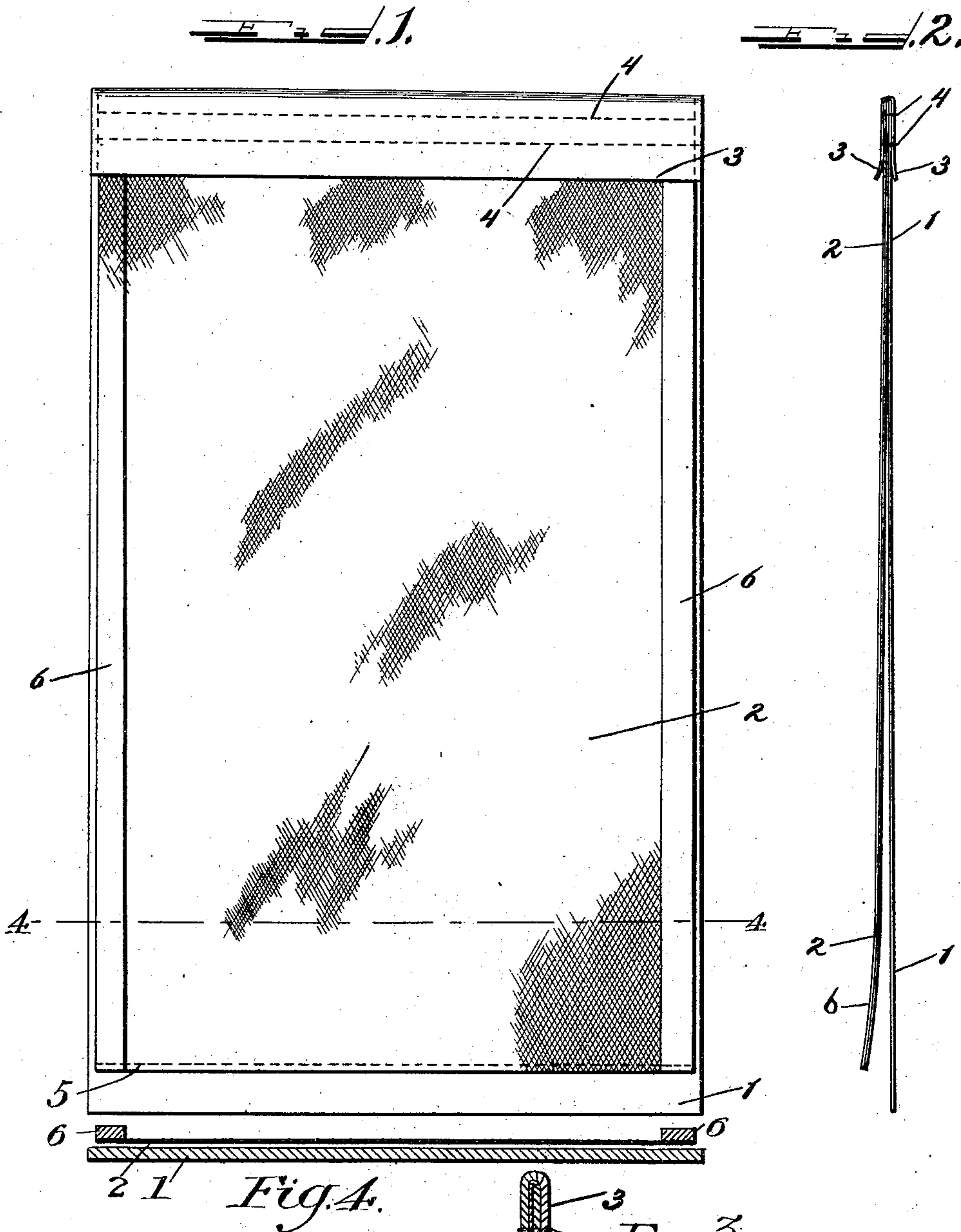


No. 756,258.

