J. O. HANKINS.

REGISTERING GAGE FOR PRINTING PRESSES.

APPLICATION FILED MAY 19, 1908.

924,985.

Patented June 15, 1909.

2 SHEETS—SHEET 1.

FIG. 1.

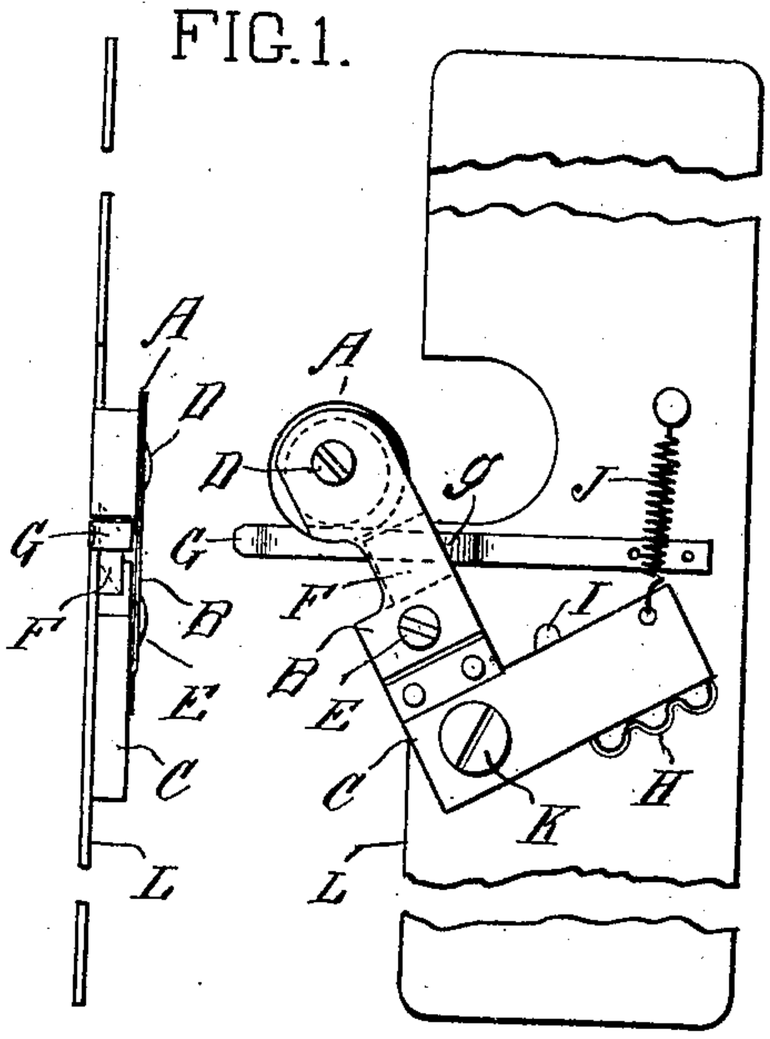


FIG. 2.

