2 Sheets--Sheet 1.

S. D. TUCKER.

Feed Gages for Printing-Presses.

No. 168,686. Patented Oct. 11, 1875.

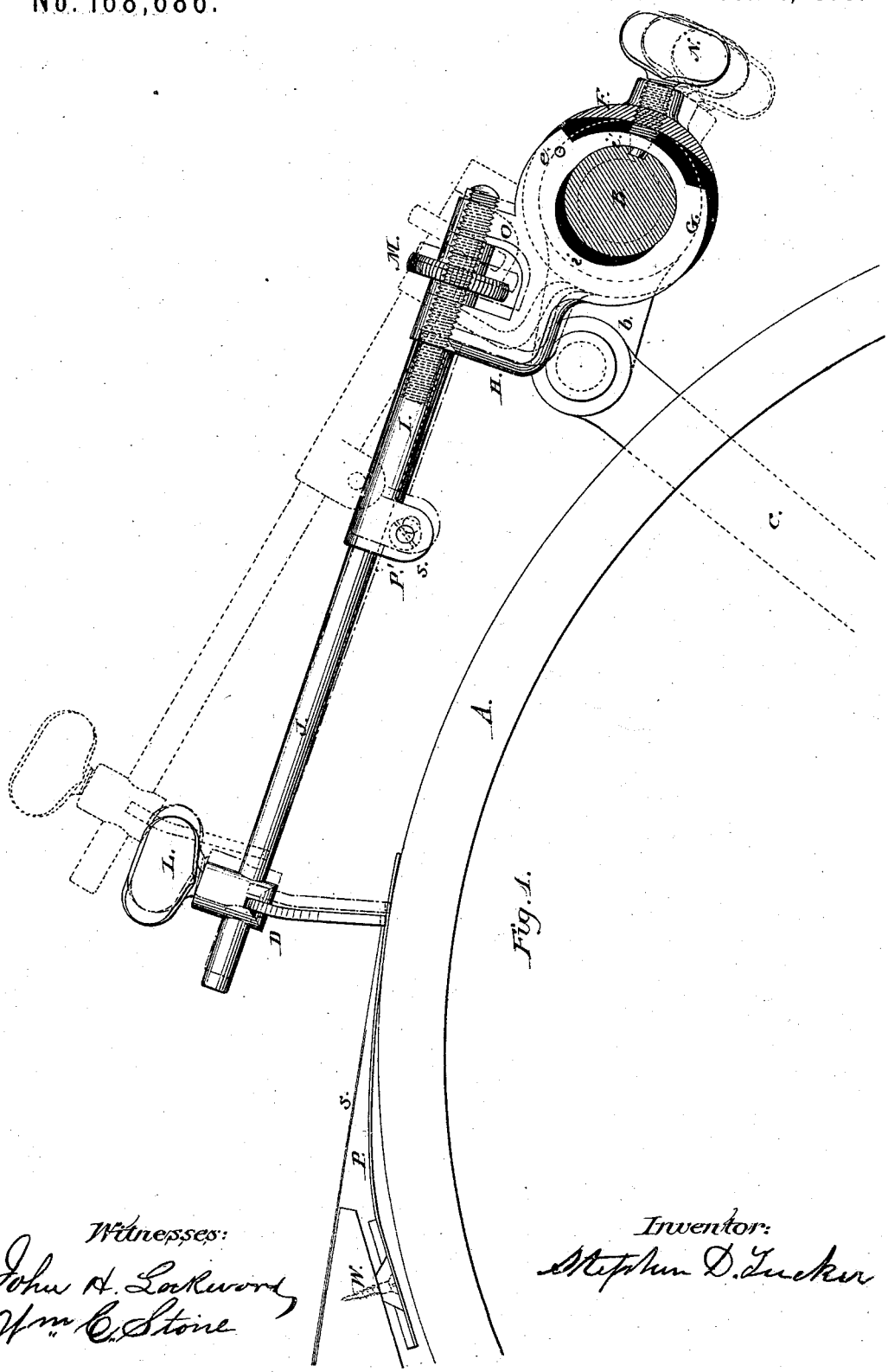

Fig. 1.

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Fig. 2.

