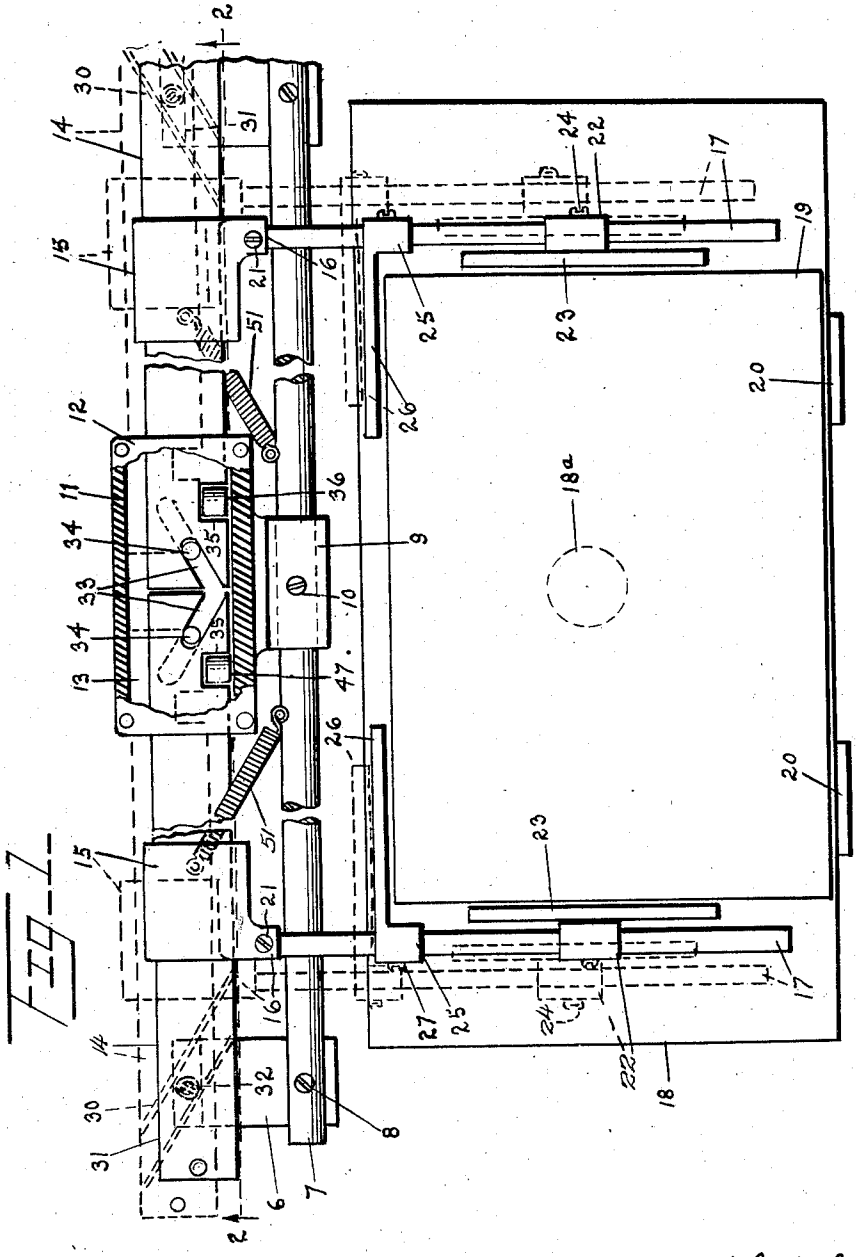
March 10, 1942. P. H. SCHULZ 2,275,688

PAPER JOGGING APPARATUS FOR PRINTING PRESSES

Filed April 17, 1940 2 Sheets-Sheet 1



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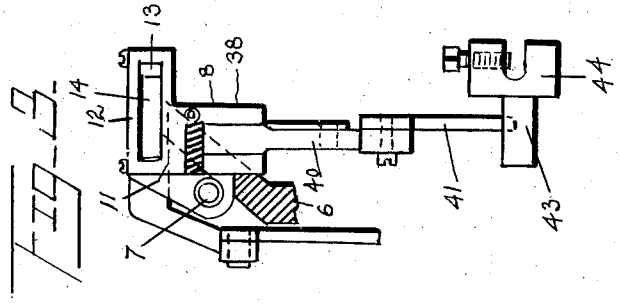


Fig. 1.

