Feb. 8, 1949. A. DAGER 2,460,876

SHEET RECEIVING AND ALIGNING BIN

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Fig. 1.

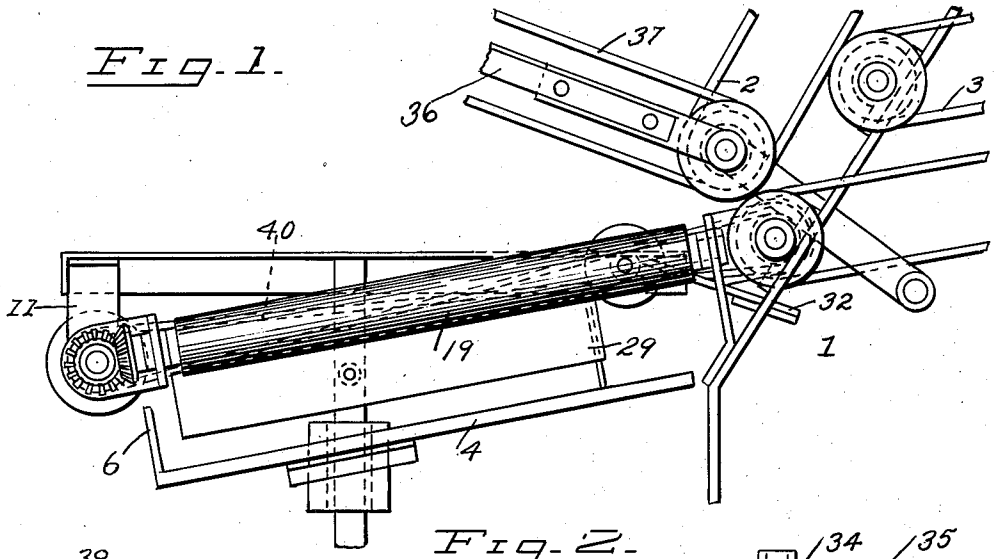
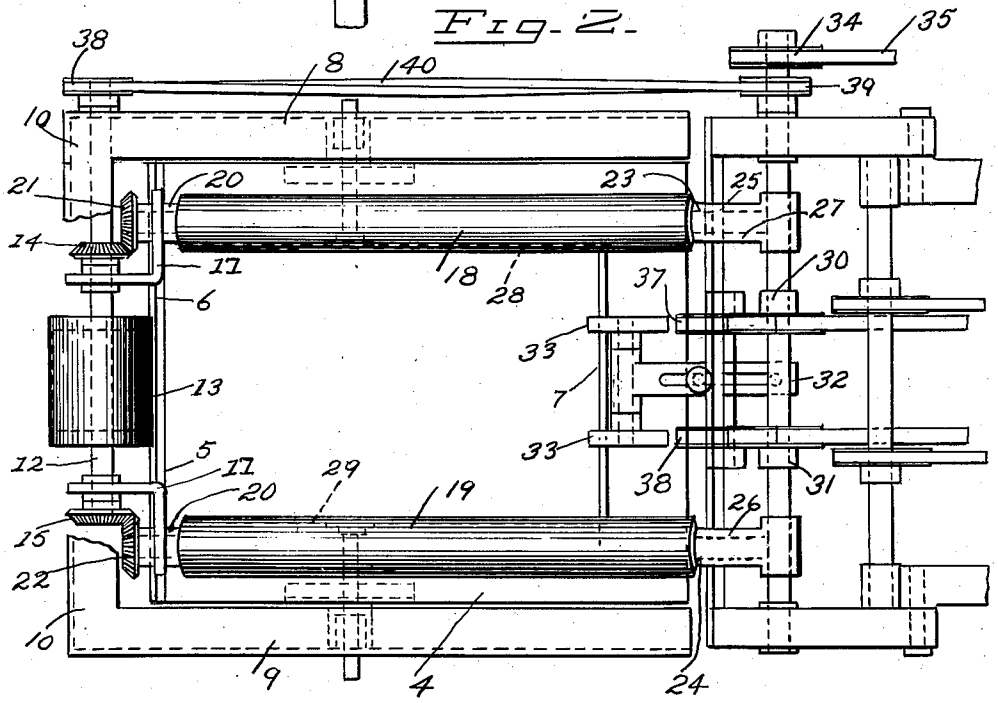


Fig. 2.



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SHEET RECEIVING AND ALIGNING BIN

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3 Claims. (Cl. 271—89)

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The present invention relates to what may be known as a jogger, or a sheet receiving and aligning bin. The invention primarily has to do with the printing art, and more specifically to printing presses and manifolding or collating machines, although within the purview of the invention it is adaptable for other uses and purposes, as hereinafter set forth.