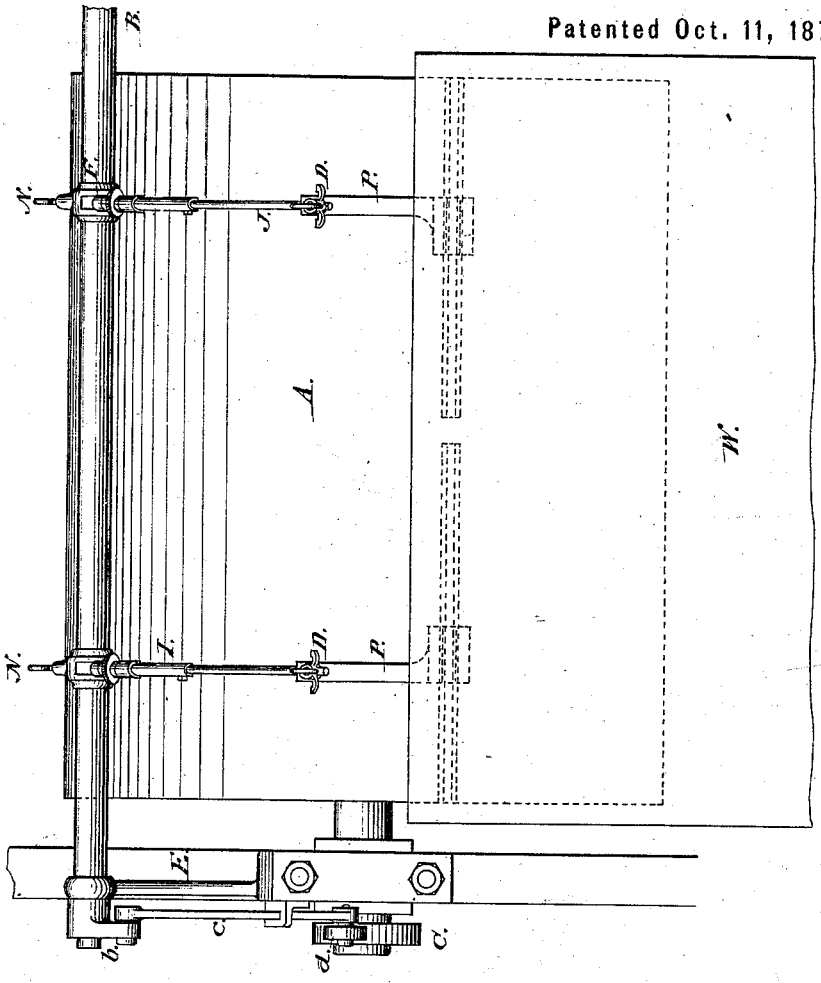
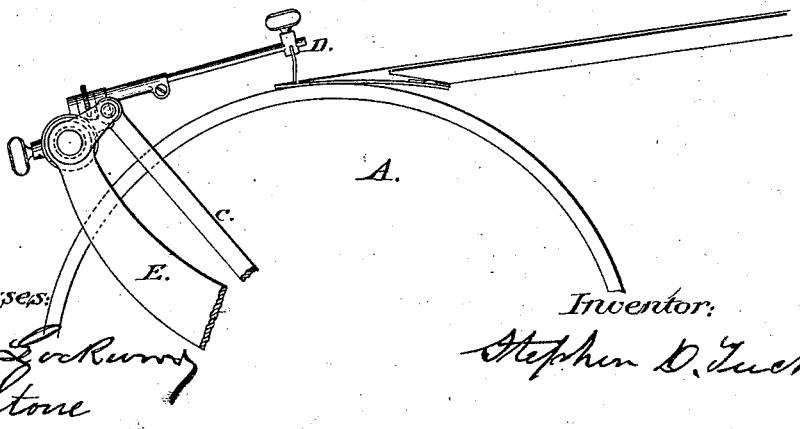


Fig. 3.



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UNITED STATES PATENT OFFICE.

STEPHEN D. TUCKER, OF NEW YORK, N. Y.

IMPROVEMENT IN FEED-GAGES FOR PRINTING-PRESSES.

Specification forming part of Letters Patent No. **168,686**, dated October 11, 1875; application filed June 23, 1875.

CASE A.

To all whom it may concern:

Be it known that I, STEPHEN D. TUCKER, of New York city, N. Y., have invented an Improvement in Feed-Gages for Printing-Presses, of which the following is a specification:

In the accompanying drawings, forming part of this specification, in which like letters of reference indicate the same parts, Figure 1 is a side view of the gage, partly in section, showing the mode of its attachment to the operating-shaft, and its relation to the cylinder and feed-table. