and one of which is located in the vicinity of each of said sets of sheets for holding said superposed strips together, further fastening devices one of which is located at each of said sets of sheets and positioned for attaching the respective transfer sheet to the adjacent overlying record sheet in the set without attaching it to any of the other sheets of said set, said record strips being formed along one edge thereof with selective grip notches positioned only in line with alternate sets of transverse weakened lines, said transfer strip being formed with selective grip notches along the edge of the record opposite to the first mentioned grip notches, said transfer strip notches being respectively positioned directly across the traveler record from the corresponding record strip notches and at the same sets of severance lines, said notches in the record and transfer strips being formed in each instance so as to extend into the material of the sheets on either side of the transverse weakened lines at which they are formed so that a severance of the record upon such transverse weakened lines will leave a portion of such notches upon each of the resultant sets of sheets, and said first mentioned fastening devices being positioned respectively directly on the sets of weakened transverse severance lines so as to be released from strip holding effect upon severance along the weakened lines.

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