Feb. 20, 1962 J. W. KEHOE 3,022,094

DOUBLE STUB CARD SET

Filed March 19, 1959 3 Sheets-Sheet 1

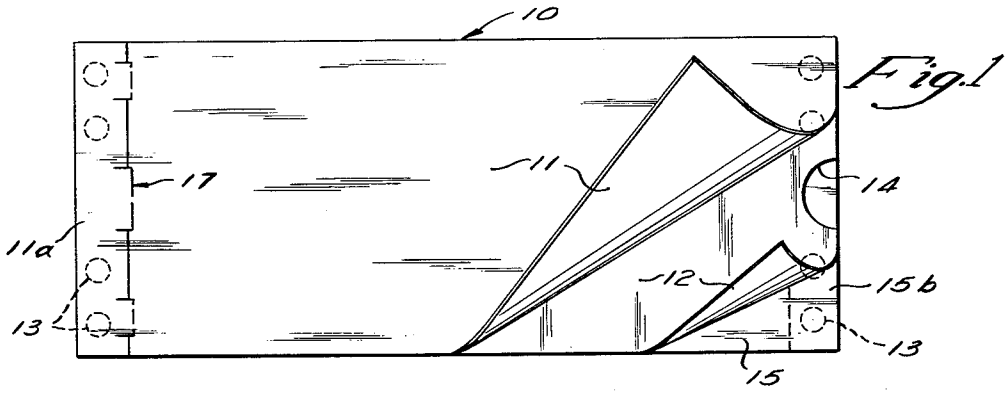


Fig. 1

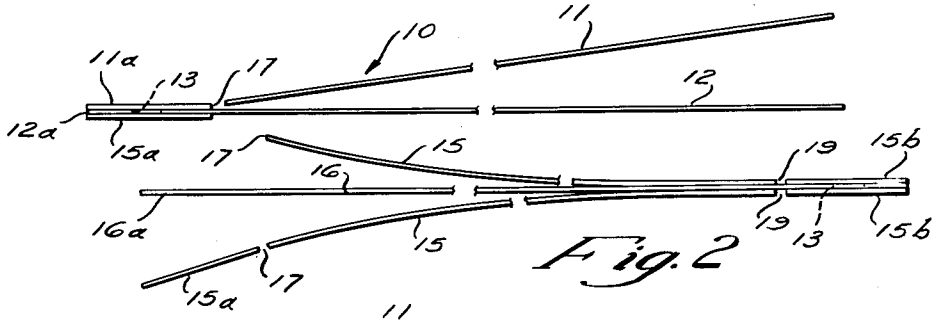


Fig. 2

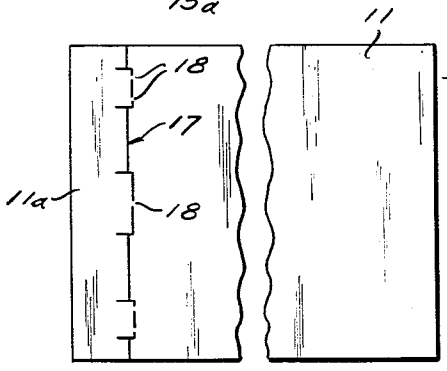


Fig. 3

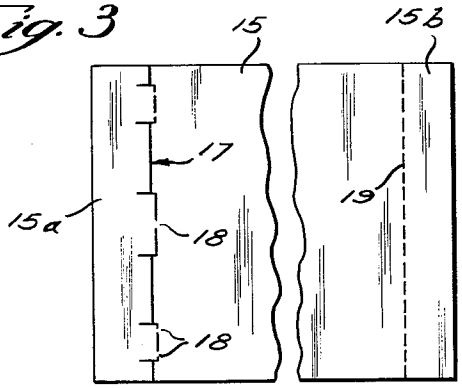


Fig. 5

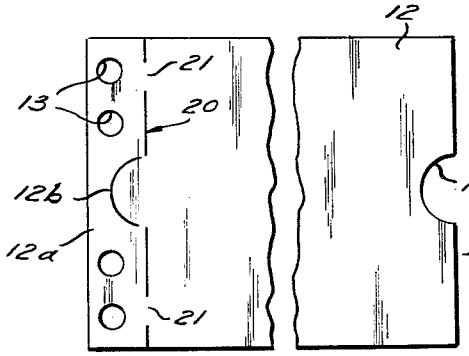


Fig. 4

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DOUBLE STUB CARD SET

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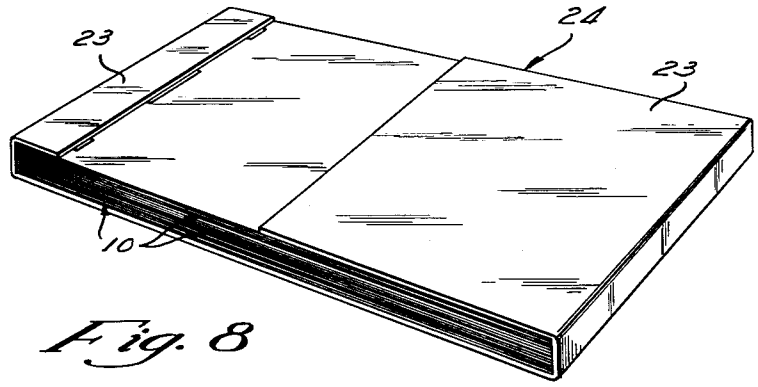


