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MACHINE FOR MAKING MANIFOLD FORMS

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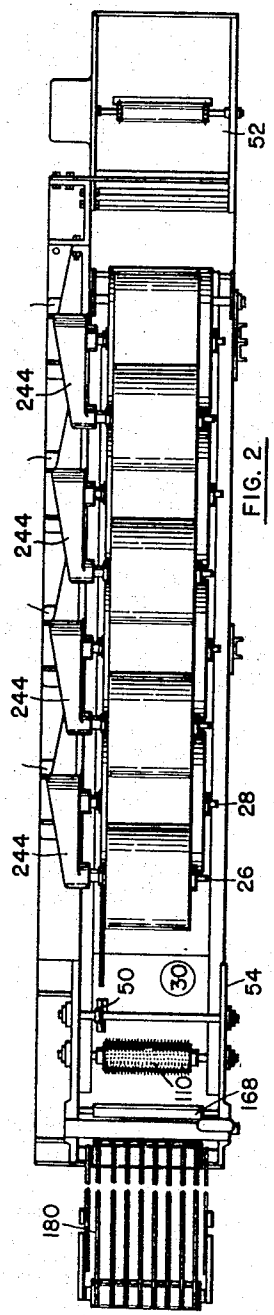


FIG. 2

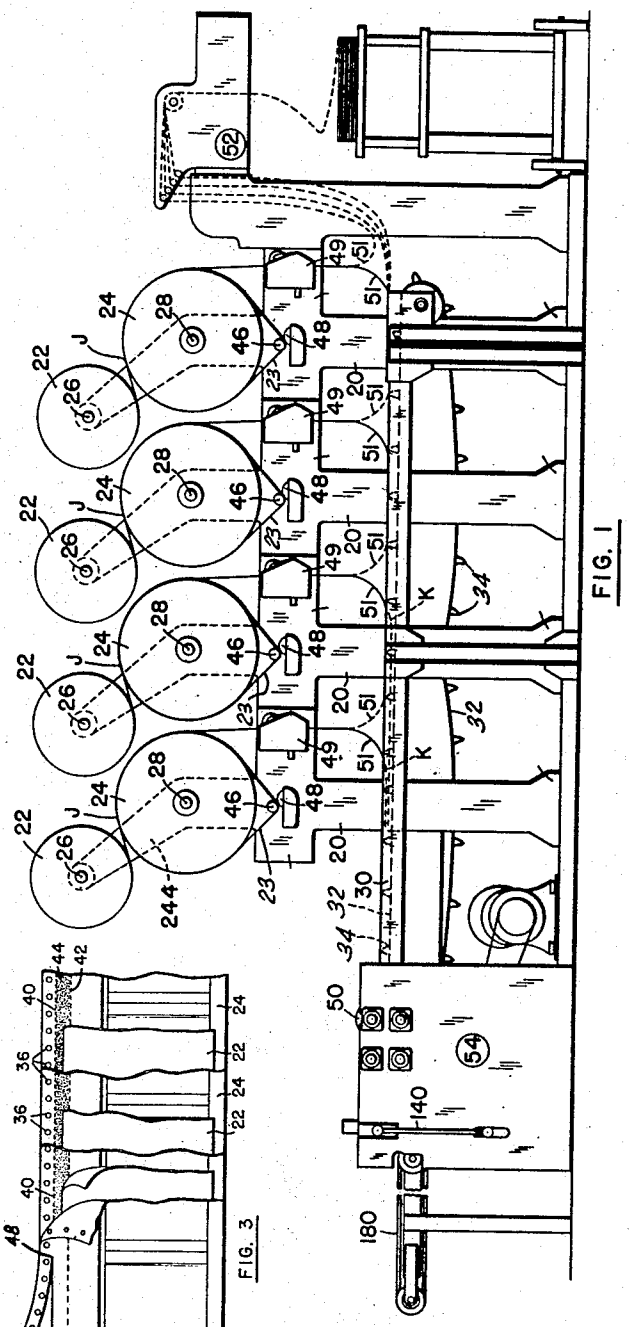


FIG. 1

FIG. 3

INVENTOR.
WILLIAM H. FRANZMANN

BY

ATTORNEY

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MACHINE FOR MAKING MANIFOLD FORMS

William H. Franzmann, Hamilton, Ohio, assignor to The Hamilton Tool Company, Hamilton, Ohio, a corporation of Ohio

Original application July 11, 1950, Serial No. 173,139, now Patent No. 2,766,984, dated October 16, 1956. Divided and this application February 20, 1956, Serial No. 566,672

6 Claims. (Cl. 270—52)

This application is a division of my co-pending application Serial No. 173,139, filed July 11, 1950, now Patent No. 2,766,984.