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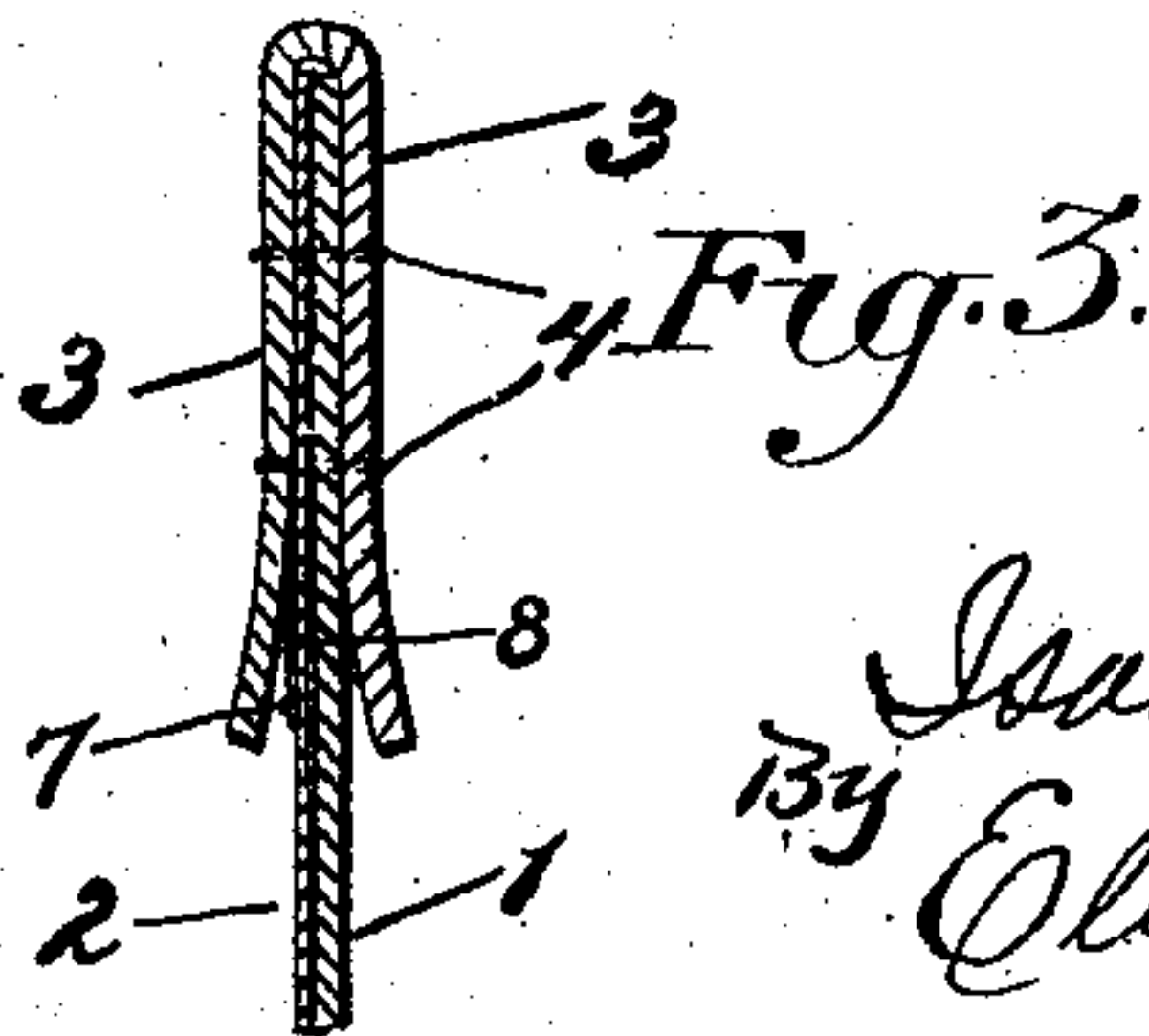
I. H. MALLIN.
MANIFOLDING DEVICE.
APPLICATION FILED JUNE 13, 1901.

NO MODEL.



WITNESSES

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UNITED STATES PATENT OFFICE.

ISAAC H. MALLIN, OF CHICAGO, ILLINOIS.

MANIFOLDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 756,258, dated April 5, 1904.

Application filed June 13, 1901. Serial No. 64,380. (No model.)

To all whom it may concern:

Be it known that I, ISAAC H. MALLIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Manifold Devices, of which the following is a full, clear, and exact specification.

This invention relates to improvements in manifold devices designed for simultaneously
10 producing in duplicate or multiple ink-sheets—that is to say, inked copies—said device embracing one or more ink-sheets substantially corresponding in dimensions to the type-written sheets to be produced, the said
15 ink-sheet having a type-protecting or backing sheet of corresponding size preferably interposed between the platen of a type-writing machine and the paper to be written upon.