Fig. 8

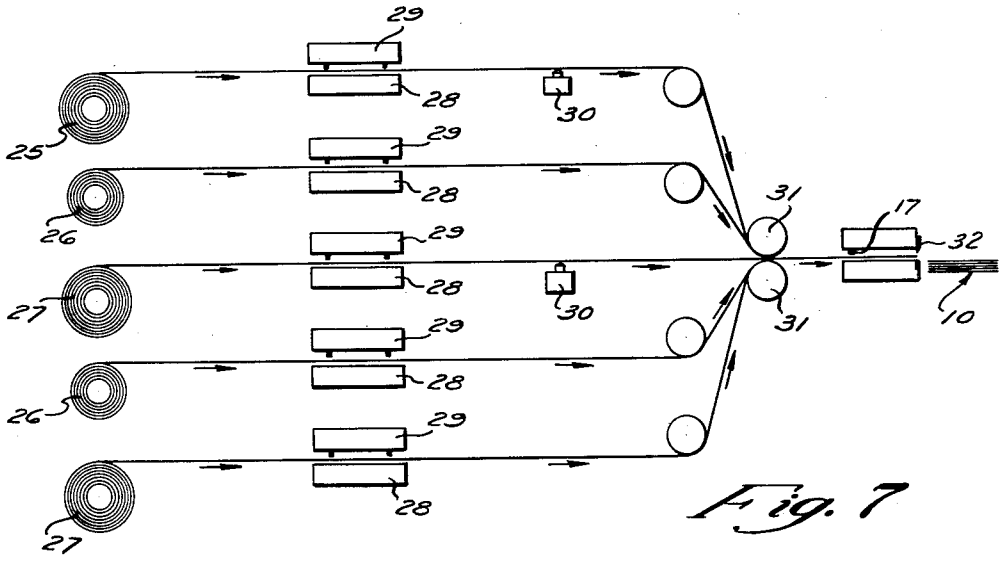


Fig. 7

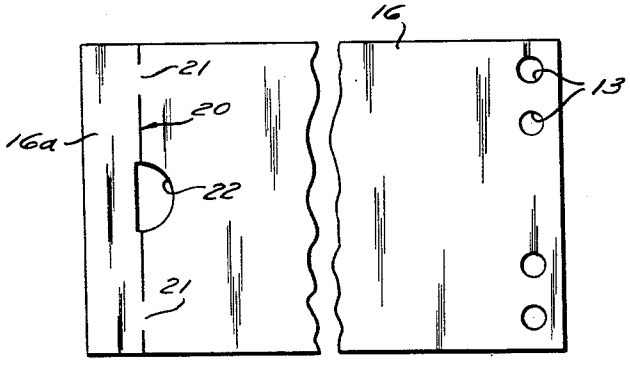


Fig. 6

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DOUBLE STUB CARD SET

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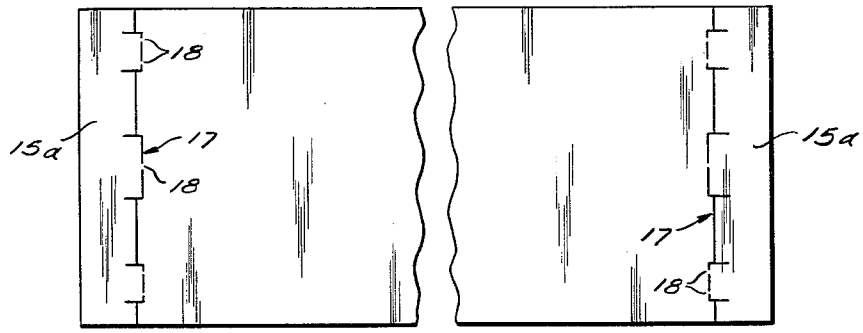


Fig. 9

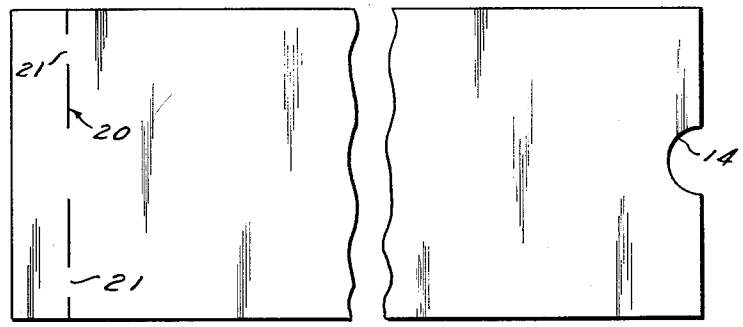


Fig. 10

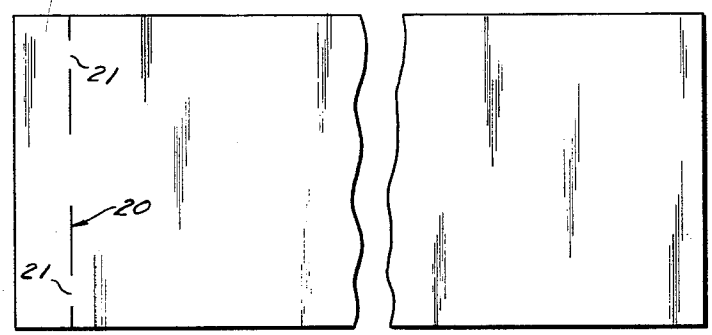


Fig. 11

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United States Patent Office 3,022,094 Patented Feb. 20, 1962

3,022,094

DOUBLE STUB CARD SET

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Filed Mar. 19, 1959, Ser. No. 800,453
4 Claims. (Cl. 282—22)

This invention relates to the art of manifold record devices and is particularly concerned with a new unit set, manifold record pad and the method of manufacture thereof.

The invention relates to improvements in manifolding units disclosed in my copending application Serial No. 635,848, filed January 23, 1957 entitled "Snap-Out Manifolding Unit."

It has been the practice to make manifold record sets comprising a thin cardboard sheet (for tabulating machine use), one or more copy sheets and a carbon sheet for each copy sheet. In some instances a carbon sheet has not been required, for example when National Cash Register paper (no carbon required) and similar acting papers are used or in cases where multiuse carbon is manually inserted. Various means have been proposed to facilitate the ready removal of the carbon sheets from the other sheets and pads have been provided with such means and are known as "snap-out" or "unit" sets.

Usually these means involve the use of carbon sheets shorter than the other sheets or a set of sheets with a mutilated free end so the carbon sheets could be detached and separated by grasping the ends of the pad with both hands and moving the hands apart.

There are certain disadvantages in such pads. The difference in length of the sheets or the mutilation of some of them impose restrictions on the method of manufacture of the pads. For example, when the carbon sheets are shorter than the other sheets, the sheets cannot be economically arranged in the pads with the grain of the paper running lengthwise of the sheet. This is a disadvantage because of the cost and also because the top or original sheet and/or copy sheets of the Hollerith card type cannot be used in such pads for their length and other physical characteristics must be held within close tolerances and such tolerances cannot be maintained when the grain of the paper runs across the sheet.

