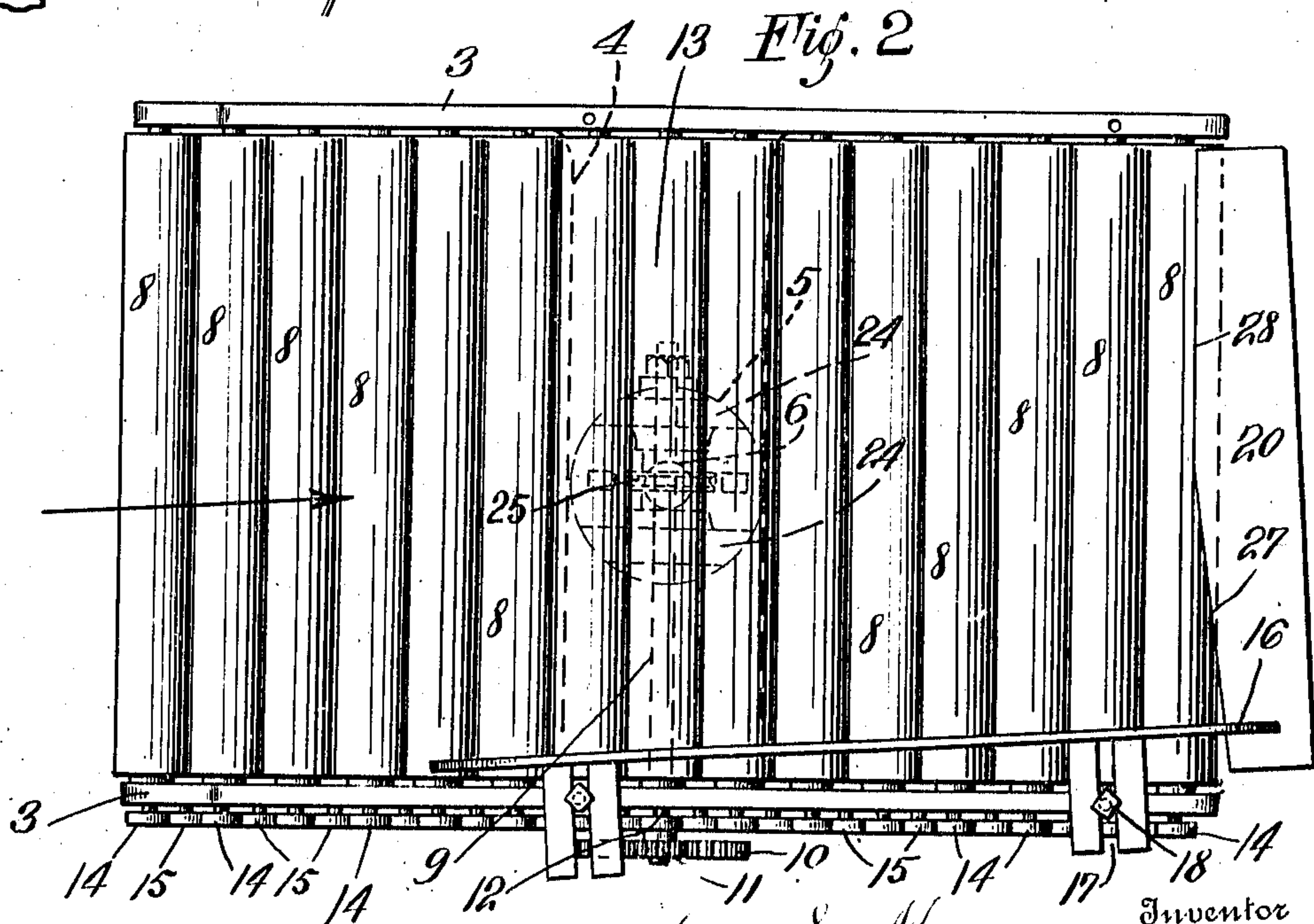
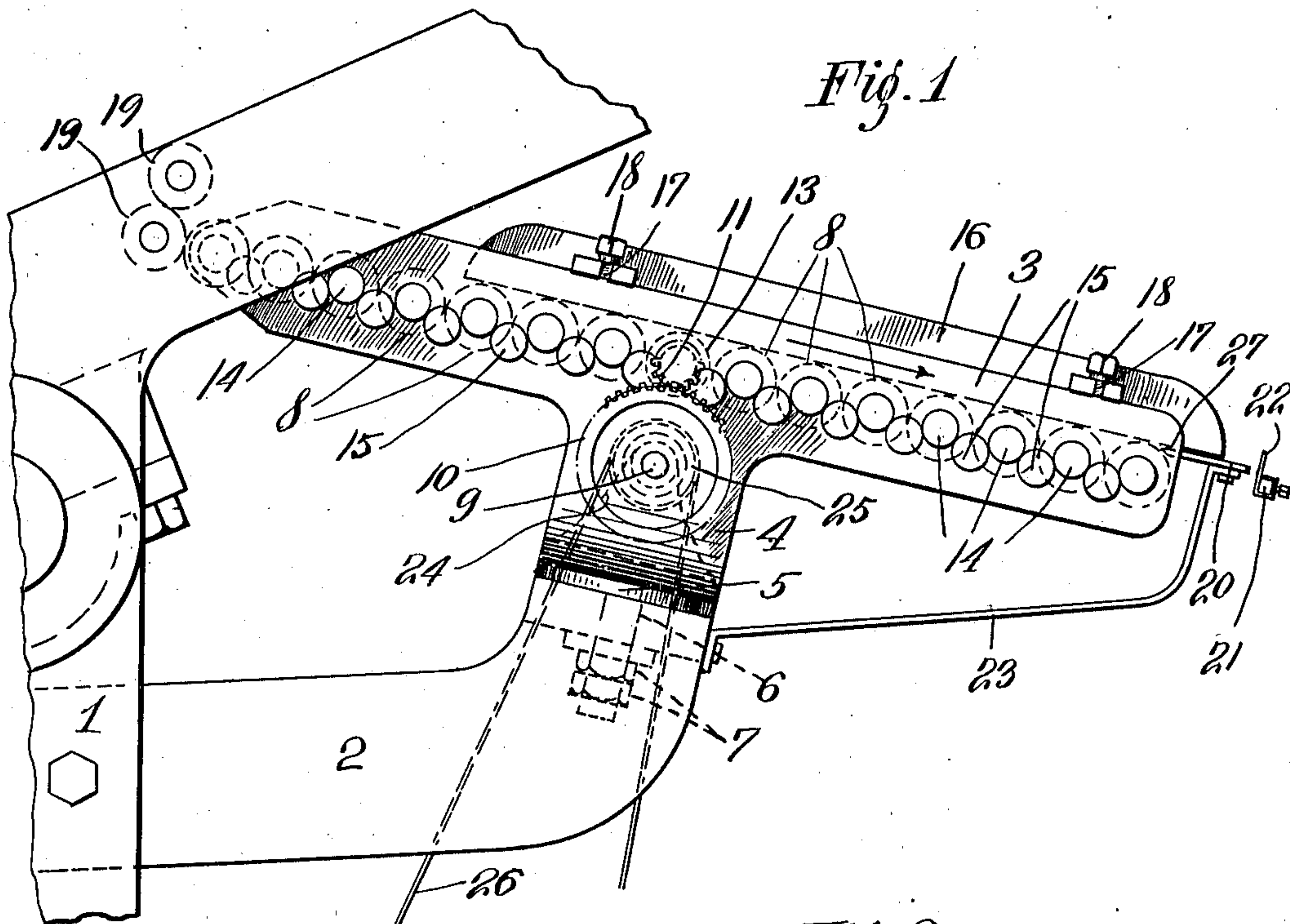


