Aug. 3, 1954 H. T. BACKHOUSE 2,685,446

SHEET REGISTERING APPARATUS

Filed Nov. 9, 1949 2 Sheets-Sheet 1

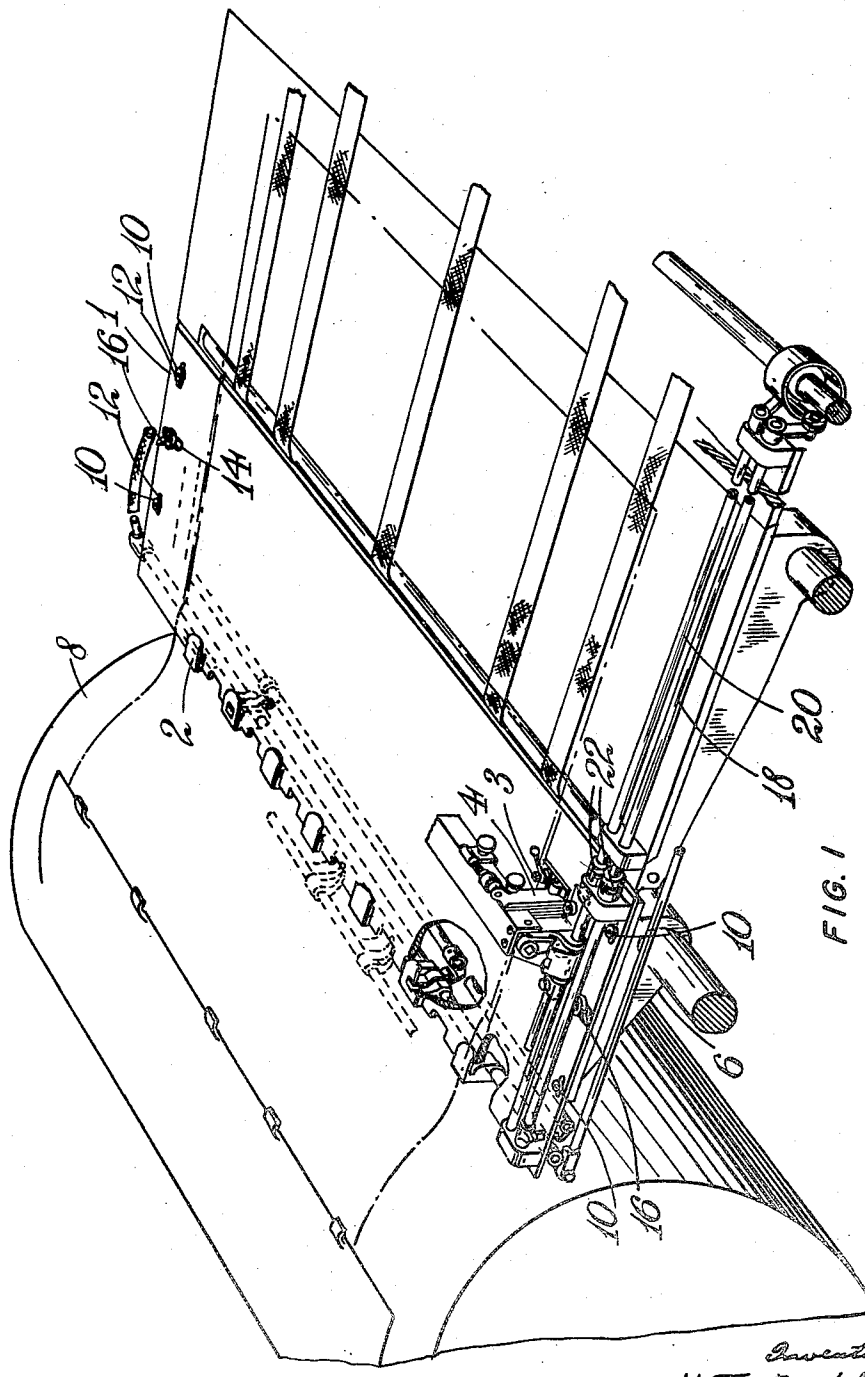


FIG. 1

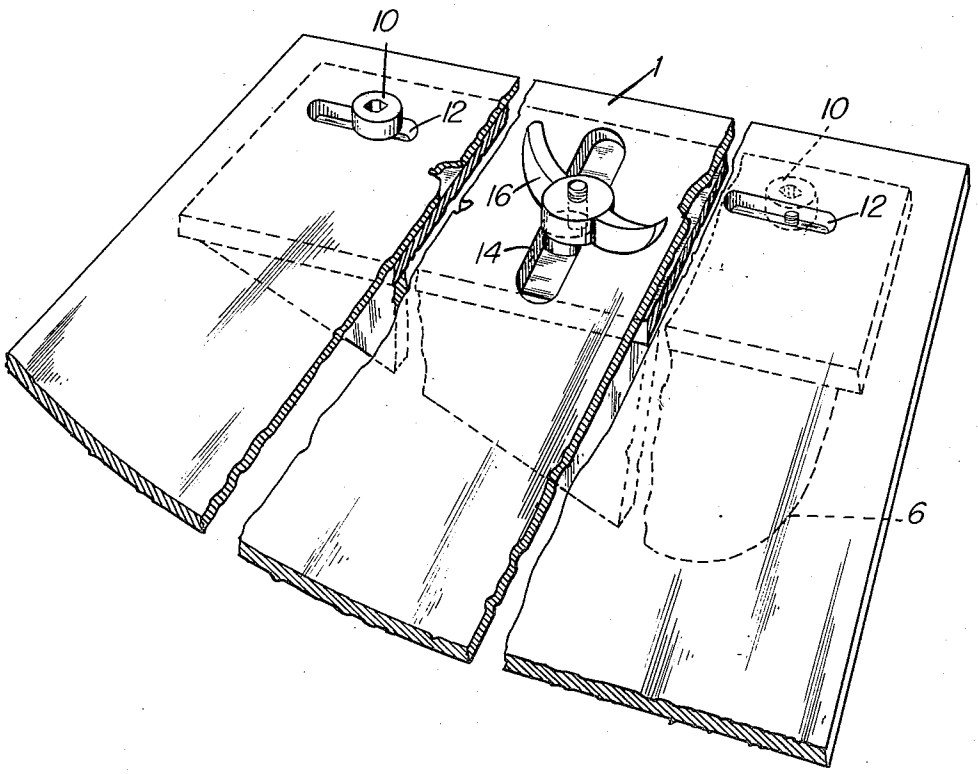
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FIG. 2



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SHEET REGISTERING APPARATUS

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Application November 9, 1949, Serial No. 126,269

Claims priority, application Great Britain November 12, 1948

5 Claims. (Cl. 271—58)

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The invention relates to sheet registering apparatus as frequently employed for registering sheets of paper or the like about to be taken into a printing or other machine. The invention is concerned with apparatus of the kind embodying a plate (known as a front plate) on which registration of the sheets is effected, two or more front lays or stops spaced apart aross the front plate and against which the front edges of the sheets are registered in turn and a side lay at one side of the front plate and against which one side edge of each sheet is registered.

It is known in apparatus of the above kind to provide means whereby the front lays may be adjusted in position towards and away from the printing or other machine relatively to the front plate. In one case the adjustment is effected by individual movements of the lays which enables the angle of the front edge of the sheet to be adjusted in respect to the machine as well as the distance of the edge from the machine. In another case the lays are carried on a bar or the equivalent and may be adjusted simultaneously by an angular or bodily movement of the bar. Each of these arrangements has disadvantages which it is an object of the present invention to reduce or overcome as well as to provide a particularly simple and effective means of adjustment.

According to the invention registering apparatus of the above kind is charatcerised by the feature that the front plate and the front and side lays are adjustable as a unit in a direction towards and away from the machine or angularly in the plane of the plate.

Preferably the apparatus includes side lay mechanism for drawing the sheets sideways up to the side lay and this mechanism is also adjustable as a unit with the front plate.

The characteristic feature of the invention ensures that the desired adjustment may be made without changing the relative position of the front and side lays.

