

July 9, 1929.

J. Q. SHERMAN

1,719,946

MANIFOLDING MACHINE

Filed Sept. 19, 1927

3 Sheets-Sheet 1

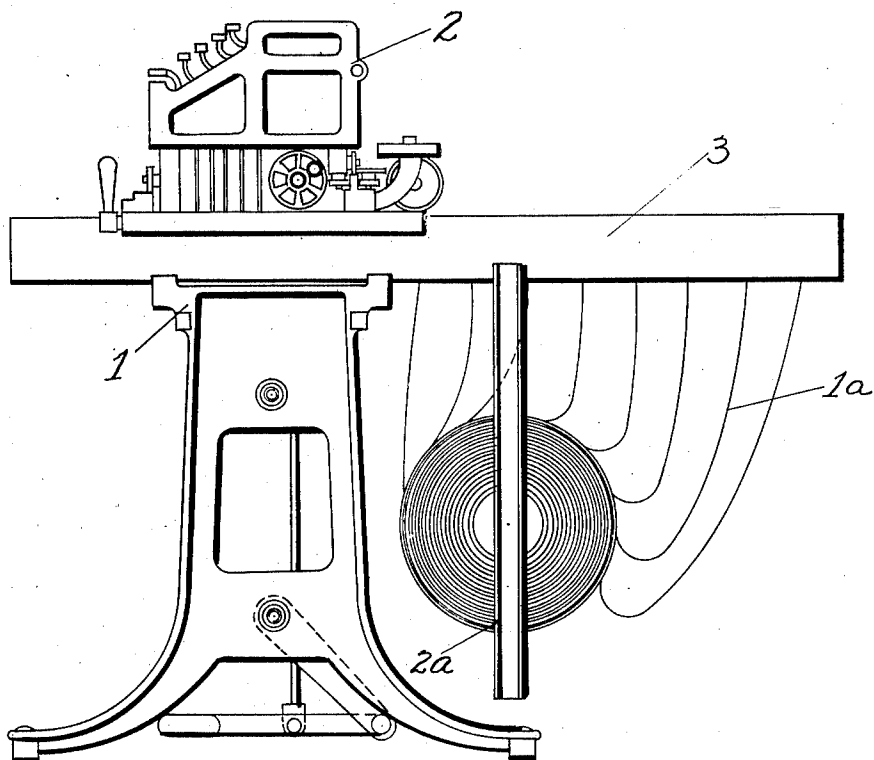


FIG. 1

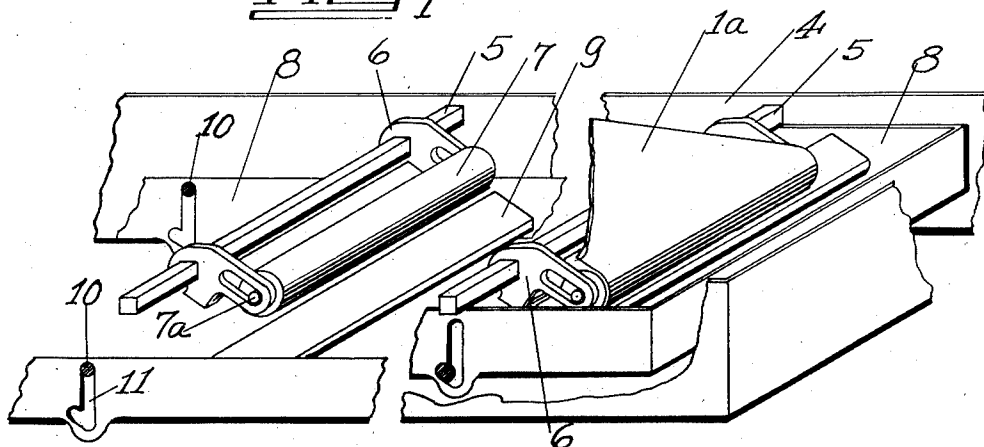


FIG. 2

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3 Sheets-Sheet 2

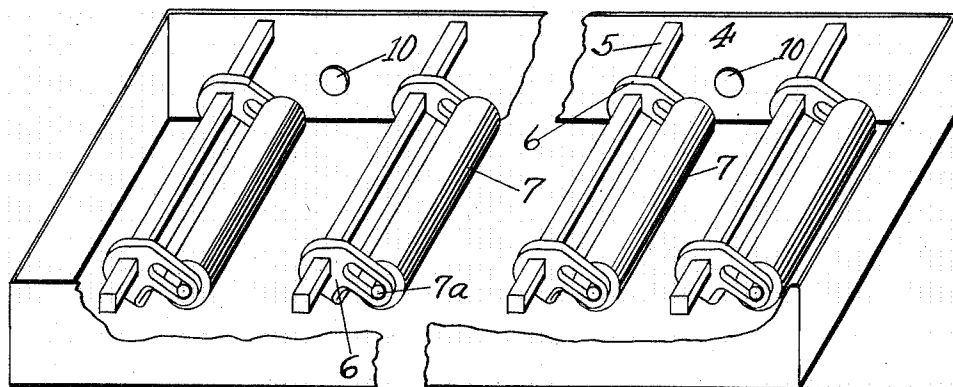


FIG. 3

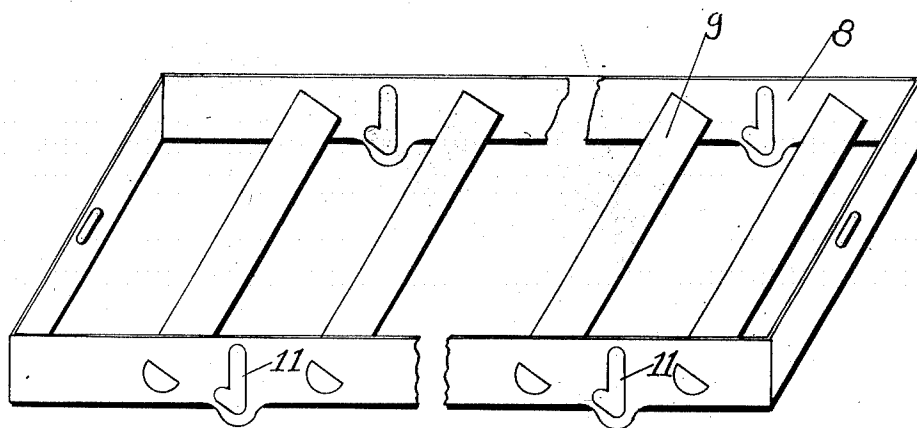


FIG. 4

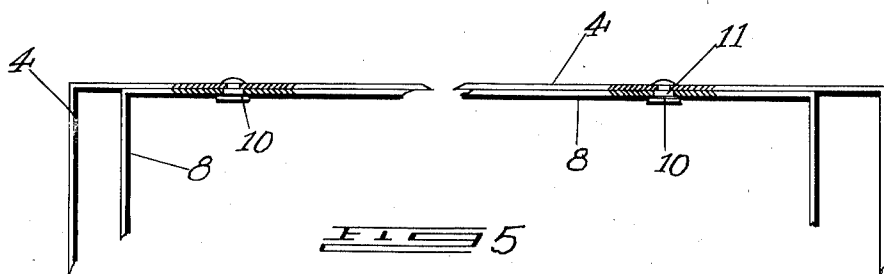


FIG. 5

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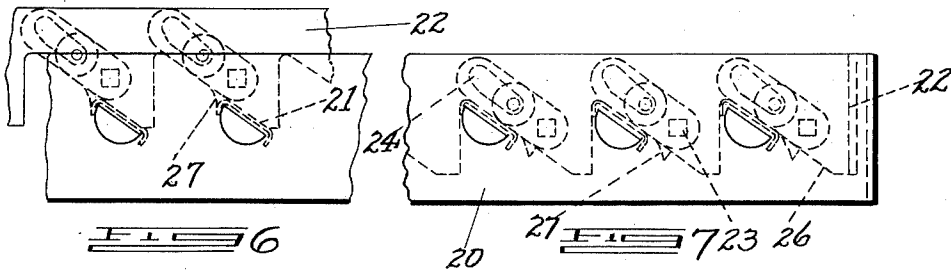
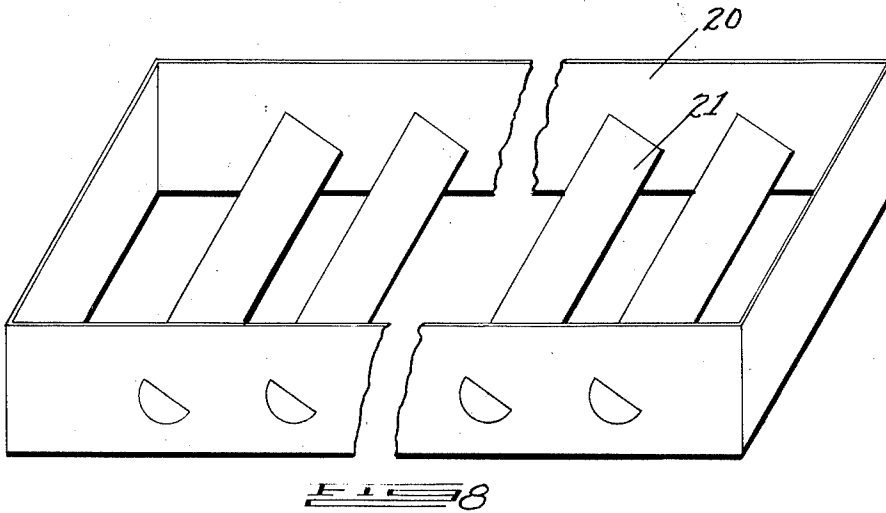
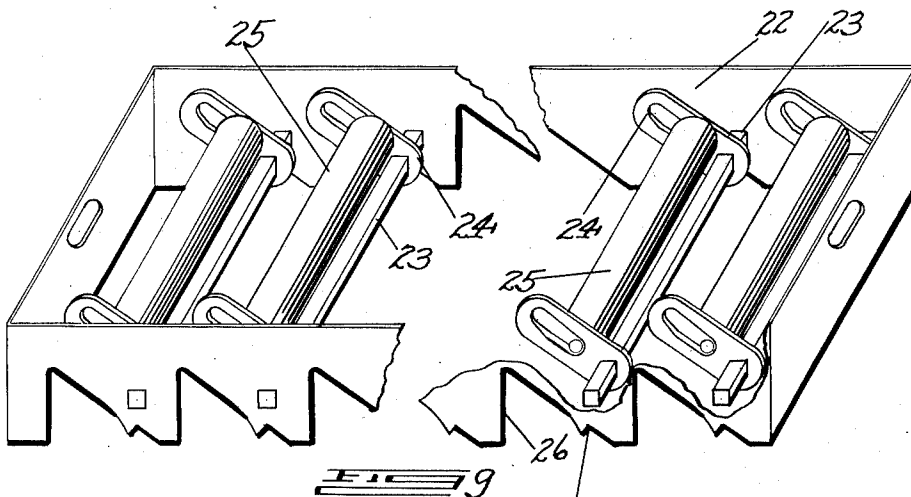
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MANIFOLDING MACHINE

Filed Sept. 19, 1927

3 Sheets-Sheet 3



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Patented July 9, 1929.

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UNITED STATES PATENT OFFICE.

JOHN Q. SHERMAN, OF DAYTON, OHIO.

MANIFOLDING MACHINE.

Application filed September 19, 1927. Serial No. 220,359.

My invention relates to paper guiding and tensioning racks for use with certain types of manifolding machines in which the paper webs are drawn along by hand over the platen of the machine and then dropped over studs or pins at the end of the platen, said studs engaging in holes formed in the paper webs. In such machines the paper is usually printed into forms which are alike for any given operation, and the primary requisite of such machines is that the various blanks in the forms should be brought into correct alignment with each other where the paper is to be written upon. The paper is brought from a point of storage up and across the writing machine platen, or autographic writing support, as the case may be, and carbon paper or other transferring means is interleaved with the several webs and transverse the said webs.