This invention relates to a machine for manifolding alternate strips of record and transfer material.

The primary object of the invention is to provide a machine for adhesively securing continuous lengths of record and transfer sheets together at a location above and prior to being deposited upon the feed table of my device and of then joining successive record sheets together on the feed table.

These and other objects are attained by the means described herein and as disclosed in the accompanying drawings, in which:

Fig. 1 is a side elevation of a device embodying the teachings of the present invention.

Fig. 2 is a top elevation of the device of Fig. 1.

Fig. 3 is a plan view illustrating a series of alternate record and transfer sheets in collated form, such as may be formed by the device of Figs. 1 and 2.

With particular reference now to Fig. 1, the numerals **20** denote generally a plurality of similar bracket members adjacent ones of which are securely though releasably interconnected for providing a device having the desired roll supporting capacity. In the preferred embodiment of the invention a roll of transfer material **22** and a roll of record material **24** are rotatably supported upon spindles **26** and **28**, respectively, which are secured to and carried by bracket **20**.

A feed table, or so-called strip support **30** is provided onto which strips of record material **24** may be suitably deposited for engagement with a suitable conveyor **32** provided with a plurality of laterally spaced projections **34** that are adapted to engage spaced openings **36** (Fig. 3) provided along an edge of the record strips **24**, thereby simultaneously maintaining each of said record strips in absolute registry and imparting a lineal motion for advancing them over said feed table, or support **30**.

In those instances in which it is desired to provide strips of transfer material **22** in interleaved relationship with various of the record strips, such transfer strips may be loosely associated with or between adjacent record strips, or it may be fastened to and along an edge of a corresponding record strip such as, by way of example, edge gluing. This process is extensively utilized when making so-called pull-apart forms in which strips of transfer material **22**, see Fig. 3, are glued to an edge or band **40** forming part of record strip **24** from which it is severable along a predetermined tear line **42**.

If desired, the strips of record material may be fed under spindle **46** for deflecting the outermost convolution **23** of the record strip from its respective roll **24** at a location in advance of the initial point of contact J of the transverse strip **22** with the record strip, whereby the inner edge of the outer face of said strips will be engaged by glue wheels **48** which apply a glue line **44**, Fig. 3, with which the inner edge of an associated transfer strip will adhere thereby securing the transfer strips to

bands **40**. Those portions of glue line **44** beyond the inner edge of the transfer strips will adhere to the rear face of a superposed record strip thereby providing a unitary group of alternate strips of record and transfer material.

In those instances wherein openings **36** are not desired in the finished product that portion of bands **40** in which the openings are located may be severed, as at **48** by means of slitter knives **50**, see Figs. 1 and 2.

In those instances wherein the device is used as a collator for making record forms which comprise record sheets interleaved with transfer sheets, as illustrated in the left side of Fig. 3, the delivery conveyor **180** may be continuously operated whereby to remove each set of forms as they are severed from the composite, multi-sheet web advanced across support **30**.

With particular reference now to Fig. 1, it will be observed that the roll supporting and feeding mechanism has been constructed and arranged in such a manner as to deposit interleaved webs upon strip support **30** for delivery to either end of the table, to a zig-zag folding device denoted generally by the numeral **52**, such as more fully disclosed in U. S. Patent No. 1,938,536, or to a combination collator and gathering device denoted generally by the numeral **54**, the latter including a rotatable brush **110**, a high speed roller **168**, and a cut-off knife (not illustrated) actuated by rod **140**, as more fully set forth in my Patent No. 2,766,984, thereby clearly distinguishing from prior art devices in which interleaved strips can be fed in but one direction of travel.

The strips of record material **24**, as hereinabove stated, are fed downwardly under spindle **46** whereby glue roller **48** will apply a continuous strip of adhesive to the inside edge, that is, that edge of the strip adjacent inclined arm **244** of bracket **20**. As the strip of record material reaches point J, it will be engaged by a strip of transfer material **22** which will be laid thereon in such a manner as to effect a joining of the sheet of transfer material to the sheet of record material, along one edge thereof, thereby securing the sheet of transfer material to its associated sheet of record material.