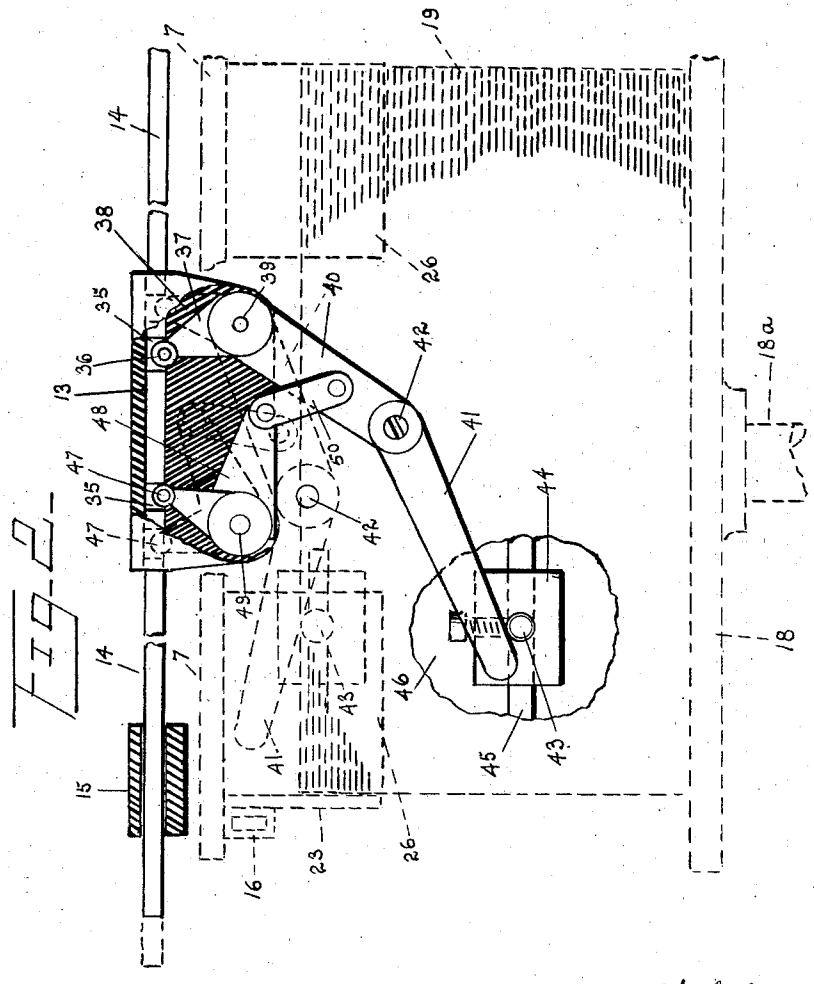


Fig. 2.

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PAPER JOGGING APPARATUS FOR PRINTING PRESSES

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10 Claims. (Cl. 271—89)

My invention has reference to a jogging apparatus for printing press work and paper sheet stacking work of a similar character, and has for its chief purpose to provide instrumentalities for performing that class of work which will operate effectively and perfectly, and will do away with the necessity of supplementing the mechanical work by additional arranging or straightening of the sheets by hand, as is frequently required with the use of jogging devices such as have been made use of in the art for a number of years. By the use of the present machine there is a considerable saving of time and labor, not only in the handling of the sheets as they may be received from a press, but in various operations associated therewith, or possibly entirely distinct therefrom. One such saving is in time required in the cutting and trimming operations; another is when the sheets are being operated upon in a bindery, or going through a binding machine; another is in the case of the sheets being run through a press serially, as when being printed in two or more colors; another is in the work of wrapping and packing the sheets, which is facilitated by the perfect stacking of the sheets by the machine. Other similar advantages will be obvious to those interested in that kind of work.

The purpose of the invention is carried out mainly by the use of jogging devices for engagement with the edges of the sheets of paper as they are being delivered in succession to a pile of such sheets, which jogging elements are movable away from the pile as the sheets are being delivered, and returned for the arrangement or alignment of the sheets after the delivery thereof. One of the chief features of the invention is the provision of mechanism for moving the jogging elements outwardly and return so as to propel the same along diagonal or angular lines, instead of straight out from the pile and straight back again, as has been the practice. By the adoption of the angular movement it is possible to support the parts by a novel and simplified mechanism, and with a considerable saving in such mechanism. This also makes it possible to limit the space which is occupied by the mechanism to a much reduced area from that which is now required for the operation of jogging elements supported to move straight away from the machine.