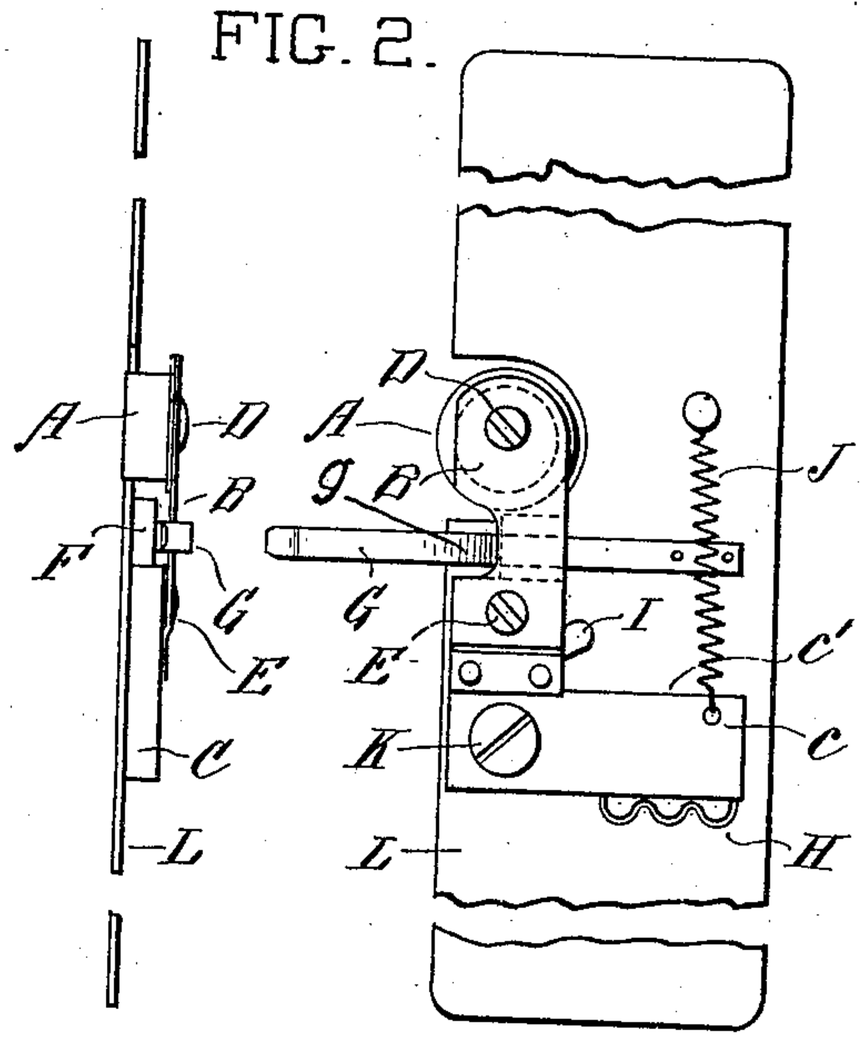


FIG. 3.

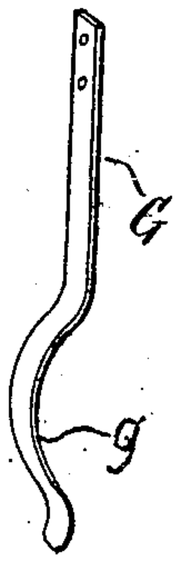


FIG. 4.

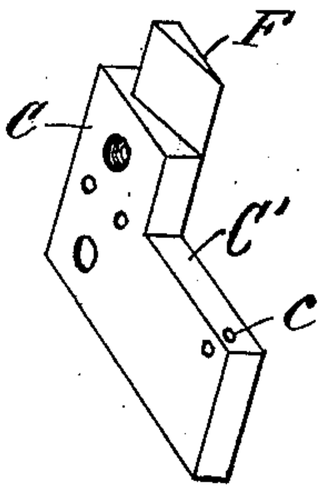


FIG. 5.

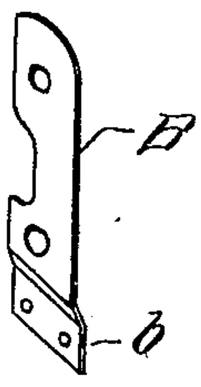


FIG. 6.