From the point indicated by the letter J to the point indicated by the letter K, the sheets of joined transfer and record material are fed downwardly, through a suitable feeding mechanism indicated generally by the numeral **49**, whereby the composite web indicated generally by the numeral **51** will be laid upon said table **30**, with the edge apertures **36** of the record sheet portion of composite web **51** engaging projections **34** of table conveyor **32**.

As illustrated in Fig. 3, the adhesive strip **44** is of a width whereby to extend beyond the upper edge of transfer strip **22** whereby the same adhesive strip will effectively secure the record sheet portion of the next lower composite web **51** at location K. In other words, each sheet of record material is secured to a sheet of transfer material at a location above and prior to being deposited on the feed table, and the successive strips of record material are then interconnected on the feed table. This manner of construction permits the rolls of record and transfer material to be mounted in an easily accessible, easily observable location above the feed table, as illustrated.

It should be understood that various changes and modifications may be made in the structural details of the device, within the scope of the appended claims, without departing from the spirit of the invention.

I claim:

1. A machine for manifolding alternate strips of record and transfer material, which comprises an elongated strip support, means for rotatably supporting rolls of continuous lengths of transfer material, means for rotatably supporting rolls of continuous lengths of record

material, means for feeding said strips of record material onto said strip support, means for applying adhesive to said record strips, said transfer strips engaging a portion of the outer periphery of corresponding rolls of record strips to which the transfer strips are adhesively connected thereby providing a composite web of record and transfer material, the said means for feeding said strips of record material also feeding said composite webs onto said strip support, means on said support for conveying said webs in superposed registry with said adhesive connecting the record strips of adjacent webs.

2. A machine for manifolding alternate strips of record and transfer material, which comprises an elongated strip support, means for rotatably supporting at a location remote from said strip support rolls of continuous lengths of transfer material, means for rotatably supporting at a location between said strip support and said transfer material roll supporting means rolls of continuous lengths of record material, means for applying adhesive to and along an edge of said record strips, said transfer strips engaging a portion of the outer periphery of corresponding rolls of record strips to which the transfer strips are adhesively connected thereby providing a composite web of record and transfer material, means for feeding said composite webs onto said strip support, and means on said support for conveying said webs in superposed registry and for utilizing a portion of the adhesive on said record strips for connecting the record strips of adjacent webs.

3. A machine for manifolding alternate strips of record and transfer material, which comprises an elongated strip support, means for rotatably supporting a roll of record material above the strip support, other means for rotatably supporting a roll of transfer material above the roll of record material to feed the transfer strip onto the outer convolution of the record strip, means for advancing the record strip onto the strip support, and means applying adhesive to an edge of the outer face of the outermost convolution of the record strip at a location in advance of the initial point of contact of the transfer strip with the record strip.

4. A machine for manifolding alternate strips of record and transfer material, which comprises an elongated strip support, means for rotatably supporting a roll of record material above the strip support, other means for rotatably supporting a roll of transfer material above the roll of record material to feed the transfer strip directly onto the outer convolution of the record strip, means for deflecting the outermost convolution of the record strip from its roll at a location in advance of the initial point of contact of the transfer strip with the record strip, means for applying adhesive to an edge of the outer face of the strip as it passes over said strip deflecting means, and means for advancing the composite web, comprising the transfer strip adhesively secured to the record strip, onto the strip support.

5. A machine for manifolding alternate strips of record and transfer material, which comprises an elongated strip support, means for rotatably supporting in laterally spaced relationship a plurality of rolls of record material above the strip support, other means for rotatably supporting a plurality of rolls of transfer material one each above a roll of record material to feed each transfer strip directly onto the outer convolution of a corresponding roll of record strips, means for applying adhesive to an edge of the outer face of the outermost convolution of each of the record strips at a location in advance of the initial point of contact of the transfer strips therewith, and means for advancing each pair of adhesively interconnected record and transfer strips onto the strip support.

6. A machine for manifolding alternate strips of record and transfer material, which comprises an elongated strip support, means for rotatably supporting rolls of continuous lengths of record material above said strip support, means for rotatably supporting above the rolls of record material rolls of continuous lengths of transfer material, means for applying adhesive to an edge of the outer faces of the outer convolutions of the rolls of record strips, said transfer strips engaging a portion of the outer adhesively treated convolutions of corresponding rolls of record strips to which the transfer strips are adhesively connected thereby providing a composite web of record and transfer material, and means for feeding said composite webs onto said strip support.

No references cited.