In the manufacture of paper for tabulating card stock, some of the fibers which were randomly orientated when the pulp was fed onto a dewatering screen are rearranged as the film is formed and passed through the rollers and the fibers eventually extend lengthwise of the finished paper sheet, that is, parallel the direction of travel of the sheet through the machine during its manufacture. These fibers and the arrangement thereof constitute "the grain of the sheet as referred herein."

The structure of my former invention did not provide for a stub at each end of the set. The present invention incorporates a design which provides the feature of being able to extract all or portions of the completed set from its pad or book stub and have all or portions of the leaves that are extracted to be held together at its stub located at the open end of the book or pad. An advantage of such an arrangement is to provide a second entry of information on two or more sheets of the business form and/or to provide two or more leaves that are attached together for convenience in handling. Two examples of these advantages are: (1) In an order-invoice-delivery form system in which the set (likely to be in book form) is written and all or a portion of it is extracted from the book, two copies (the delivery copy and the customer's copy) that are held together by the second stub are carried by the driver who has the receiver sign this portion

of the set. The driver will then grasp the stub end with one hand and at the carbon notch location with the thumb and forefinger of the other hand and by pulling apart will extract the carbon paper and stub from the two leaves. He will then give one leaf to the receiver and keep the other leaf as his record that the merchandise has been delivered. (2) In the case of a department store salesbook operation the complete set or a portion thereof, after being written, would be extracted from its book. All or a portion of the set that is extracted may be held together at its stub and be sent along with the merchandise to the shipping department. One leaf of the attached set can be used as the address label for the package and another can be used as a shipping department copy to prove the merchandise has been shipped. An advantage of having these two leaves attached together is for the convenience of the shipping department and to prevent the loss or confusion of the slips with other shipments. Both of these examples, and many more, illustrate a type of business form that is now commonly used. The present invention incorporates a double stub with unique carbon extraction features working in conjunction with unique stub perforation features which facilitate the use of these commonly known methods with a business form that has one or more of its leaves coupled with a tabulating card.

This invention will be better understood by those skilled in the art from the following specification and the accompanying drawings in which:

FIG. 1 is a plan view of a unit set or snap-out manifold embodying the present invention. The figure further illustrates, in the interest of clarity, a corner of the top cardboard, tabulating card sheet, and the first carbon sheet rolled upwardly and the appearance of the underlying copy sheet.

FIG. 2 is a composite side elevational view showing the sequential steps employed in the removal of the top sheet and the carbon sheets from the copy sheets.

FIG. 3 is a detail plan view illustrating the scoring on the top sheet, in this example a tabulating card.

FIG. 4 is a plan view illustrating the scoring on the first carbon sheet.

FIG. 5 is a plan view illustrating the scoring on the first and second copy sheets.

FIG. 6 is a plan view illustrating the scoring on the second carbon sheet.

FIG. 7 is a diagramamtic view of the operative parts of the scoring and piercing mechanisms and illustrating the manner in which the various sheets are assembled.

FIG. 8 is a perspective view showing the sets assembled in book form.

FIG. 9 is a plan view of a modified form illustrating the special scoring required when a tabulating card has a double stub.

FIG. 10 is a plan view of a modified form illustrating the construction of a copy leaf that would stay in the book when other parts of the set are torn from the book.

FIG. 11 is a plan view illustrating construction of original or top leaf that would stay in the book when other parts of the set are torn from the book.