The feature which is provided for by my present mechanism results in bringing the paper webs to true alignment over the studs or pins which are hooked into the several forms on the platen by pulling back on the webs after they are hooked over the pins. Such a device is known as a tensioning device, and there are several types on the market.

In illustrating my invention I have shown it as applied to a flat bed manifolding typewriter machine which I have selected as typical of the typewriting manifolders, but it will be just as applicable to any kind of a mechanism where there are pins located at the end of the platen, and a tensioning device is required to pull the webs of paper back toward the storage, after they have been dropped over the pins.

I accomplish my objects by that certain construction and arrangement of parts of which I show and describe two forms typical of others which are possible, and the novelty of which will be set forth in the appended claims.

In the drawings:—

Figure 1 is a side elevation of a manifolding typewriter machine.

Figure 2 is a perspective detail showing the mounting of the slat frame and the roller frame with relation to each other, in my first form of structure.

Figure 3 is a perspective view of the roller frame and roller assembly.

Figure 4 is a perspective of the slat frame and slat assembly.

Figure 5 is a detail plan view partly in section showing the mounting of the slat frame on the roller frame.

Figure 6 is a detail side elevation showing the slat frame and roller frame of my second form in displaced relation.

Figure 7 is a like view showing said parts in working relation.

Figure 8 is a perspective of the slat frame of my second form of structure.

Figure 9 is a perspective of the roller frame of my second type of structure.

I have illustrated a frame 1 on which is mounted a typewriting machine 2 which moves to and fro laterally and also forward and back on the frame. The platen of the machine is located beneath the path of movement of the typewriting machine, and the studs or pins (not shown) are at the end of the machine away from the paper storage. The paper 1^a is shown as being stored in a large compound roll 2^a which contains a series of webs differentially wound so as to feed off in such a way as to bring the printed forms thereon into alignment over the platen, and maintain sufficient paper between the roll and the aligning pins to permit of preservation of the alignment.

The flat bed manifolding typewriter machine is provided with side bars to which one or the other of the frames forming part of my invention are attached. These bars are illustrated at 3 in Figure 1, and the rack upon which the line spacing mechanism of the typewriter operates is secured to these side bars.

Referring to the first of the two forms of device illustrated, I have shown a frame 4, which may be rectangular in shape, in which are rigidly mounted a series of bars 5. There will be one bar for each web of paper that is to be employed. The bars have fast thereon, or slidable thereon, the slotted plates 6. These plates have their slots depending at a slant, and rollers 7, which act by gravity in the slots, are provided with spindles 7^a which lie within the slots.

The slat frame 8 is also rectangular to fit the roller frame, and is provided with a series of slanting slats 9 extending across them so arranged that the gravity rollers will rest on and roll up and down on the slats.

When the two frames are mounted together, as will be described, the paper webs are brought up, one over each slat, then down

over the slat and back up over the roller which lies on the slat from whence it is fed across the platen of the machine.

When a section of all webs is pulled forward and set over the aligning pins, the gravity rollers will ride up during the advance, and as soon as the paper is released, will ride down along the slats, thus pulling back on the paper slightly, and aligning it by means of the aligning pin engagement.

My invention becomes of importance when it comes to the insertion of a new set of forms in the machine, in which case I provide for some kind of a separation of the slat frame and the roller frame, which leaves the space clear for the operator to work, and still retains the two frames so that when they are set back into operating position, the paper will be correctly engaged.

Referring again to the first form of the device, I have provided a series of studs 10 in the roller frame, which are placed in bayonet slots 11 in the slat frame. The slat frame will be just enough smaller than the roller frame that it will slide up into the roller frame from beneath, and the bayonet slots are such that when the studs 10 lie in the tops of the slots, the slat frame will have moved down sufficiently to clear the rollers in their lowermost position and permit easy threading through of paper webs. When the slat frame is raised, and the studs are set in the notch in the lower end of the bayonet slots, then the slats are brought up into position of contact with the rollers.