L. E. MORRISON.
SHEET REGISTERING DEVICE.
APPLICATION FILED JAN. 17, 1908.

Patented Sept. 13, 1910.

970,256.



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SHEET-REGISTERING DEVICE.

970,256. Specification of Letters Patent. Patented Sept. 13, 1910.

Original application filed January 2, 1907, Serial No. 350,516. Divided and this application filed January 17, 1908. Serial No. 411,246.

To all whom it may concern:

Be it known that I, LEWIS E. MORRISON, a citizen of the United States of America, and a resident of the city of Newark, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Sheet-Registering Devices, of which the following is a specification.

This invention relates to sheet registering devices such as used in connection with printing or other machines.

The subject matter of this invention is divided out from an application for improvements in printing machines, filed by me Jan. 2, 1907. Ser. No. 350,516.

The object of this invention is to provide a device for registering sheets in a predetermined position in such a manner that the sheet may be subsequently acted upon by a printing or other mechanism.

The particular features of this invention reside in the novel manner in which the sheet is side registered and the means for supporting and moving it, the particular object being to construct this mechanism as simply and effectively as possible and to provide means, through which the side register can be changed instantly from one side to the other, this in turn necessitating novel and useful improvements in the method of transmitting power to the registering mechanism.

The detailed construction is set forth in the following description and the novel features pointed out in the claims, while the preferred form is illustrated in the accompanying drawing, which, for the purpose of this disclosure, shows this registering mechanism as illustrated and described in the application above cited, though it will be clear that this device may be used in connection with other machines than printing presses.

In the said drawing: Figure 1 is a side elevation of a registering device embodying my invention. Fig. 2 is a plan view thereof.

In the present instance, the reference numeral 1 indicates a portion of the frame of the machine to which my invention is attached, 2 indicates a supporting bracket, while 3 denotes the side frames. These side frames are preferably integral with the piece 4 which connects said side frames and which forms a disk 5 in the center which rests on the bracket 2 and is pivoted thereto by the

bolt 6 having lock nuts 7. In other words the frames 3 and piece 4 form a U-shaped centrally pivoted bracket.

