

No. 721,097.

PATENTED FEB. 17, 1903.

T. C. SHEEHAN.
MANIFOLDING REGISTER.
APPLICATION FILED SEPT. 15, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

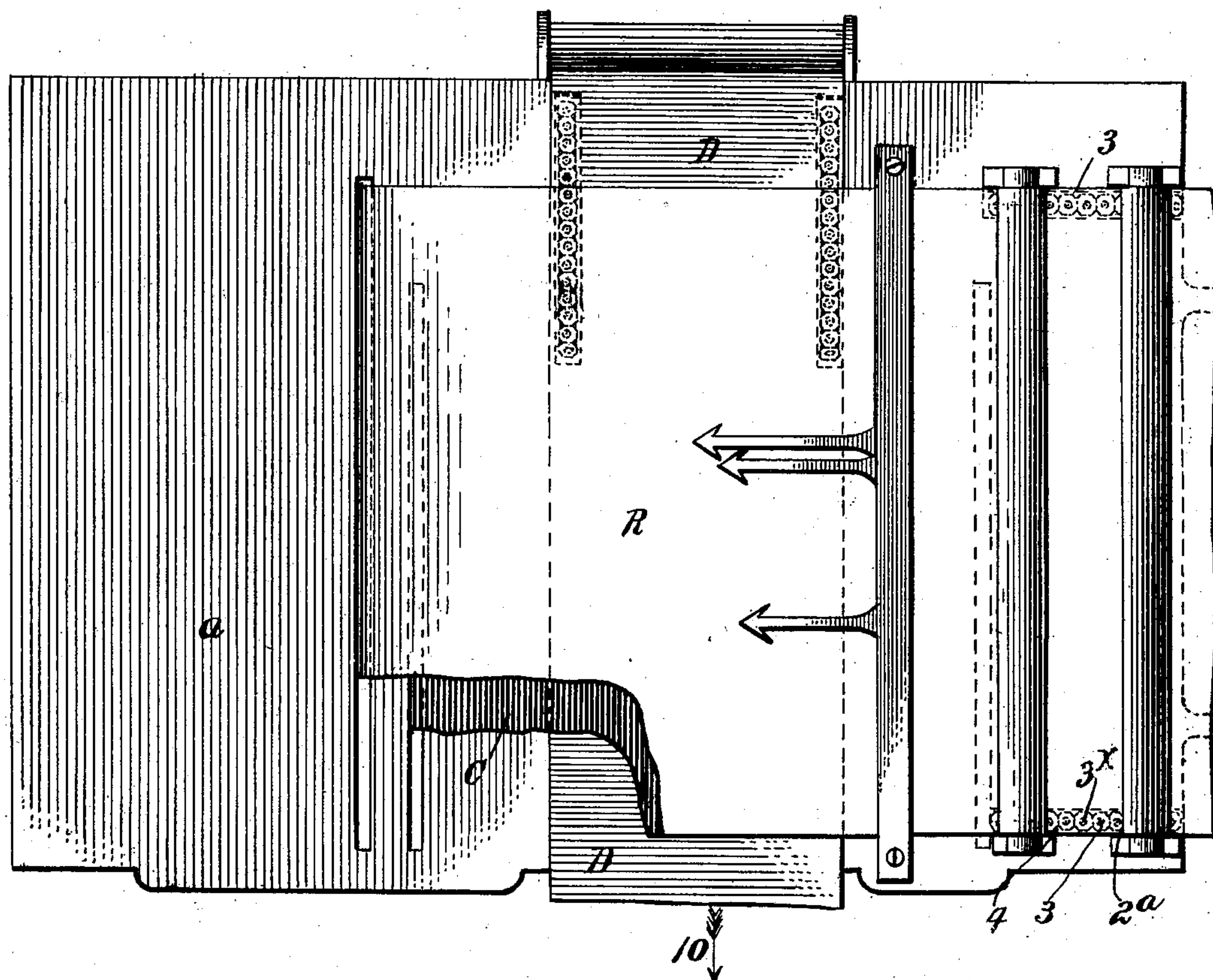
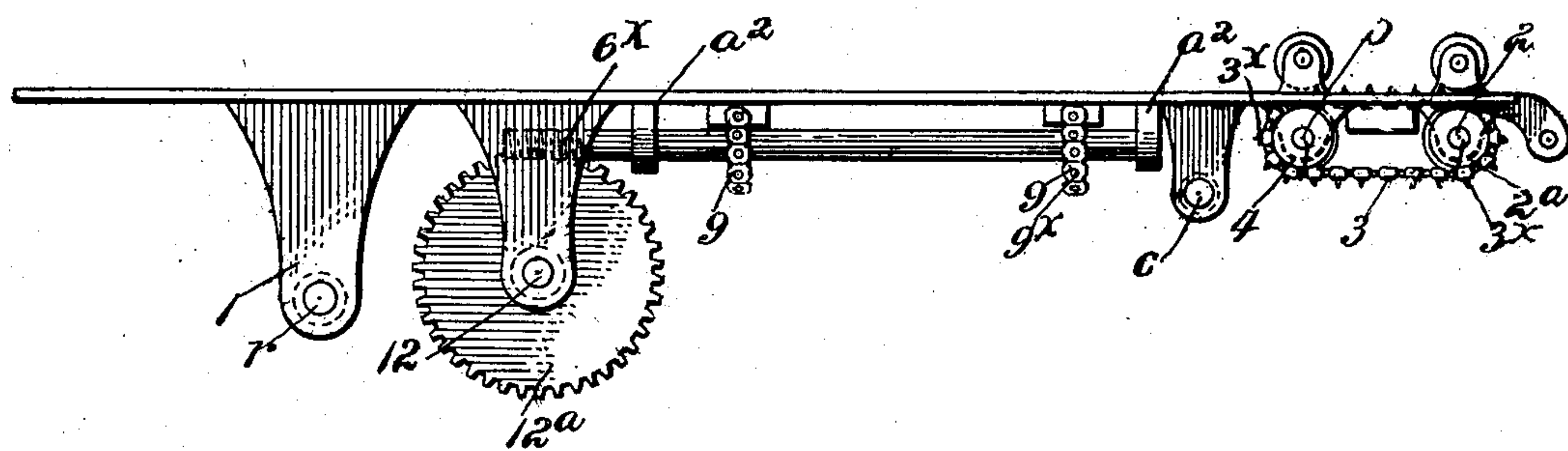