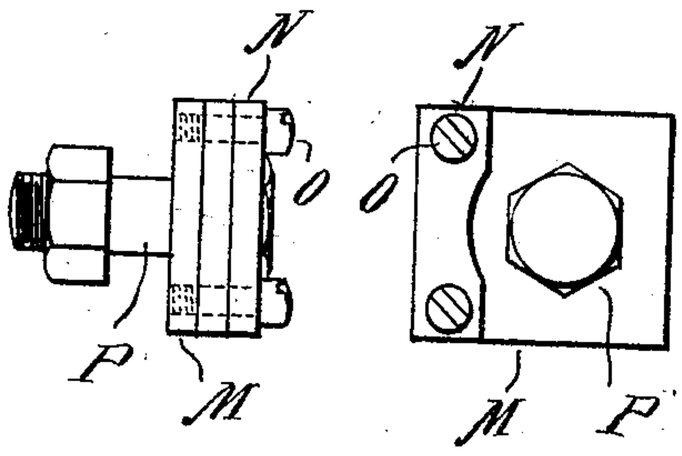
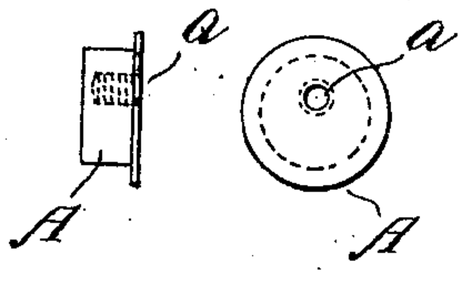


FIG. 7.



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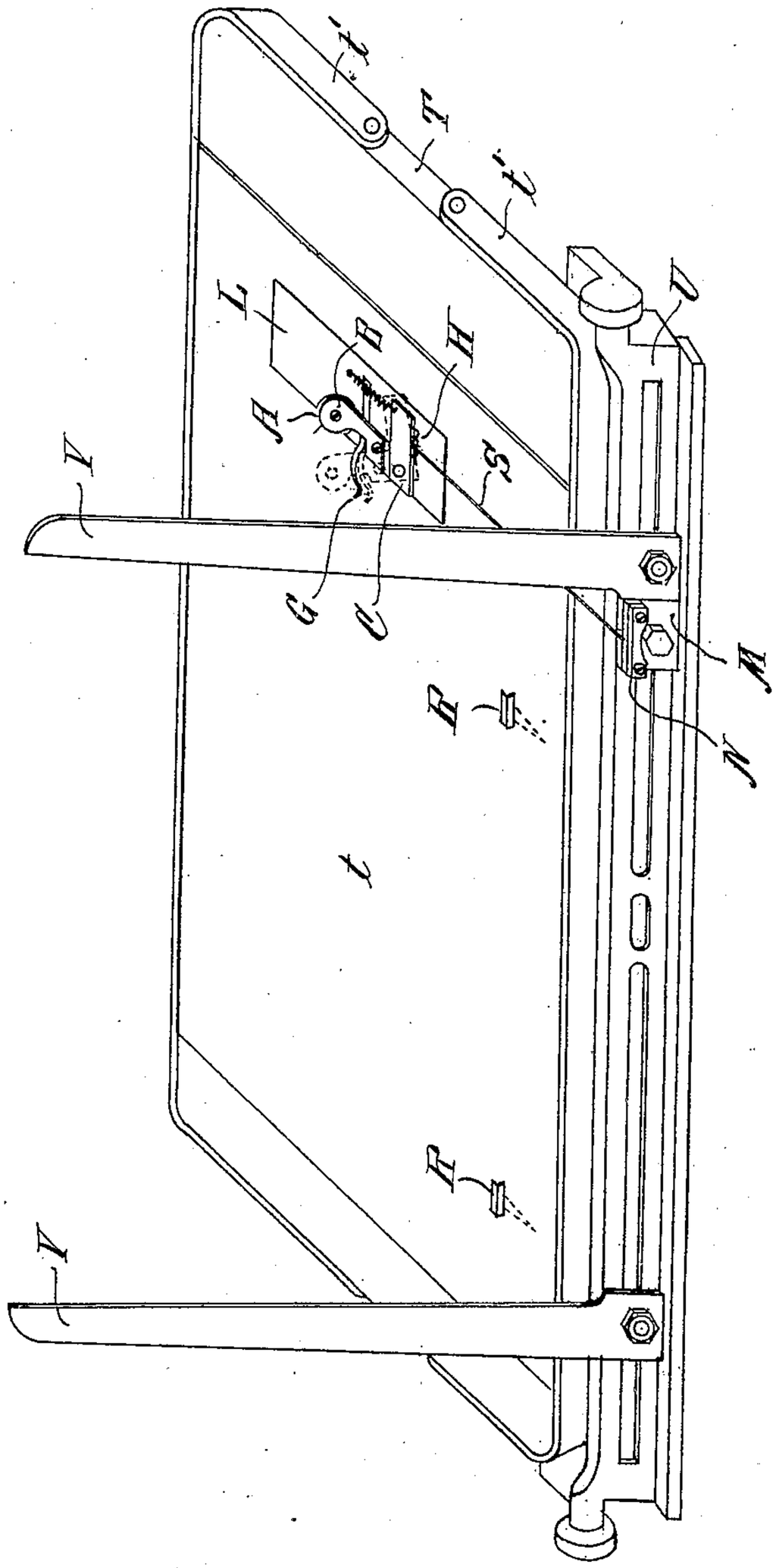
2 SHEETS—SHEET 2.