In the ordinary manifolding or collating machine, sheets are manifolded, such as for use in price books. The sheets are usually of different color with interposed carbon paper. It is an essential feature of a collator or manifolder that these sheets should be delivered to a receiving bin in such a manner as to overlie one another.

I have discovered that due to the speed of sheet delivery a means of continuous rotary jogging is necessary instead of a synchronized reciprocating motion, such as ordinarily used for this purpose.

An object of the present invention is the provision of a device operating in conjunction with a receiving bin and in close proximity thereto, which assures that sheets are properly stacked in the bin. By way of explanation of this object, if one of the sheets is delivered adjacent one side of the bin the jogger will direct the sheet back into the bin so as to overlie the other sheets.

Another object of the invention is the provision of a jogger which properly stacks sheets so that the edges of the stack are in the same plane and regardless of how the sheet is delivered into the bin, whether it be sideways, at an angle, too far forward, or the timed sequence is wrong.

As an example of a collating or manifolding machine which may utilize the present invention, reference is had to my U. S. Letters Patent No. 2,373,746, issued April 17, 1945, for Collators.

The invention is simple of structure, inexpensive in cost to manufacture, and capable of producing superior results.

With the above-mentioned and other objects in view the invention consists in the novel and useful provision, formation, construction, association, and relative arrangement of parts, members and features, all as shown in one embodiment in the accompanying drawing, described generally, and more particularly pointed out in the claims.

In the drawing:

Figure 1 is a fragmentary side elevation of the improved jogger, shown positioned adjacent a receiving bin: and

Figure 2 is a fragmentary top plan view of the

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jogger and certain associated apparatus which may be utilized with the jogger.

Referring now to the drawing, and by way of example, a collating or manifolding machine is shown in fragment at 1 wherein a pair of parallel continuous belts 2 and 3 deliver paper in manifolded order and in properly timed sequence to a receiving bin 4. This bin may comprise a tray of some form which is adjustable as to height so as to accommodate varying stacks of paper or to progressively move downwardly as the stack is piled. Usually, such a tray is surrounded by a stop flange of some form within the confines of which the paper is placed or received. In the present instance the base of the tray 4 is shown at an inclination, so as to best receive the paper. Stops for the tray and specifically the paper therein are shown at the forward end at 5 and 6, and a transverse adjustable stop at the rear end designated as 7. These stops are movable to accommodate various lengths of paper.

An openwork framing comprising two substantially parallel members 8 and 9 with an interconnecting piece 10 is secured to the framework of a collating or manifolding machine, printing press or other machine requiring a jogging attachment. Depending from the member 10 are a pair of spaced supports 11, the supports provided with bearing portions through which a shaft 12 is passed, which shaft carries a roller 13 intermediate the supports 11. The shaft also adjustably carries a pair of bevel gears 14 and 15, the arrangement being such that brackets 16 and 17 having two legs in right angular relationship are adapted to be moved on the shaft 12 when the bevel gears, 14 and 15, are adjustably moved thereon.

Substantially in parallel relationship and for sides of the bin are elongated rollers 18 and 19 formed with end trunnions 20, the trunnions being passed through one leg of the brackets 16 and 17 with the ends thereof carrying bevel gears 21 and 22 adapted to mesh with bevel gears 14 and 15, respectively. It is evident in the arrangement shown that any movement of the bevel gears 14 and 15 upon shaft 12 will likewise move the gears 21 and 22, due to the presence of the brackets 16 and 17 so that a given relationship between the gears at all times results. Each roller is provided with end trunnions at 23 and 24, which trunnions are received in bearings 25 and 26, the said bearings being slidable upon shaft 27. In this manner substantial parallelism of the rollers 18 and 19 is at all times.

maintained, regardless of adjustment of the bevel gears 14 and 15 upon the shaft, to accommodate different widths of paper.