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

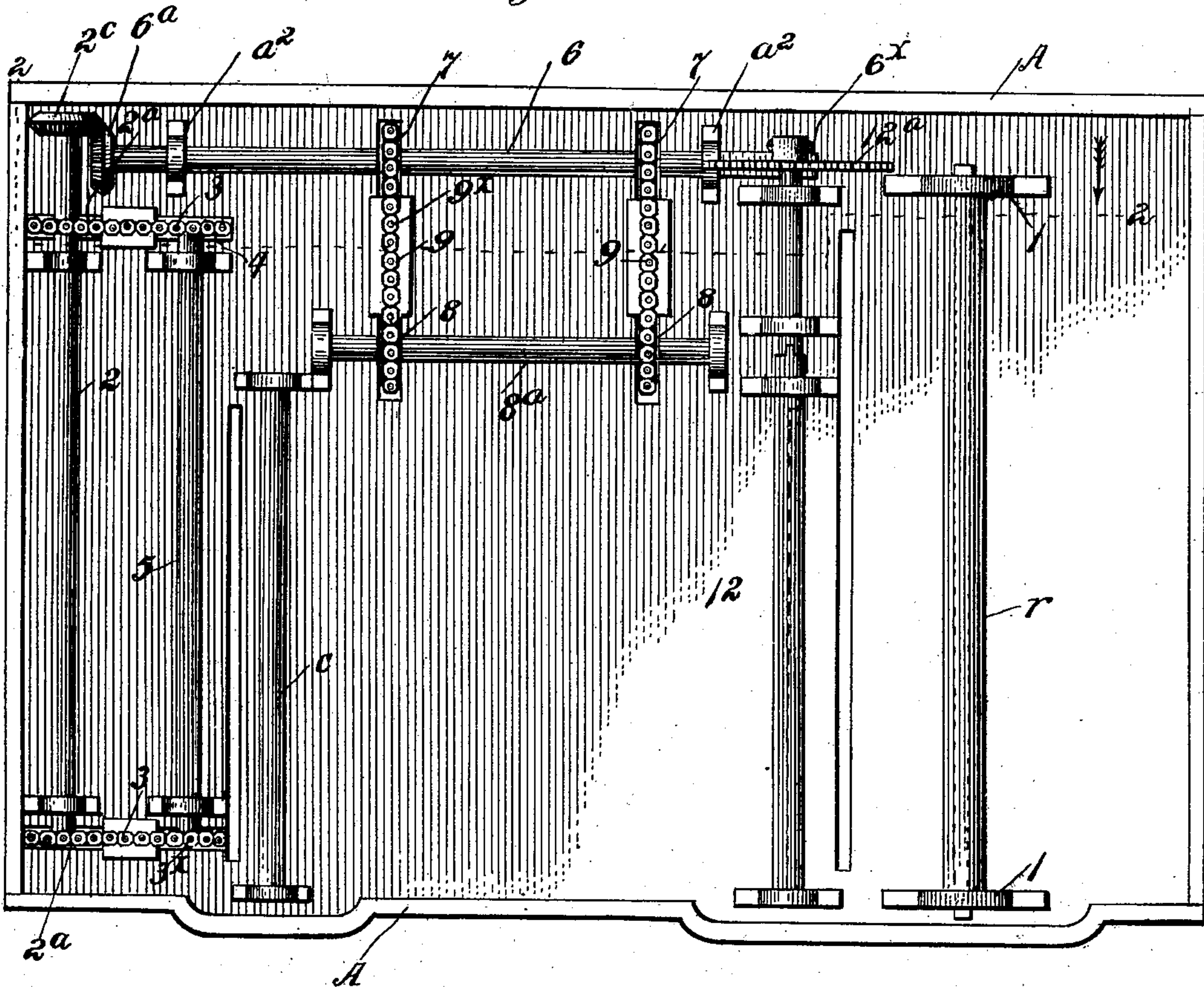
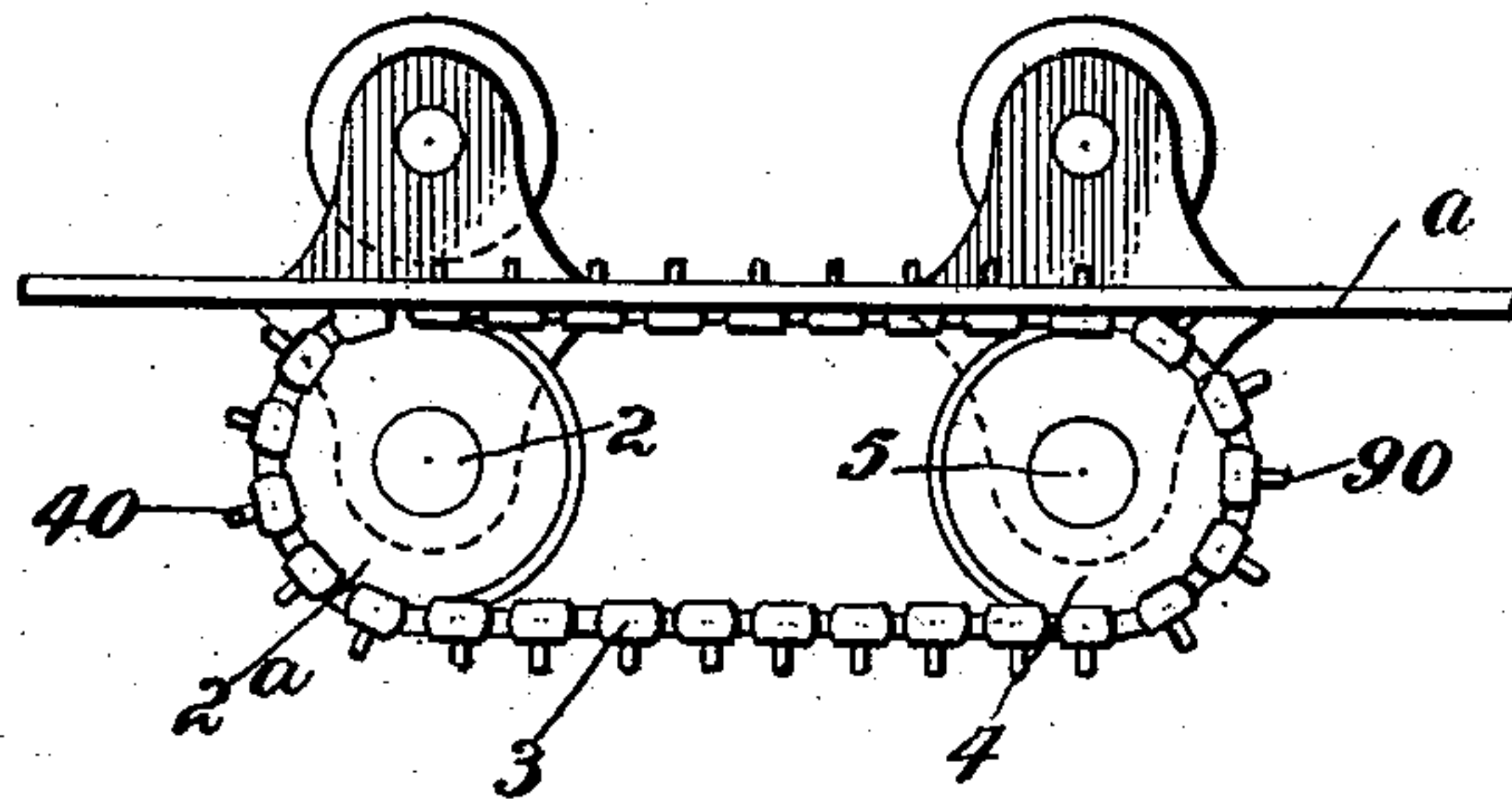