Referring first to FIGS. 1 and 2, the unit set or pad **10** comprises an original tabulating card **11** scored to provide a stub **11***a* on one end thereof. The first carbon sheet **12** is illustrated in FIG. 4, the sheet being scored adjacent one end thereof to provide a stub **12***a* which is pierced with a plurality of openings **13** for flow of glue therethrough and tongue **12***b* to provide an extension for gripping. The opposite end of the sheet **12** is provided with an arcuate notch **14** for thumb clearance when the carbon sheet is removed. FIG. 5 illustrates the first and second copy sheets **15**, and the scoring therefor that defines

the stubs **15***a* and **15***b*. FIG. 6 illustrates the plan view of the second carbon sheet **16** and the piercing and scoring that defines the stub **16***a*. FIG. 9 illustrates the tabulating card when the card has a double stub. This construction also dictates that all leaves of the set have cuts **17** at both ends and leaves that are not tabulating cards may or may not, as requirements would dictate, have remote cuts **18**.

Referring to FIG. 2, the pad **10** is formed by applying glue to the stub **11***a* adjacent the clearance holes **13** and pressing or bonding the stub ends **11***a* and **15** *a* together, the stub **12***a* for the carbon sheet **12** being held between the stubs for the sheets **11** and **15**. The opposite end of the pad is similarly bonded by glue applied to the stubs **15***b* adjacent the holes **13** of the carbon sheet **16**. The scoring **17** shown in the left hand side of the sheets **11** and **15** is identical and comprises aligned spaced kerfs with short transverse intersecting kerfs to provide fragile strands **18** in order to facilitate ready removal of the sheets from their respective stubs. The copy sheet **15** is scored with aligned kerfs **19** which may likewise be readily severed from its stub. The scoring **20** is produced with a similar cutting tool as the scoring for **17** and this occurs at **32**, FIG. 7, simultaneously with cutoff on the carbon sheets **12** and **16** which comprises spaced aligned kerfs that define integral sections **21** of sufficient length to restrain ready removal. The sheet **16** is further provided with a central semicircular opening **22** intermediate the ends of the scoring.

It will be understood from the foregoing disclosure that each double stub unit set or pad consists of at least an original sheet, two copy sheets and two carbon sheets with book stubs at one end and unit set stubs at the other end and that the book stubs of a plurality of such unit sets or pads are connected together, by any suitable means, to form a book. One pad may be used for one sales transaction and may then be removed from the book as a unit and then separated into several parts as desired.

More specifically the manner of using the disclosed book is substantially as follows:

Entries are written on the original sheet of the top unit set and are reproduced on the copy sheets. Then the book stub is grasped in one hand, the body of the unit set or pad is grasped in the other hand and the hands are moved apart, thereby parting all sheets of the unit set from the book stub. Then the unit set is separated into certain parts by grasping in one hand the ends of the sheets which were attached to the book stub and in the other hand the unit set stub and moving the hands apart. This results in detaching the original sheet and the first carbon sheet from the unit set stub and leaving both copy sheets and the second carbon sheet connected together in the unit set stub.

Other entries may then be made on the first copy sheet and reproduced on the second copy sheet if desired. Finally, the unit set or pad stud may be detached from the copy sheets and the second carbon sheet.

If desired, the pads **10** may be assembled with a cover **23** thereon which is secured to the top of the left hand stub (FIG. 8) and folded over the opposed end of the pad and down against a portion of the top surface thereof to form a book **24**.

The present method of the invention and manner of carrying it out in the production of unit sets as described above, is illustrated diagrammatically in FIG. 7, wherein:

Rolls **25** of the top tabulating card paper, carbon sheet paper **26** and copy sheet paper **27** are disposed preferably in vertical arrangement, as shown, although other arrangements may be used provided that the coils are so disposed that the paper therefrom may be superimposed to form the multiple pad or unit set of FIGS. 1 and 2.

The paper is drawn off the five rolls continuously, simultaneously and necessarily lengthwise of the grain of the paper. These sheets are fed through suitable cutters and gluing mechanism, and then are brought into superposed relation where the gluing step is completed and the superimposed strips or sheets are cut into unit sets of the desired length. A slitter unit, not shown, may be provided to divide the paper longitudinally into a plurality of unit sets of the desired width.

In carrying out these steps, the roll of paper from the top tabulating card, the carbon paper therefor, and the copy sheet are passed through dies **28** and knives **29** for their respective scoring and piercing operations as described above. These cutters may be of any conventional form but, as illustrated, comprise a fixed die **28** and a knife **29** provided with edges to effect the piercing operation of the kerfs. Then glue, or other suitable adhesive, is applied to the copy strip at **30** and the strips then pass between rollers **31** to effect the bonded retention thereof.