One specific construction of apparatus according to the invention will now be described by way of an example and with reference to the accompanying drawings, in which Fig. 1 is a perspective view of the apparatus; and Fig. 2 shows on an enlarged scale the means for effecting adjustment of the front plate. In the apparatus shown in the drawings the front plate 1 carrying the front lays 2 constructed and arranged as described in my application Ser. No. 62,251, filed November 26, 1948, now abandoned, and side lays 3 (only one is shown) and also side lay mechanism 4 is supported by two frame members 6 beneath the plate, only one member 6 is shown the other being at the opposite side of the layboard. The plate 1 is slidable on the frame members 6 in its own plane for movement towards and away from roller 8 of the printing machine and also for angular movement. The plate 1 is secured to the frame members 6 by screws 10 passing through slots 12 in the plate and having heads engaging the surface of the plate. The slots 12 have sufficient length and side clearance from the screws to permit movement of the plate 1 as aforesaid when the screws 10 have been loosened. To effect the movements of the plate 1 there are two eccentrics pivotally supported by the frame members 6 and received within slots 14 in the plate 1 adjacent the two sides thereof (i. e. one on each side of the sheets considered in the direction of movement thereof). The slots 14 within which the eccentrics are received extend transversely to the direction of movement of the sheets so that rotation of the eccentrics (e. g. by a finger piece 16 or by a suitable key or handle) moves the plate 1 towards or away from the machine and differential rotation of the eccentrics causes an angular movement of the plate. Rods 18 and 20 are employed to operate the front and side-lay mechanisms and are adjustable in length at the couplings 22 to accommodate movement of the mechanisms with the plate 1.

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I claim:

1. In combination with a printing machine, sheet registering apparatus of the kind embodying a front plate on which sheets of paper to be fed to the printing machine are registered in turn, front lays against which the front edge of each sheet is registered, side lays against which a side edge of each sheet is registered, the front and side lays being secured to the front plate for movement therewith as a unit, a fixed supporting frame for and below the front plate, releasable screw means for clamping the front plate directly to the frame arranged to permit, when released, bodily and angular movements of the plate in its own plane, two pivoted eccentrics one at each side of the plate mounted for eccentric rotation in a slot extending in a direction cross-wise of the plate whereby rotation of either eccentric moves the associated side of the plate with the front and side lays as a unit in the direction towards the printing machine and manual means on the upper surface of the plate for effecting independent rotation of the eccentrics.

2. Sheet registering apparatus comprising a

front plate on which a succession of sheets are registered in turn before being fed to a machine operating on individual sheets, at least two front lays spaced apart across the front plate and against which the front edges of the sheets are registered, a side lay against which one side edge of each sheet is registered, the front and side lays being secured to the front plate for movement therewith as a unit, a fixed supporting frame, and means securing the unit to the frame in a manner which permits bodily adjustment of the unit as such in the direction of removal of the sheets and also angularly in the plane of the front plate.

3. Sheet registering apparatus comprising a front plate on which a succession of sheets are registered in turn before being fed to a machine operating on individual sheets, at least two front lays spaced apart across the front plate and against which the front edges of the sheets are registered, a side lay against which one side edge of each sheet is registered, the front and side lays being secured to the front plate for movement therewith as a unit, a fixed supporting frame for the unit on which the front plate rests and releasable clamping means by which the unit may be directly secured to the supporting frame, the clamping means when released permitting bodily adjusting movement of the unit on the supporting frame towards and away from the machine and also angularly in the plane of the front plate.

4. Sheet registering apparatus as claimed in claim 3 and including cam means by which adjustment of the unit as aforesaid may be effected, the cam means comprising at each side of the front plate a cam supported from the plate for independent rotation about a vertical axis and fitting in a slot in the front plate and provided with means by which the cam may be rotated, whereby independent rotation of either cam pivots the unit about the other cam and simultaneous rotation of both cams effects a bodily movement of the unit.

5. Sheet registering apparatus as claimed in claim 3 and including cam means by which adjustment of the unit as aforesaid may be effected, the cam means comprising at each side of the front plate a cam supported from the plate for rotation about a vertical axis and fitting in a slot in the frame and providing means by which the cam may be rotated, whereby independent rotation of either cam pivots the unit about the other cam and simultaneuos rotation of both cams effects a bodily movement of the unit.

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