Fig. 4



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UNITED STATES PATENT OFFICE.

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MANIFOLDING-REGISTER.

SPECIFICATION forming part of Letters Patent No. 721,097, dated February 17, 1903.

Application filed September 15, 1902. Serial No. 123,516. (No model.)

To all whom it may concern:

Be it known that I, THOMAS C. SHEEHAN, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Manifolding-Registers, of which the following is a specification.

My invention, which relates to that type of manifolding-machines in which is included a main or record sheet upon which the sales, records, or entries are made and duplicating means coöperatively connected therewith and mechanism for imparting a simultaneous feed to the record and duplicating means, more particularly is in the nature of an improved feed mechanism especially applicable for the record and duplicating mechanism disclosed in the copending application, Serial No. 122,893, filed by Rufus C. Williams on even date with this application; and it consists in the peculiar arrangement and combination of parts hereinafter described in detail and specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a manifolding-machine with my improvements applied, parts of the record and duplicating sheets being broken away to more clearly illustrate the feed devices therefor. Fig. 2 is a longitudinal section of the same, taken practically on the line 2 2 of Fig. 3 and looking in the direction of the arrow. Fig. 3 is an inverted plan view of Fig. 1, and Fig. 4 is a detail view of a slightly-modified construction hereinafter explained.

