Nov. 13, 1934. A. A. JOHNSON 1,980,339

MANIFOLDING

Filed May 22, 1931

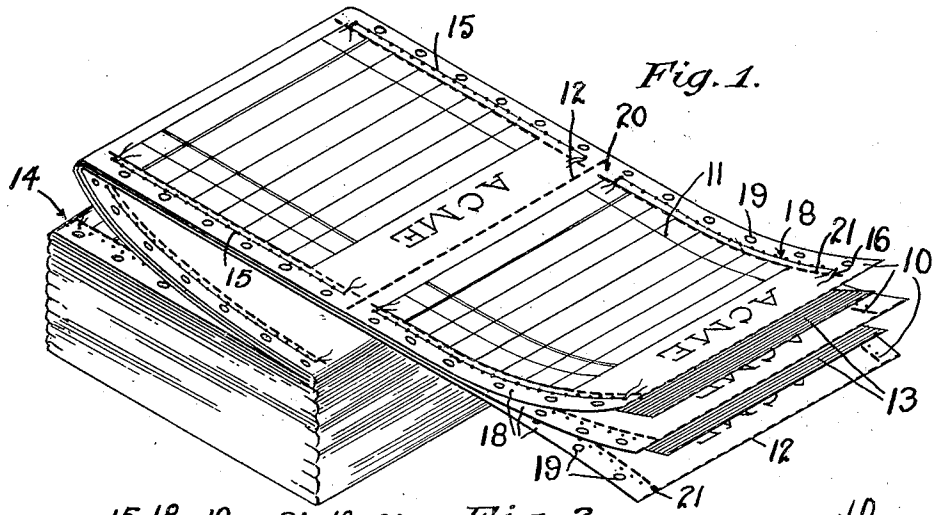


Fig. 1.

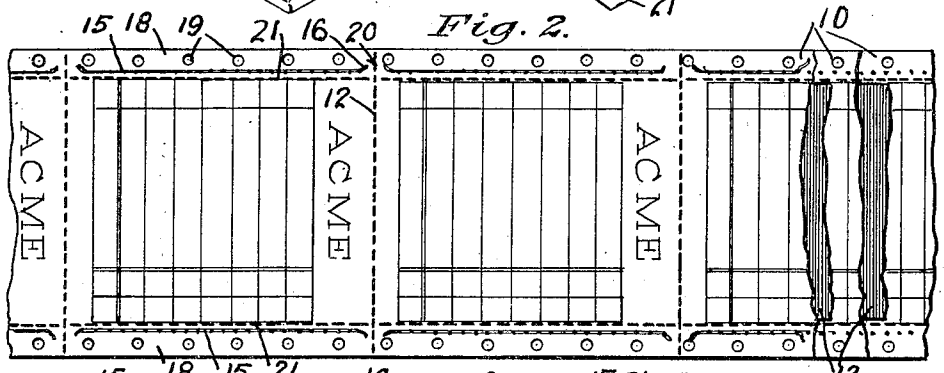


Fig. 2.

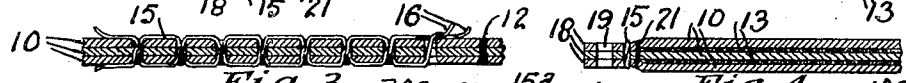


Fig. 3.

Fig. 4.