FIG. 8.



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UNITED STATES PATENT OFFICE.

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REGISTERING-GAGE FOR PRINTING-PRESSES.

No. 924,985. Specification of Letters Patent. Patented June 15, 1909.

Application filed May 19, 1908. Serial No. 433,720.

To all whom it may concern:

Be it known that I, JOHN O. HANKINS, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Registering-Gages for Printing-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled to the art to which it appertains to make and use the same.

My invention consists in the novel features hereinafter described reference being had to the accompanying drawings which illustrate one form in which I have contemplated embodying my invention and said invention is fully disclosed in the following description and claims.

The object of my invention is to provide a very simple and efficient device for securing the absolute registration of sheets fed to platen or circular printing presses, or for any other similar purpose where the accurate placing of a sheet upon a surface is to be accomplished.

In the accompanying drawings, Figure 1 represents a side elevation and top plan view of a device embodying my invention, the registering arm being shown in its outermost position. Fig. 2 represents also side elevation and top views of the device, the arm being shown in its retracted position. Figs. 3 to 5 inclusive are detail views of parts of the device detached. Fig. 6 shows a side elevation and plan of an adjustable clamp which I preferably employ when the device is used with a platen press. Fig. 7 shows a side elevation and plan of the adjustable paper engaging device carried by the registering arm. Fig. 8 is a perspective view of a platen for a job printing press, showing my improved device applied thereto.

Referring to the drawings L represents the base plate of the device, upon which is mounted the L-shaped registering arm C, the said arm being pivoted upon the stud K.

B represents a plate of spring metal having an offset portion *b* at one end, which is rigidly secured to the registering arm C, so as to form a continuation thereof, and E represents an adjusting screw passing through the plate B and into the arm C beneath it, to adjust the outer end of plate B, toward or from the surface on which the paper to be registered, is fed. The outer end of plate B carries upon its under side a circular paper engaging button or head A, which is secured to the plate by a screw D engaging a threaded aperture *a* disposed eccentrically therein, so that by loosening the screw and turning the button and then tightening the screw, an extremely fine adjustment of the device can be effected.

The laterally extending arm C′ of the registering arm C is provided with means (as the aperture *c*) for the attachment of one end of a spring J, the other end of which is attached to a fixed stud on the base plate L, and serves to draw the arm C′ normally against a fixed stop I, secured to the registering arm C and its extension B outward as shown in Fig. 1. The movement of the registering arm to move the paper or sheet, is, therefore, effected by the spring and I find that this is desirable as it gives the arm a very even movement even when the press is operated at high speed, and avoids jarring the sheet, which might cause it to be pushed further than intended. In order to further insure against the overfeeding of the paper or sheet by the registering arm, I provide a light tension spring, or finger G, which is secured at one end to the base plate L, and has its other end disposed so that it will normally rest upon the feeding surface or the sheet of paper thereon. This spring or finger has portions between its ends bent upwardly as shown at *g* to pass over a wedge shaped projection F carried by the arm C, and when the registering arm is retracted, as hereinafter explained, and as shown in Fig. 2, the wedge shaped projection F will pass beneath the spring G and raise it above the feeding surface.