Between the side frames are mounted rollers 8 with just enough space between them to permit them to rotate. These rollers are all driven in the same direction, indicated by the arrows, from shaft 9 by the following means: The said shaft 9 carries a gear 10 which meshes with a pinion 11 on the shaft 12 of that one of the rollers 8 which in the drawing is indicated by 13. The shafts of all the rollers project through the one side frame as clearly seen on Fig. 2 and the driving means are mounted outside said side frame. On the shaft of each roller 8 and the roller 13, is mounted a friction roll (or pinion) 14 and the motion is transmitted from the roller 13 to the rollers 8 by means of the intermediate friction rollers (or pinions) 15 mounted on studs outside the frame. In this manner all the rollers are rotated in the same direction when power is applied to shaft 9.

A side guide as 16 is provided which is adjustable by means of slots 17 and bolts 18. In this instance only one side guide is shown but it will be understood that a similar guide for the opposite side will be provided. In the present instance the sheets are supposed to be fed from a primary feeding mechanism containing the feed rolls 19, 19, but it is obvious that the sheets may be fed by hand if desired. A plate as 20 is provided onto which the sheet moves and abuts the register bar 21 having the stop 22. This plate is fixed either in the manner shown by means of the brace 23 or otherwise, depending upon the build of the machine.

The shaft 9 is journaled in ears or lugs 24 which arise from the disk 5 and in the center this shaft carries a pulley (or gear) 25 driven by belt (or chain) 26 or other suitable means constantly in one direction, receiving the power from some shaft on the machine to which my device is attached.

It will be understood that the register stop bar moves periodically out of the way of each sheet to permit the same to be transferred from the plate 20 by means of grippers or other mechanism. There will preferably be a slight distance between the plate 20 and the stop bar to permit of a

margin of the paper being clear for action by grippers or similar devices, or the table may be provided with cut out portions for this purpose.

- 5 The operation of this device is as follows: Suppose for the sake of illustration that it is desired to register the right side of the sheet. In this case the register table—that is the layer of rollers in their supporting frame—is turned to the right as shown in Fig. 2 and locked firmly in this position by means of the lock nuts. The sheets are either placed on the table by hand or preferably fed thereto by a primary sheet feeding device and are conveyed toward the register stop bar by the rotation of the rollers. Before reaching the stop bar, however, the sheet is crowded against the side guide—in this case the right guide—and this crowding or conveying is due to the turning of the register table around its central pivot. In other words, the sheet is moved in a diagonal path until its edge registers with the side of the side guide, after which it moves along said guide until its forward edge abuts the stops on the stop bar. Next, this latter element is moved out of the way by suitable means such as disclosed in the application above referred to, and the sheet is finally removed. In this manner each sheet is automatically placed in the same position previous to its further manipulation by the machine and the object of this invention is accomplished.
- 35 From the foregoing it will be understood that the driving power must be applied centrally, because at any other point of the device there is too much deviation from the straight center line of the device to permit of successful driving. And this will further be emphasized by an inspection of Fig. 2, from which it is seen that all other points of the device swing in quite an arch around the center.
- 45 If it is desired to register to the left, the table is swung to the left and locked and the side guide changed. And it should be kept in mind that the turning of the table can be nicely adjusted to suit any kind of paper.
- 50 The plate 20 is provided with the two edges 27 and 28 at an angle to one another. The edges are beveled as shown in Fig. 1 so as to overlap the last roller and the angle between the two edges is such that said edges are substantially parallel to the axis of the rollers when the same are turned to the one or other side respectively.

From the above, it is thought that this invention and its mode of operation is fully set forth and clearly described in its preferred form.

The term "registering table" in the claims should be construed to cover the rollers and their supports, and will be readily understood by those skilled in the art.

What is claimed is:

1. In a sheet registering device the combination of a registering table comprising a layer of rollers, a centrally pivoted support for said rollers, and means for driving the latter from the center of said support.
2. In a sheet registering device the combination of a plurality of rollers, a centrally pivoted support for said rollers, adjustable side register means and means for rotating said rollers constantly in one direction.
3. A sheet registering device comprising a frame, a plurality of rollers pivoted in said frame, means for positioning the said rollers with their axis at any predetermined angle to the center line of the device, side register means, means for positioning the latter parallel to the center line of the device and centrally driven means for rotating the said rollers constantly in one direction.
4. A sheet registering device comprising a centrally pivoted frame, a plurality of rollers journaled in said frame, adjustable side register means, a fixed register plate adjacent said rollers and means for driving the latter.
5. A sheet registering device comprising a centrally pivoted frame, a layer of rollers journaled in said frame, means for rotating said rollers constantly in one direction, side registering means carried by said frame, and a plate adjacent said rollers having a plurality of beveled edges at an angle to one another on the side nearest the rollers.
6. A sheet registering device comprising a layer of rotatable members or conveying a sheet, a plate adjacent said members, said plate having two of its sides at an angle to one another nearest the said members and means for adjusting the axis of the rotatable members parallel to the one or the other of the said two sides.

Signed at New York, N. Y. this 11 day of Jan. 1908.

LEWIS E. MORRISON.

Witnesses:

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