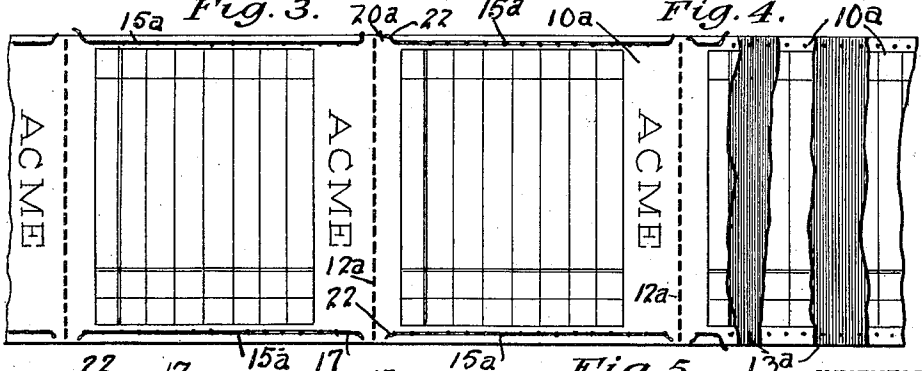


Fig. 5

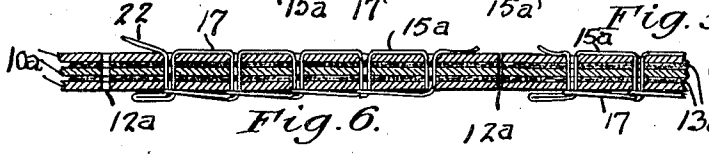


Fig. 6.

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UNITED STATES PATENT OFFICE

1,980,339

MANIFOLDING

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Application May 22, 1931, Serial No. 539,246

6 Claims. (Cl. 282—12)

This invention relates to manifolding, and more particularly, to a pile of continuous record strips divided into form-lengths and used in making original and duplicates through the intermediary of carbon strips interleaved with the record strips.

In my copending application, Serial No. 369,545, I have disclosed such superposed and interleaved worksheet strips secured together by transversely extending rows of flexible textile stitches for holding the strips of the pile together preparatory to, during, and subsequent to, the writing operation. These stitches, of course, left the strips of the pile unconnected for the greater part of their length.

An object of this invention is to provide means for holding the record strips of the pile together with the carbon strips captive between them for practically their entire length.

This is accomplished by providing rows of longitudinally extending stitches through the strips of the pile, in one case through only the record strips at portions thereof which extend beyond the carbon strips, and in another case through both the record strips and the carbon strips.

Instead of extending continuously along the side margins of the pile, according to the present invention, the longitudinally extending stitches are interrupted at the junction of one form with another, usually designated by transverse weakening lines through the strips of the pile.

Other features and advantages will hereinafter appear.

In the accompanying drawing which illustrates several forms of this invention—

Figure 1 is a perspective view of a pile of record strips secured in accordance with this invention. In this case, the carbon strips are narrower than the record strips and are held against shifting laterally by the rows of stitching.

Fig. 2 is a plan view of the pile shown in Fig. 1.

Fig. 3 is a longitudinal sectional view through the row of stitches shown in Figs. 1 and 2.

Fig. 4 is a transverse section through one side of the pile of strips shown in Fig. 2.

Fig. 5 is a plan view of the pile of strips wherein the carbon strips and record strips have the same width and the rows of stitches extending through both kinds of strips.

Fig. 6 is a longitudinal sectional view of the pile of strips shown in Fig. 5, taken through the row of stitches.

The improved pack of the present invention comprises a plurality of record strips 10, there being three shown in the pile, one or more of which has a section of printed forms 11 preferably separated by traverse lines of perforations 12 which, in addition to weakening the strips to permit one set of forms to be separated from the next adjacent one, designates the lines of severance between the forms.

Located between each two adjacent record strips 10 is a carbon or transfer strip 13 through the medium of which original writing (either by hand or by a typewriting machine) performed on the top strip 10 is reproduced on the under strips 10. To facilitate the separation of one set of forms 11 from that following, the carbon strips 13 may also be provided with lines of perforations 14 registering with the perforations 12 in the record strips 10.

The pile of strips 10 and 13 may be folded back and forth in zig-zag fashion at form-length intervals or multiples thereof, so as to produce a compact pack or book 14. As stated, the strips 10 and 13 are held together by means provided for the purpose so that they maintain their registration and alignment both laterally and longitudinally.

Instead of this means being as in my copending application, Serial No. 369,545, filed June 10, 1929, extending in the body of the form and comprising a row of transversely extending stitches, I provide, according to the present invention, a row 15 of stitches at one or both lateral edges of the pile.

These rows of stitches may be each formed of two threads 16 sewed in lock-stitch fashion, as shown in Fig. 3, or they may be each constituted by a single thread 17 in the form of chain stitches, as shown in Fig. 6.