My invention in its generic nature comprehends a suitable supporting-frame having a writing-surface, a duplicating sheet or sheets movable thereover in a transverse direction, a record or entry sheet movable over the duplicating-sheets in a direction at right angles thereto, a carbon or transfer sheet coöperatively joined with the said record or duplicating sheets, a feed mechanism for the record-sheet, including a drive-shaft, an actuating means therefor which is driven by direct contact with the duplicating-sheet and actuated by the movement thereof when the said sheet is pulled out to its tearing-off position, a gripping means which engages the record-sheet, a direct gear connection with the driv-

ing-shaft, whereby when the duplicating-sheet with the entry thereon is pulled out to tear off the entry-slip the record-sheet will be fed forward a predetermined distance.

My invention also includes a novel correlative arrangement of parts constituting the feed mechanism actuated by the pull movement of the duplicating-sheet, including endless flexible feed members having means for positively interlocking with the duplicating and record sheets to transmit the movement of the duplicating-sheet in one direction to the record-sheet in a direction at right angles thereto and direct gear connection between said sheet-feeding means, and a carbon or transfer sheet take-up roll, whereby to shift the carbon at each operation of pulling out the duplicating-sheet to a slip-tearing-off position.

In the drawings, A designates a suitable casing or frame, preferably of metal and skeleton shape to lighten the weight, the top portion of which has a writing-surface, (designated by *a*,) over which the duplicating sheet or sheets, as also the record-sheet, pass.

I have shown but one duplicating-sheet in the drawings and one carbon or transfer sheet; but it is manifest that several duplicating-sheets and extra carbons may be readily employed when it is desired to make more than one duplicate of the entry or record.

In the arrangement of the parts shown the record-sheet, which may be in the nature of a ledger-sheet, is of the full width of the machine, whereby to provide ample space transversely thereof for the ordinary entries or bills and also sufficient space above the end for advertising or other arbitrary matter, this style of entry portions for the record-sheet being preferred, for the reason that in my arrangement of feed mechanism entries can be made only at that side of the writing-surface over which the carbon and duplicating sheets are freely movable.

The record-sheet R is mounted on a roll *r*, which may be supported at one end, hereinafter termed the "lower" end, in any approved manner—for example, on detachable brackets 1, mounted transversely in the casing, as shown in Fig. 2, and the casing-top is provided with guides for holding the sheet

R in a proper plane to pass closely over the duplicating-sheet D. The free end of the sheet R after it passes the upper end of the machine may be torn off at each divisional portion thereof, or the whole may wind up on a take-up roll, (not shown,) if desired. The opposite edges of the sheet R, at a point beyond the writing-surface α of the casing, are held to engage with a feed device, which consists of transversely-disposed shaft 2, on each end of which is mounted a chain-gear 2^a , and with each chain-gear engages a short endless flexible member 3, that moves in the longitudinal plane of the sheet R and over a chain-gear 4, mounted on a stub-shaft 5, as shown, one of said gears 4 and shaft 5 being at each side, as shown in Fig. 1. Each of the endless members has its outer face arranged to interlock with the opposing surface of the sheet R, whereby to sufficiently grip said sheet and draw it forward as the members 3 are set in motion in the manner hereinafter described, and by reason of the interlocking engagement of the said members 3 and the sheet R it follows that the instant the feed-motion of said members ceases they act as stops for preventing further movement of the sheet R until they (the members 3) are again actuated.

On that end of the machine from which the duplicating-sheet is fed the shaft 2 has a detachable bevel-pinion 2^c to mesh with a bevel-gear 6^a on the main drive-shaft 6, disposed lengthwise of the frame A and suitably supported on brackets $\alpha^2 \alpha^2$ and in a plane sufficiently below the writing-surface α to admit of the duplicating-sheet D being properly fed in a proper horizontal plane over said writing-surface. On the shaft 6 is adjustably mounted a pair of sprocket-wheels 7 7, that align with a pair of similar wheels 8 8, mounted on the ends of a shaft 8^a , suitably journaled beneath the writing-surface, and over each pair of wheels 7 8 passes a flexible endless member 9, that moves in a plane transversely of the machine, with its upper portion just in the plane of the writing-surface α , and the outer faces of the members 9 are arranged to engage and interlock with the duplicating-sheet D, so that when the sheet D is pulled out in the direction of the arrow 10 in Fig. 1 motion is imparted to the members 9 and from them to the shaft 6 and from the shaft 6 to the shaft 2 and the feed members controlled thereby to move the outer or record sheet forward a predetermined distance.