After the superposed sheets are pressed together, they are partially severed by die knife **17** and completely severed by a suitable knife **32** which cuts the end of the unit set simultaneously.

An important advantage of this method of manufacture is that the sheets may be run from the rolls in the direction of the grain fo the paper and hence the sheets of the unit set or pad of these sheets on machines where Hollerith type cards are required. Another advantage is that by avoiding mutilation of the ends of the sheets of the pad and making all the sheets of the same length, the rate of manufacture may be quite rapid as compared with con ventional methods where some sheets are mutilated at the ends or are shorter than other sheets.

What is claimed is:

1. A book comprising a plurality of manifold record pads, each pad comprising at least an original sheet, a first carbon sheet thereunder, a first copy sheet below the first carbon sheet, a second carbon sheet below said first copy sheet and a second copy sheet below the second carbon sheet, the original, carbon and copy sheets being arranged with the grain of the paper running lengthwise thereof and being of the same length and width, the said original, carbon and copy sheets being connected at one end to the other pads constituting the book, the original, carbon and copy sheets of each pad having kerfs partly separating them into book stubs and pad stubs near the ends thereof, the first carbon sheet being glued to the original and first copy sheets in the book stub, the first and second copy sheets and the second carbon sheet being glued together in the pad stub, the first carbon sheet having a tongue adjacent to the book stub and a notch in its pad stub, the second carbon sheet having a notch adjacent to the book stub, said pad being removable from the book as a unit by completing the separation at the book stub kerfs and said pad being separable into separate original and first carbon sheets and connected first and second copy sheets and the second carbon sheet.

2. A book comprising a plurality of manifold record pads, each pad comprising at least an original sheet, two carbon sheets, and two copy sheets, the original and the copy sheets being arranged with the grain of the paper running lengthwise thereof and being of the same length and width, the original, copy and carbon sheets being connected at one end to the other pads constituting the book, certain of the sheets of each pad having spaced, aligned and intersecting kerfs partly separating them into book stubs and pad stubs at the ends thereof, at least one of said sheets being free from said transverse kerfs at its book stub and having a notch at the opposite end, one carbon sheet being glued to the original and first copy sheets in one of the stubs, said certain sheets being removable from the book as a unit by completing the separation at the book stub kerfs.

3. A manifold record pad comprising at least an original sheet, a first carbon sheet thereunder, a first copy sheet below the first carbon sheet, a second carbon sheet below said first copy sheet, and a second copy sheet below the said second carbon sheet, said sheets being arranged with the grain of the paper running lengthwise thereof being

of the same length and width and having kerfs partly separating them into book stubs and pad stubs near the ends thereof, the first carbon sheet being glued to the original and first copy sheets in the book stub, the first and second copy sheets and the second carbon sheet being glued together in the pad stub, the first carbon sheet having a tongue adjacent to the book stub and a notch in its pad stub, the second carbon sheet having a notch adjacent to the book stub, said pad being separable into separate original and first carbon sheets and connected first and second copy sheets and the second carbon sheet by completing the separation at the book stub kerfs.

4. A manifold pad comprising at least an original sheet, a carbon sheet and a copy sheet, said sheets being arranged with the grain of the paper running lengthwise thereof and all being of the same length and width, all said sheets being glued together at one end to form a

stub and having kerfs partly separating the sheets from said stub, the original and copy sheets being glued together at the other end thereof to form a second stub and having kerfs partly separating said sheets from that stub, the carbon sheet having a tongue in the stub at said one end and a notch adjacent to the second stub.

References Cited in the file of this patent

UNITED STATES PATENTS

1,509,662	Barnett	Sept. 23, 1924
1,730,354	Bottle	Oct. 8, 1929
1,954,339	Wilcox	Apr. 10, 1934
2,100,814	Morrison	Nov. 30, 1937
2,163,714	Stevens	June 27, 1939
2,506,015	Doepke	May 2, 1950
2,536,371	Hutchinson	Jan. 2, 1951