As shown in Fig. 1, the record strips 10 are wider than the carbon strips 13 and have protruding margins 18 forming feeding bands and preferably including pin-wheel apertures 19 by means of which the advancement and position of the pile is controlled in a typewriting or like machine provided with pin-wheel feeding devices. In this case, the rows of stitches 15 preferably are located in the feeding bands 18 and need not penetrate the carbon strips, for, being located at both sides thereof, will satisfactorily hold the carbon strips captive in the pile against undesirable lateral movement.

Instead of extending continuously through adjacent sets of forms 11, in which event the stitches would extend through the transverse tearing lines 12 and continue to hold the strips together when it is attempted to separate one set of forms from the next, the rows of stitches have interruptions 20, according to the present invention, at the lines

of perforations 12. Thus it will be seen that the present invention provides for holding the strips together throughout their entire length except for the gaps 20 where they are interrupted for the purpose of permitting the set of forms to be separated from the pile.

After a set of forms has been written upon and removed from those following along the lines 12, they remain secured together by the rows of stitches 15 and may subsequently receive other inscriptions. When, however, it is desired to distribute the several records, they may be separated by tearing away the feeding bands 18 containing the stitches 15 along longitudinally extending lines of perforations 21 located between the stitches 15 and the main body of the form 11.

In the form of the invention shown in Fig. 5, the record strips 10*a* and carbon strips 13*a* have the same width, and in this case they are united practically from end to end of each form by rows of stitches 15*a* along one or both lateral margins which are interrupted so as to form gaps 20*a* at transversely extending lines of perforations 12*a*.

The stitches 15 in this case may be lock stitches, as shown in Fig. 3, or they may be chain stitches, as shown in Fig. 6. However, the latter is considered preferable in this form and accordingly is shown because, when, as suggested in my copending application, Serial No. 369,545, the chain stitches are left unlocked, they may be removed with facility by merely pulling the loose unlocked end 22 thereof, thus avoiding the necessity of otherwise disposing of the stitches and disconnecting the stitches from the superposed strips.

Variations and modifications may be made within the scope of this invention and portions of the improvements may be used without others.

Having thus described the invention, what is claimed as new and for which it is desired to obtain Letters-Patent, is:—

1. A manifolding pile adapted for use in a typewriting machine comprising a plurality of superposed continuous record strips; a strip of transfer material between each two of said record strips running with, and of the same length as, the latter, said record strips extending at both margins beyond the edges of the transfer strips to form feeding bands; and rows of textile thread stitches running through the pile in each of said feeding bands and extending parallel with the feeding bands, and the carbon strips being confined against lateral movement by said rows of stitches, said rows of stitches being interrupted at points spaced longitudinally of the pile.

2. Superposed record strips and a transfer strip between adjacent record strips, said strips being divided into successive manifolding sets by transverse weakening lines; rows of textile stitches securing said strips together along longitudinal edges thereof, the rows of stitches being interrupted at said registered weakening lines and said stitches being lock stitches; and a longitudinally extending line of weakeness inwardly removed of the lock stitches and closely adjacent thereto.

3. Superposed record strips and a transfer strip between adjacent record strips, said strips being divided into successive manifolding sets by transverse weakening lines; and rows of textile stitches extending along and securing said strips together along longitudinal edges thereof, the rows of stitches being interrupted at said registered weakening lines and said stitches being unlocked chain stitches.

4. Superposed record strips and a transfer strip between adjacent record strips; and longitudinally spaced seams of unlocked chain stitches extending longitudinally of the strips for securing the strips together.

5. A pile of manifolding strips divided into successive manifolding sets by transverse weakening lines; and a longitudinal row of textile stitches extending continuously from one line of weakness to the next for securing said strips together in registration, said stitches being unlocked chain stitches.

6. A pile of superposed record strips and a transfer strip between adjacent record strips, said record only having at at least one lateral margin of the pile a feeding band having a longitudinally extending row of feeding apertures; and a row of textile stitches extending longitudinally of the pile in the feeding bands and coextensively therewith and adjacent the feeding apertures and reenforcing the feeding bands.

ARTHUR A. JOHNSON.