In addition to the spacing of the rollers 18 and 19 I provide adjustable spacing bars 28 and 29 for sides of the paper and so that the paper when received within the bin will be positioned between said bars 28 and 29 and the members 6 and 7. Pulleys 30 and 31 are mounted on shaft 27 and extending forwardly of and between said pulleys is an arm 32 which adjustably positions rollers 33. The shaft 27 carries a pulley 34 around which a continuous belt 35 is passed for the purpose of driving said pulley, and in turn rotating shaft 27. Reference to Figure 1 reveals that an extended swing arm 36 is intermediately positioned between pulleys 30 and 31 and that said arm carries at its outermost end a pair of spaced apart pulleys suitably mounted in bearings, not shown, with continuous belts 37 and 38 passed between said outermost pulleys and the pulleys 30 and 31. When arm 36 is swung downwardly from the position of Figure 1, the continuous belts 37 and 38 ride on the periphery of the rollers 33 so as to cause rotation of said rollers 33 when the shaft 27 is rotated. It is obvious that if shaft 12 is rotated that the rollers 18 and 19 will be turned in opposite directions. To accommodate rotation of shaft 12 I may either rotate by suitable means the trunnions 23 and 24 of said rollers 18 and 19, or I may as depicted in the drawing provide a pulley on the outer end of shaft 12 as illustrated at 38, and provide a pulley 39 on shaft 27 and extend between pulleys 38 and 39 a continuous belt 40. Thus, rollers 18 and 19 will be rotated in opposite directions, that is, inwardly toward the bin, roller 18 revolving to the right, and roller 19 to the left, while rollers 13 and 33 both revolve downwardly, which is to say roller 13 to the right and roller 33 to the left.

The belts 37 and 38 move in such a manner as to direct the paper forwardly toward roller 13.

The operation, uses and advantages of the invention just described are as follows:

When the collator, printing press or other device is in operation and sheets are being delivered to a receiving bin, the rollers 13 and 33, 18 and 19, will revolve inwardly towards the base of the bin and at a suitable rate of speed. Such revolution occurs due to the driving of shaft 27 by continuous belt 35 passed over pulley 34, and by the continuous belt 40 passed between pulleys 38 and 39, which rotates shaft 12. Rotation of shaft 12 will rotate the side rollers 18 and 19 through the medium of the bevel gears 14 and 21, 15 and 22.

Thus, as paper is delivered in piled sequence or manifolded the jogger will direct said paper between the spacer members 6, 7, 28 and 29 so that all sheets will overlie with the edges in substantial parallelism. As the stack builds the base member for the bin descends and a stack of paper of any predetermined and selected height will result.

The primary object and purpose of this invention is to provide a means such as the rollers 13, 33, 18 and 19 revolving in opposite directions and toward the base of a bin, which rollers are adjustable as to length and width of the paper

to be delivered in the bin, and whereby when the paper contacts any one of the rollers, the rollers due to their rotation will direct the paper onto other stacked paper within the bin, the resulting edges of the paper being parallel to any sheet therebeneath.

The method of driving the rollers, the type of collator or manifolding machine, or printing press, whether the cylinder type or platen, forms no part of the invention, the invention residing in a rotary type jogger capable of handling peak loads rapidly, accurately and efficiently.

I claim:

1. In apparatus of the character set forth, the combination with a paper sheet receiving bin, and means for delivering paper sheets to said bin, of means for aligning the edges of said sheets within the bin, said means comprising a pair of spaced-apart parallel rollers overlying the bin and extending the length of the bin, means for rotating both the said rollers simultaneously and in opposite directions, and in such a manner that a sheet, if delivered off center to the bin, will contact one of the rotating rollers and be directed into the bin.

2. In apparatus of the character set forth, the combination with a paper sheet receiving bin, the sheets of which are to be stacked in edge alignment within the bin, of a pair of elongated, spaced-apart rollers extending the length of the bin and positioned directly over and adjacent an edge of paper to be stacked within said bin, a roller at one end of said bin and intermediate the first mentioned rollers, and means for simultaneously rotating all of said rollers in a direction inwardly toward the stacked paper in said bin; said elongated rollers being spaced apart a distance substantially equal to the width of a sheet of paper.

3. In apparatus of the character set forth, the combination with a paper sheet receiving bin, of means for delivering sheets of paper to said bin, and means for stacking the sheets within the bin so that the sheet edges are in alignment; said last named means comprising a pair of elongated rollers extending substantially the length of the bin, a roller for one end of the bin positioned intermediate one end of the elongated rollers, means for adjusting the spacing between the elongated rollers to correspond to the width of a sheet to be delivered within the bin; and means for simultaneously rotating all of the said rollers in a direction toward the stacked sheets in the bin and whereby, if a sheet of paper is delivered to one side of a center line included between said elongated rollers, rotation of the rollers will contact the sheet and direct the sheet within the bin.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
698,597	Votaw	Apr. 29, 1902
1,736,482	Broadmeyer	Nov. 19, 1929
1,802,775	Palmer	Apr. 28, 1931
1,865,308	Evans et al.	June 28, 1932