As set forth herein the invention is shown as being attached to another machine, such as a printing press, and it is of such a character that it can be readily adapted to a connection with different types and sizes of presses, for operation therewith. It is not limited to use with such devices, however, but can comprise an independent unit for use in arranging sheets of printed matter which may be brought to it from any source. The jogging elements are also capable of a considerable amount of adjustment, so as to be adaptable to relatively large sheets of printed matter, or of various sizes ranging as small as sheets produced by mimeograph or multigraph machines, and can be set for use with papers and cards of the dimensions of post cards.

The above named, and other features and advantages of the invention will more fully appear from the following specification, reference being had to the accompanying drawings, in which—

Fig. 1 is a plan view of the invention, as it appears when in use, with one of the supporting plates broken away at one end.

Fig. 2 is a cross section on the broken line 2—2 of Fig. 1, with parts of the supporting table and jogging apparatus indicated in broken lines, to show the relative positions of the parts.

Fig. 3 is a detail of the lever mechanism and appurtenant parts, as seen from the right of Fig. 2.

Similar parts are referred to by corresponding numbers throughout the several figures.

The reference numbers 6, 6 indicate a pair of brackets, such as are commonly projected upwardly and forwardly from a printing press, only fragments of which are shown in the drawings herein. A main support or base rod 7 is secured to the brackets 6 by means of screws 8, or other fastening means, which hold such rod rigidly in place. Mounted at a central point on the rod 7 is a sleeve 9, held in place by a screw or bolt 10, and projected from said sleeve is a housing 11, fitted with a cover plate 12, beneath which is a longitudinal channel 13, adapted to receive the adjacent ends of a pair of plates 14. On each of said plates is supported a mounting 15, each of which has a downward projection 16, having an opening to receive a bar 17, the pair of such bars extending forwardly above a table 18, supported at the front of a machine in the usual manner, and provided with means not shown for vertical adjustment. The table 18 is for the support of a pile of printed sheets, indicated at 19, and held at their forward edge by stops 20. The bars 17 are slidably mounted in the supports 16, and can be held in adjusted positions by screws 21.

Slidable on the bars 17 are sleeves 22, carrying

jogging plates 23, having straight inner faces adapted to bear against the side edges of sheets delivered on the table, and held in adjusted positions by screws 24. Sleeves 25 also movable on the bars 17 support similar jogging devices 26, with inner faces at right angles with the faces of the plates 23, and disposed for bearing against the rear edges of the sheets. Screws 27 hold the sleeves 25 from movement on said bars.

Near the outer ends of the plates 14 are formed diagonally and oppositely disposed channels 30, engageable with guides 31 pivotally supported on the brackets 6 as by screws 32. At the inner ends of the plates 14 are diagonal slots 33, disposed at angles corresponding with those of the channels 30, and having a sliding engagement with pins 34 in the housing 11. The edges of the plates 14 are provided with a pair of notches 35, one of which is engaged by a bearing 36 on the end of an arm 37 rockingly mounted on a pivot 39 in a vertical channel 38 extending downwardly from the channel 13. Connected with the arm 37 is an arm 40, with which is connected a lever 41 by means of a bolt at 42. The lever is engageable by a pin 43 projecting from a clamp 44 fixed to a rib 45 on the face of a plate 46, forming a movable part of a press. As said plate moves upwardly the end of the lever 41 is engaged thereby and carried upwardly into the position shown in broken lines in Fig. 2. This movement rocks the arm 37 outwardly, and the plate 14 outwardly, and also upwardly, by reason of the diagonal trend of the channel 30 and slot 33.

The other recess 35 is engaged by a bearing 47 on the end of an arm 48, also rockingly mounted on a pivot 49 in the channel 38, and forming part of a bell-crank lever, the other end of which is connected by a link 50 with the arm 40. By this means the movement of said arm is imparted to the arm 48 to cause a simultaneous outward and upward movement of the other plate 14. The return of the plates 14 to the original positions is compelled by coiled springs 51 connecting said plates with the rod 7, and also disposed in diagonal positions corresponding with that of the channels 30. Said springs also assist in counterbalancing the plates, and prevent too abrupt outward movement thereof. By loosening the screw 42 the position of the arm 41 can be changed, so as to hasten or retard the action of the lever devices, as desired, and again secured in adjusted position.

At each delivery of a sheet to the table 18 the jogging elements are fully opened, being moved outwardly and upwardly as shown in broken lines in Fig. 1, and are returned to their original positions by a reverse movement, with no possibility of displacing or mussing the sheets.