In Fig. 8 I have shown my improved device applied to a platen press, such as is ordinarily termed a "job press". In this figure T represents the platen of usual construction provided with the usual covering *t* of paper or cardboard and bails *t′ t′* for holding the same in position. R, R represent bottom guides for the paper or other sheets, which may be of any usual or preferred construction. The base plate of my improved registering device is preferably secured to the platen or feeding surface by means of adhesive material such as glue, paste or cement, but it may be secured by other means, if desired. U represents the finger bar to which the fingers V, V are attached in the usual or preferred manner, the finger bar being slotted

to permit the lateral adjustment of the fingers. The finger bar and platen are connected by a hinge connection so as to provide for the relative movement of the one with respect to the other usual in this class of presses. M represents a laterally adjustable plate secured to the finger bar by a bolt P, and nut, so as to be adjusted to a position on line with the base plate L, and said plate M is provided with a plurality of superimposed clamping plates N, N (two being shown, see Fig. 6) held in position by screws O passing therethrough and engaging threaded apertures in plate M. S represents a flexible connection, which may be a cord or wire, having one end connected to the arm C′, of registering arm C and its other end clamped between the plates N, or between the lower plate N and plate M. The arm C′ is preferably provided with a plurality of loops H, (three being shown), said loops being conveniently formed in one piece, as from a piece of wire bent in the form shown, and affording three points of attachment for the connection S, at different distances from the pivotal axis of the registering arm. The adjustment of the connection S, into one or other of said loops H affords a means for varying the throw of the registering arm, by varying the distance that the arm C′ will be withdrawn from the stop I, and a further adjustment is afforded by shifting the other end of the connection S from one to another of the clamping plates N.

When the base plate L has been secured to the covering of the platen as before described the plate B can be adjusted by means of screw E so that the paper engaging head A will just sweep the surface of the platen covering, without undue friction but close enough to prevent the paper or sheets fed from getting under said head. The proper throw of the arm is then secured by adjusting the connection S in the required loop H, and in proper relation to the clamping plates N, and should the adjustments so obtained not be accurate enough the head A can be adjusted about its securing screw to move the paper into exactly the desired position. I prefer to employ a flexible connection S instead of a stiff metal link, as it obviates all vibration, and there is no danger of the sheet being jarred out of position. This result is further brought about by the use of the retaining finger G. In feeding the sheet is placed in its approximate position with the bottom edge engaging the guides R, R and its lateral edge beneath the retaining finger G. As the press closes, the relative movement of the finger bar and platen permits the spring J to draw arm C′ against the stop I and thereby move the registering arm C outward, as shown in Fig. 1. As the arm C moves outward the wedge F is withdrawn from beneath the engaged portion of the retaining finger G, allowing the finger to rest lightly on the sheet and act as a tension thereon to prevent over movement. The head A engages the edge of the paper or sheet or moves it laterally into exactly the desired printing position.

While I have shown my improved device applied to a job or platen press, I desire it to be understood that it can be used with any other form of press, by providing suitable means for imparting a reciprocating movement to the connection S, or otherwise oscillating the registering arm and that it can also be used in connection with any other devices for feeding or operating upon sheets, where its use is desirable or convenient.

What I claim and desire to secure by Letters Patent is:—

1. A registering device for printing presses, comprising among its members, a movable registering arm, and means for supporting it in position to move in a plane parallel to that of the tympan, a part carried by said arm, movable toward and from the tympan, and provided with a sheet engaging device, and an adjusting device engaging said movable part, for adjusting it toward or from the tympan, substantially as described.