Prior to my invention ink-sheets with back-
20 ing-sheets, such as is described, have been detachably connected together in such a manner that the permanency of their relations is not and cannot be maintained at all times, and as a result the sheets of paper upon which
25 the duplicate and multiple ribbon-inked copies are to be simultaneously made cannot be with certainty maintained in that relation to each other or to the type-writer mechanism to produce parallel lines of type-writing which
30 are also parallel with the ends of the sheets or which would insure the ends of the lines terminating at the same point relative to the side edges of the sheets on the several duplicate ribbon-inked copies. In other words,
35 in order to successfully produce duplicate and multiple ribbon-inked type-written sheets at one operation of the type-writer it is absolutely necessary that the several letter-heads upon which these several ribbon-
40 inked copies are to be simultaneously produced, and also carbon copies, if any are to be produced at the same time, shall not only be arranged but maintained throughout the type-writing operation with almost mathematical exactness both with reference to each
45 other and the ink-sheet and also the carbon-sheets when one or more are used. This mathematical exactness must be maintained from the time the sheets are inserted in the type-writer
50 until discharged therefrom after being type-

written, for otherwise the writing upon the different sheets will not correspond in the direction of the lines with reference to the top and bottom edges of the sheet, nor as to the termination of the lines with reference to the
55 side edges of the sheet, and hence one or more of the sheets will be unsightly even though the ink-sheet be maintained throughout the type-writing operation in a perfectly smooth condition.

To the unsightliness resulting from the absence of parallelism between the lines of type-writing and the top and bottom edges of the sheet and right angularity of the type-written lines of the side edges of the sheet will
65 also be added actual disfiguration and possibly partial obliteration of the type-writing if at any time during the type-writing operation either the ink-sheet or the other sheets are drawn taut at one portion and slack at another.
70 It may also be observed that the largest surface of the ink-sheet will also be unused, and the corresponding lack of economy, convenience, and saving of time will occur, owing to the uniform spacing of a type-writing machine. Some means should therefore be provided for shifting the paper sheet relative to
75 the ink-sheet, or vice versa, so as to successively present the previously-unused surface of the ink-sheet to the type when other portions are worn out by the action of type; but it is obvious that this very desirable result cannot be successfully accomplished without means by which the ink-sheet and the paper
80 sheet are maintained in perfect register when so shifted. In this connection it should also be observed that any shifting of the ink-sheet or the other sheets for the purpose of exposing a new inking-surface is not practicable when it requires any manipulation of the ink-
90 sheet, its protecting sheet, or a manipulation of the sheets to be written upon differently from that commonly employed for arranging them upon an ink-sheet.

The prime object of my invention is a manifold device for simultaneously producing from
95 an ink sheet and sheets duplicate or manifold type-written sheets, which device shall be of simplest possible construction and which provides not only for arranging all of the
100

5 sheets to be written upon in registry of each other and with the ink-sheet, but which shall at the same time permanently maintain said sheets to be written upon and ink-sheet in registry with each other and with the type-writing machine and in such a manner that all of said sheets may be conveniently inserted in a type-writing machine and permanently maintained in registry throughout the entire travel of all of said sheets through the machine.

10 A further object is to provide a manifold device of a construction providing the simplest possible means for utilizing previously-unused portions of the ink-sheet after other portions have been used up and at the same time maintain said ink-sheet in registry with the several sheets to be written upon.

20 A still further object is to provide a manifold device having an ink-sheet with a protecting sheet or backing, which said sheets are secured together in such a manner that both ink-sheet and the backing-sheet shall be maintained in a perfectly smooth condition throughout their surfaces, and this particularly as to the ink-sheet during the entire travel of the ink-sheet through a type-writing machine.

25 With these ends in view my invention consists in certain features of novelty and construction, combination, and arrangement of parts by which the said objects and certain other objects hereinafter appearing are attained, all as fully described with reference to the accompanying drawings and more particularly pointed out in the claims.

35 In the said drawings, Figure 1 represents a plan view of a manifold device embodying my invention and showing the ink-sheet imposed upon the backing-sheet. Fig. 2 is a longitudinal side elevation of the same; Fig. 3, a detailed section through the binder thereof, and Fig. 4 a transverse section on the line 4-4 of Fig. 1.