It would be practical to hinge the frames at one end, or latch them in some kind of a way into two positions, all of which would to an extent accomplish my object.

In my second form, however, I have shown another arrangement in which the slat frame and the roller frame are spaced from each other in parallelism.

Thus I have shown in Figure 8 a slat frame 20 having slats 21, said slat frame being mounted fast in the side bars of the machine. The roller frame 22 is just a little smaller than the slat frame, and is intended to be seated therein.

In the roller frame there are the fixed cross bars 23 on which are mounted the spaced slotted pieces 24, which in this case extend upwardly at a slant. The roller 25 rides in the slots.

The lower edge of the side frame pieces of the roller frame are provided with notches to engage over the slats in the slat frame, thus positioning the roller frame in correct relation to the slats. Thus I have shown the notches 26 along each side of the frame, said notches having the intermediate notch tongues 27.

When in operating relation the roller frame is set into the slat frame so that the slats lie in the upper ends of the notches.

When it is desired to charge a new set of forms the roller frame is lifted, which can be done by sliding it forwardly of the machine, so that it rides up along the notch walls. When the frame has passed to a position where the tongues 27 will engage over the tops of the slats the roller frame will rest in this position. The rollers will be thus all lifted away from the slats, and the operator will have space to charge in the new set of forms, whereupon the roller frame is lifted slightly and slid back into place for regular operation.

It will be understood that by referring to slats and a slat frame, that I intend to include any type of cross member such as bars, large rolls, curved strips or the like. The term "slat" is used for convenience as referring to a cross member in a structure of the type noted.

Having thus described typical structures embodying my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a paper pull back device for manifolders, a roller frame having means thereon for retaining a series of gravity rollers so as to move in a slating plane, a slat frame having a series of slats across the same on which said rollers ride, and means for mounting said two frames with relation to each other on the manifolder, so that they will have a position in regular operative relation to each other, and a second position with the frames spaced from each other to space the slats away from the rollers, thus permitting easy charging with paper.

2. In a paper pull back device for manifolders, a frame having a series of slats therein, another frame having a series of rollers therein arranged to co-operate with said slats in acting on manifolding paper, and means for mounting said two frames with relation to each other on the manifolder, so that they will have a position in which the rollers co-operate with the slats and another in which the rollers will be substantially widely spaced from the slats.

3. In a paper pull back device for manifolders, a frame having a series of slats therein, another frame having a series of rollers therein, and the rollers being so mounted and controlled as to have a path of movement along said slats, and means for so mounting said two frames with relation to each other on the manifolder, so that they will have a position in regular operative relation to each other, and a second position with the frames spaced from each other to space the slats away from the rollers, thus permitting easy charging with paper.

4. In a paper pull back device for manifolding machines, a frame having a series of slats therein, another frame having a series of rollers therein, one of said frames sup-

ported by the other, and means interengaging said two frames, and having two positions of engagement in one of which positions the rollers will lie on the slats, and 5 in the other the rollers and slats are in spaced and substantially parallel relation to each other.

5. In a paper pull back device for manifold folding machines, the combination of a roller 10 frame supported on the machine, and having slotted members for mounting and controlling the path of movement of a series of rollers, a slat frame having a series of slats, one for each roller, and means for securing 15 the slat frame to the roller frame comprising slots in the slat frame having a plurality

of termini, and studs on the roll reframe engaging in side slots, said slat frame arranged to fit into the roller frame, for the purpose described. 20

6. In a paper pull back device for manifold folding machines, the combination of a roller frame supported on the machine, and having slotted members for mounting and controlling the path of movement of a series 25 of rollers, and a slat frame secured to the roller frame, and having interengaging means therewith, said interengaging means having engaging positions with the slat frame both in and out of a position with the 30 rollers co-operating with the slats.

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