2. A registering device for printing presses comprising among its members, a base plate, a registering arm pivotally connected thereto and movable in a plane parallel with that of the base plate, a spring arm secured to said registering arm, and provided with a sheet engaging part, said spring arm being movable toward and from the plane of the tympan, and an adjusting device for engaging said registering arm and said spring arm for adjusting said spring arm and said sheet engaging device toward and from the plane of the tympan, substantially as described.

3. The combination with the base plate, of a registering arm pivotally mounted thereon, an adjustable part carried by said arm, a cylindrical sheet engaging device mounted eccentrically on said adjustable part, and adjustable revolubly in respect thereto, and means for actuating said registering arm, substantially as described.

4. The combination with the base plate, of a registering arm pivotally mounted thereon movable in a direction parallel with the plane of the base plate, and provided with a sheet engaging portion, a tension device for engaging the sheets to be registered and a device operated by said registering arm for moving said tension device in a direction perpendicular to and away from the plane of the base plate, to throw it out of operative position when the registering arm is retracted and means for actuating said registering arm, substantially as described.

5. The combination with the base plate, of a registering arm pivotally mounted thereon, and provided with a sheet engaging portion, a tension device, for engaging the sheets to

be registered, a wedge shaped projection carried by the registering arm, for engaging and elevating said tension device when the registering device is retracted and means for actuating the registering arm, substantially as described.

6. The combination with a base plate, of a registering arm pivotally mounted thereon, a spring plate secured to said arm, a cylindrical sheet engaging head, mounted eccentrically and adjustably on said plate, means for adjusting said spring plate and head toward and from the plane of the base plate, a stop for limiting the movement of said arm in a direction to move the sheets, a spring normally holding said arm in engagement with said stop, a tension spring for engaging the sheets to be registered, a wedge shaped projection carried by said registering arm for elevating said tension spring out of operative position when the registering arm is retracted against the pressure of said spring, and actuating means for retracting said registering arm, substantially as described.

7. The combination with the base plate, of a registering arm pivotally mounted thereon, a revolubly adjustable eccentric sheet engaging head carried by said arm, a stop for said arm, a spring normally holding said arm in engagement with said stop, an actuating part, and a flexible connection connected to said registering arm and to said actuating part, said flexible connection being adjustable at one end longitudinally of itself, with respect to the actuating part, and being adjustable at the other end toward and from the pivotal axis of said registering arm, substantially as described.

8. A registering device for printing presses, comprising among its members, a movable registering arm, actuating means therefor, an adjustable sheet engaging part pivotally mounted on said registering arm, and having a curved edge eccentric to said point of pivoting, and means for securing said part in its adjusted positions, substantially as described.

9. A registering device for printing presses, comprising among its members, a movable registering arm, means for supporting said arm so that it can move in a plane parallel to the plane of the tympan, a part secured to said registering arm, and movable with respect thereto toward and from the plane of the tympan, a sheet engaging device having a curved sheet engaging edge, pivotally mounted eccentrically to said curved edge, upon said part, means for securing said sheet engaging device rigidly in adjusted position, and means for adjusting said movable part, and the sheet engaging device toward and from the plane of the tympan, substantially as described.

10. A registering device for printing presses comprising among its members a base plate, a pivoted registering arm, movable in a plane parallel to that of the base plate, a spring arm rigidly connected at one end to said registering arm and movable at the other end toward and from the plane of the base plate, an eccentric sheet engaging device carried by the free end of said spring arm, and rotatably supported thereon, means for securing said eccentric device in adjusted position, an adjusting device for adjusting the free end of said spring arm and said sheet engaging device toward and from the plane of the base plate, and operating devices actuating said registering arm, substantially as described.

In testimony whereof I affix my signature, in the presence of two witnesses.

JOHN O. HANKINS.

Witnesses:
W. H. ADAMS,
H. R. POLLARD, Jr.