45 Similar numerals of reference indicate the same parts throughout the several figures of the drawings.

1 indicates a backing-sheet upon which is placed and secured an ink-sheet 2, both faces of which are preferably inked, which ink-sheet may be of the same length as the backing-sheet, but is preferably somewhat shorter and narrower for convenience in handling and to avoid soiling the hands. The ink-sheet is preferably substantially of the same length as the sheet or sheets of paper to be used in connection therewith and of a width corresponding with the distance between the outer ends of the feed-rollers of the machine, so that it will be grasped by both rollers in passing through the type-writing machine. The ink-sheet and the backing-sheet are preferably secured together by a binding-strip 3, folded upon itself and around the ends of the backing-sheet and the ink-sheet, so as to overlie both sides of a substantial portion of the sur-

face of both sheets, the said binding-strip being secured in this position by stitching 4, which for the purposes of my invention is in two or more parallel rows, and for the purposes hereinafter described this stitching is preferably single-thread stitching, so that it may be removed. In this connection it is proper to note that the binding-strip between the last row of stitching and its ends is preferably pasted or cemented to both the ink-sheet and the backing-sheet instead of turned up therefrom, as illustrated in Fig. 3.

80 In order to maintain the ink-sheet in a smooth condition and at the same time provide for inserting a duplicate sheet upon its under side to be printed upon, said ink-sheet is also stitched near its end edge to the backing-sheet, as shown at 5, at the end opposite therefrom from the binding thereof to the backing-sheet. To further promote the smoothness of the ink-sheet throughout its surface, it is provided longitudinally along both of its side edges and at the point at which the ink-sheet would otherwise contact with the feed-rollers of a type-writing machine with narrow strips of paper or cloth 6 6 or other suitable material, which extend from the binding-strip to the farthest end edge of the ink-sheet; but it will be no substantial departure from my invention in its broad sense to omit both strip 6 and the stitching 5.

100 In producing duplicate type-written inked sheets from a double-faced ink-sheet, one of the paper sheets to be type-written in ink is slipped between the ink-sheet 2 and the backing-sheet 1, and the other paper sheet to be written upon is placed on top of the ink-sheet, with the upper end edge of the sheet abutting against the adjacent row of stitching for the binding-sheet 3 and the under sheet being placed in a corresponding position, so that both sheets are made to perfectly register when placed in the type-writing machine and throughout the operation thereof.

110 If desired, the binding-strip may be slightly bent outwardly from the ink-sheet and the backing-sheet, as shown in Fig. 3, and in such a manner that the one sheet projected between the upper surface and the ink-sheet will be wedged and locked between the binding-strip and the ink-sheet. On the other hand, the two sheets to be written upon may be made to register with each other by abutting the upper sheet against the edge of the binding-strip and the lower edge of the under sheet against the stitching at the opposite end of the ink-sheet. With the sheets thus maintained in register and in their proper relation both to the ink-sheet and to each other and inserted in a type-writing machine the strip 6 will pass between and be held by the feed-rollers of the machine, and as a result the ink-sheet will be held by these strips against sagging, while at the same time the sheets to be written upon will be held in such a manner

that the ink-sheet will be held in a smoothed condition throughout its surface during the entire operation of the type-writer. In devices of this character it is obvious if the sheets are always maintained in a fixed relation to the ink-sheet opposing portions of the ink-sheet at intervals thereof will in time be used up, while other portions will remain unused; but as a convenient means for avoiding this objection and by which the ink-sheet may be entirely used up my invention includes two or more parallel rows of stitching, which serve not only to secure the backing-sheet and the ink-sheet together, but which provide a simple and effective means by which after portions of the ink-sheet are used up other and unused portions may be utilized until the ink-sheet is worn out, while in the meantime the binding-stitch serves as abutments for registering the sheets. To these ends when opposing portions of the ink-sheet are worn out a fresh portion may be used by drawing out one line of the stitching—as, for instance, the lower line 4 in Fig. 1—and then registering the sheets, to be printed on, against the next line 4, which shifting of the sheets from their first position enables the using up of unworn portions of the ink-sheet and at the same time provides for maintaining the proper registry of the type-written portions relative to the sheet—that is to say, to the letter-head of the sheet. Obviously if such shifting were not made the writing from the final unused portions of the ink-sheet would have to be an objectionable distance below the letter or bill head, as may be, whereas by drawing out one line of the stitching the letter-head is lifted relative to the unused portions of the ink-sheet, so that the inking from the unused portions thereof may be started at the same point relative to the letter-head or bill-head as was done when the ink was first used. The advantage of my invention in this respect may be apparent by bearing in mind that it requires no skill and practically no time when certain opposing portions of the ink-sheet is worn out to withdraw one of the lines of stitching and shift the letter-heads accordingly for receiving for the operation of the unused portions of the ink-sheet. After this convenient withdrawal of one row of stitching the next row of stitching provides a registering-gage for the sheets, so that throughout the operation of using up the ink-sheet in its entirety a perfect registration of the sheets with each other and the printed matter relative to the letter-heads and bill-heads is preserved, and in this connection it should be observed that in my construction this can be done without contacting the hands with the ink-sheet, and thereby soiling them.