It is apparent the feed mechanism described provides a simple, inexpensive, and positive means for feeding the sheet R forward a desired distance at each manually-operated shifting of the sheet D, and the degree of movement of the sheet R relatively to that of the sheet D can be readily governed by the relative diameters of the bevel-gears that join the shafts 6 and 2.

The carbon-sheet C may be mounted substantially in the same manner as the carbon-

sheets in the copending application before referred to are mounted. In the drawings I have for illustration shown the carbon C wound on a roller c , mounted in the upper end of the machine, and the carbon extended between the sheets R and D and its lower end made fast to a take-up roll 12, journaled transversely of the machine, at the lower end thereof. At one end of the shaft 12 is a worm-wheel 12^a , of suitable diameter to engage a worm 6^x on the adjacent end of the shaft 6, the connection of said parts 12^a and 6^x being such that at each turning of shaft 6 a slight motion is imparted to the carbon take-up roll 12, whereby to shift the carbon at each complete operation of the machine.

The members 3 and 9 may be provided with short spurs 3^x and 9^x , as shown, to puncture the sheets to interlock therewith, as shown in Figs. 2 and 3; but, if desired, the sheets R and D may have perforations to register with clearly-defined projections 40 and 90, as on the members 3 and 9. (Indicated in Fig. 4.)

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

1. In a manifolding-machine, comprising a suitable casing or frame having a writing-surface, a record-sheet movable over said surface in one direction, a duplicating-sheet and carbon-sheet therefor, said duplicating-sheet being movable over the writing-surface and under the record-sheet and at right angles thereto; of a means for feeding the record-sheet, said means including a drive-shaft, and connections for actuating the said shaft held to automatically interlock with the duplicating-sheet as said sheet is pulled out for the purposes described.

2. A casing having a writing-surface, a record-sheet movable thereover in one direction, a duplicating-sheet movable thereon at right angles to and under the record-sheet, and a cooperating carbon-sheet, a feed mechanism for the record-sheet including a drive-shaft 2, a second drive-shaft 6 geared with the shaft 2, and an actuating means for the drive-shaft 6, having a direct engagement with the underside of the duplicating-sheet and adapted to positively interlock therewith when the said sheet is pulled out and thereby impart motion to the shafts 6 and 2 as set forth.

3. In a manifolding means as described, the combination with a frame having a writing-surface, a duplicating-sheet and a record-sheet, movable over said surface at right angles to each other, and a carbon-sheet between the record and duplicating sheet; of a carbon take-up roll, a feed mechanism for advancing the record-sheet, including the drive-shaft 6, a gear connection driving said shaft and the carbon take-up roll, and actuating means on the shaft 6, including endless drivers joined with the shaft 6, movable under the duplicating-sheet and having means on their surfaces to positively interlock with said sheet, whereby when the said duplicat-

ing-sheet is pulled positive motion is applied to the said endless drivers and the shaft 6 for the purposes specified.

4. The combination in a machine of the
5 character described, with a writing-surface, a record-sheet and a duplicating-sheet movable thereover at right angles to each other, endless motion-conveyers, for each sheet, the conveyers for the record-sheet being movable
10 at right angles to those of the duplicating-sheet, said conveyers having portions for interlocking with their respective sheets, a drive-shaft for each set of conveyers, the two

drive-shafts having beveled-gear connections, all being arranged substantially as shown 15 whereby as a pull on one sheet is effected motion is imparted to its cooperating conveyer and the movement of said conveyer transmitted through the geared drive-shafts to the other conveyers to impart motion to the 20 sheets that cooperate therewith for the purposes described.

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Witnesses:

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