What I claim and desire to secure, is:

1. A jogging apparatus for printing press work, comprising a frame, a main support connected rigidly with the frame, a housing supported from said main support, a pair of plates supported in said housing at their adjacent ends, provided at their outer ends with opposite disposed channels, diagonally of said plates, similarly disposed slots at the inner ends of said plates, guiding means on said frame engageable with said channels, guiding means in said housing engageable with said slots, a jogging apparatus supported from said plates, and means for moving said plates to spread the jogging apparatus in a direction angular to the edges of a stack of material to be arranged by said jogging apparatus.

2. In combination with a table for the support of a pile of printed sheets, and stops at one side thereof, a main supporting member, means for the support of said member in proximity to said table, a secondary supporting member rigidly connected with said first-named member, a pair of plates supported at adjacent ends by said secondary supporting member, with connecting means between said plates and member for directing said plates angularly to the medial line of said table, jogging elements carried by each of said plates, and means for actuating said plates to cause an opening of the jogging elements.

3. In combination with a table for the support of a pile of printed sheets, and stops at one side thereof, a main supporting rod, and means for support of said rod adjacent to said table, a housing rigidly connected with said rod, having a central channel, a pair of plates supported at their inner ends in said channel, means for causing diagonal movement of said plates, bars carried by said plates provided with jogging elements for operation on said table oppositely to said stops, means for movement of said plates to cause a spread of said elements along angular lines, and means for returning said bars and jogging elements to their original positions.

4. A device of the class described, comprising a frame, a support for sheets of printed matter adjacent thereto, stops at one side of the support, a housing supported from said frame, a pair of plates supported in said housing and extending in opposite directions therefrom, means for imparting movement to said plates, means for directing the movement of said plates angularly to the medial line of said support, and jogging elements supported from said plates, and engageable with the edges of said sheets across from said stops.

5. In combination with a table for the support of sheets of material, a main support and mountings for same in proximity to said table, a housing connected with said main support, a pair of plates supported in said housing and extending in opposite directions therefrom, means for guiding said plates in a movement angular to the medial line of said table, bars supported by said plates above said table, jogging elements carried by said bars, for the engagement with edges of sheets of paper stacked on said table, and means for imparting movement to said plates.

6. In combination with a table for the support of sheets of printed matter, a frame, adjacent thereto, a main support held rigidly by said frame, a housing connected with the main support, a pair of plates supported in said housing and extending in opposite directions therefrom, means for giving longitudinal movements to said plates, means for guiding said plates in movements eccentric to the medial line of the housing, bars supported on said plates for adjustable positioning thereon, jogging elements supported by said bars above said table, and movable eccentrically with said plates, and means for returning said plates and jogging elements to their original positions by a reverse movement.

7. In combination with a frame, a table in proximity thereto for the support of printed matter sheets of uniform size, a main support mounted on said frame, a housing connected with said main support, plates supported in said housing and extending in opposite directions therefrom, paper jogging apparatus supported from said plates, including elements for engagement with sheets delivered to said table, means for actuat-

ing said plates to cause a movement of the jogging elements away from the sheets, and means for directing the movement of said elements to or from a stack of such sheets in a direction angular to the medial line of said table.

8. A jogging apparatus for printing press work, comprising a frame, a table in proximity to said frame for the support of sheets of paper of uniform proportions, means at one side of said table forming stops for sheets being delivered thereto, a housing connected with said frame, a pair of plates supported in said housing and extending oppositely therefrom, and provided in their outer ends with diagonally disposed channels, guides on the frame operating in said channels, jogging mechanism supported from said plates at the sides of the table and movable diagonally away from the stack of sheets thereon by said plates, and returnable in a reverse direction, and springs connecting said plates and frame disposed diagonally to correspond to the angle of said channels, and aiding in returning the plates and jogging apparatus to their original positions.

9. A jogging apparatus for printing press work, comprising a frame, a table in proximity to said frame for the support of printed sheets of paper of uniform size, a housing rigidly supported by said frame, a pair of plates supported at adjacent ends in said housing and extended oppositely therefrom, provided in their outer ends with diagonally disposed channels, guides on the frame operating in said channels, jogging mechanism supported by said plates above the table, means for actuating said plates, and springs connecting said plates and frame, serving to counterbalance the plates and their load, and also storing power to return said plates and jogging mechanism to their original positions after being actuated.

10. A device of the class described, comprising a frame, a table adjacent thereto for the support of sheets of printed matter, a housing supported from said frame, a pair of plates supported in said housing and extending in opposite directions therefrom, coacting mechanism between said plates and the frame for imparting an angular movement to the plates, when operated, jogging devices supported from said plates, compound lever mechanism supported by said housing operatively connected with said plates, to give movement thereto in opposite directions, and means for actuating said lever mechanism at intervals corresponding to the delivery of sheets on said table.

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