The binding-strip is preferably of a thickness corresponding with that of the sheets to be written upon, so that when the sheets are in place the binding-strip will pass smoothly

through the feed-rollers, and substantially this feature of thickness should be observed in order to obtain the best result in use of the guide-strips 6 6.

While there are shown in the drawings but two rows of stitching, it is obvious that further rows may be employed, if desirable or necessary, for entirely using up the inking-surface of the ink-sheet, and it is equally obvious that any other means providing for this result which is the equivalent of stitching in the function it performs will be within my invention.

It would be no substantial departure from my invention to omit the binding-strip and have the backing-sheet of such a length that it might be folded over upon the ink-sheet and then securing the two sheets together by parallel lines of stitching passing through the three thicknesses thus formed. It is, however, preferred to use the binding-strip, and especially when it is desirable to also produce carbon copies, because the under transverse edge of the binding-strip affords a means for registering the under sheets owing to the binding-strip forming an abutment against which the top edges of these sheets may be set, and as it is generally customary to use one or more carbon-sheets in connection with the duplicate ink-sheets, the under side of the binding-strip facilitates the introduction of the several sheets into the type-writing machine, while at the same time the carbon-sheets in conforming to the thickness of such edge produce a surface of uniform thickness throughout the manifold device itself.

The combined thickness of the ink-sheet, the backing-sheet, the binding-strip, and the sheets to be written upon subject the ink-sheet to such a severe pressure when the bound end of the manifolding device is forced in between the feed-roll and the platen-roll or between the platen-roll and any other guiding means that the sheet or sheets to be written upon which lie contiguous to the ink-sheet are liable to be discolored, and in order to prevent this a plain uninked strip 7 is secured along the upper edge of the ink-sheet where the latter is embraced or overlapped by the binding-strip 3, and, if desired, a similar strip 8 may be secured to the opposite side of the ink-sheet for preventing the latter from soiling the carbon-copy at the point where this excessive pressure occurs.

Instead of having a single ink-sheet double-faced—that is to say, inked on both sides—it would be no departure from my invention to use instead thereof two or more ink-sheets each having a single face—that is to say, inked upon but one side; but in practice it is preferred to use the double-faced ink-sheet.

Having described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. A manifolding device comprising in com-

bination an ink-sheet and a backing-sheet secured together at one end by parallel lines of stitching transversely through both of said sheets, substantially as described.

5 2. A manifolding device comprising in combination a backing-sheet, a double-faced ink-sheet, a binding-strip, said backing-sheet, ink-sheet and binding-strip being secured together by two or more transverse rows of stitching,
10 substantially as described.

3. A manifolding device comprising in combination a backing-sheet, a double-faced ink-sheet, longitudinal guide-strips secured against the edges of said ink-sheet, said sheets
15 being secured together by two or more parallel rows of removable stitching at one end thereof, substantially as described.

4. A manifolding device comprising in combination a backing-sheet, a double-faced ink-sheet of substantially the same area, longitudinal guide-strips mounted upon said ink-sheet next the edges thereof, said backing-sheet and ink-sheet being secured together by parallel rows of stitching at one end and a single row of stitching at the opposite end thereof,
25 of, substantially as described.

5. A manifolding device comprising in combination a backing-sheet, a double-faced ink-sheet of substantially the same area, a binding-strip embracing one end and overlapping
30

the surface of both of said sheets, longitudinal guide-strips secured next the edges of said ink-sheet, said ink-sheet and backing-sheet being secured together at one end by parallel lines of stitching passing through the binding-strip 35 and at their opposite end by a single line of stitching passing through the ink-sheet and backing-sheet, substantially as described.

6. A manifolding device comprising in combination a double-faced ink-sheet, a backing-sheet of substantially the same area as said ink-sheet, a binding-strip and stitching securing said strip and sheets together, and an uninked strip extending across said ink-sheet at a point between the ink-sheet and the binding-strip, substantially as described. 45

7. A manifolding device comprising in combination a backing-sheet, a double-faced ink-sheet of substantially the same area, a binding-strip embracing the end and overlapping the 50 surface of both of said sheets, one or more lines of said stitching joining said strip and sheets together and a plain uninked strip secured to said ink-sheet on each side thereof next the binding-strip, substantially as described. 55

ISAAC H. MALLIN.

Witnesses:

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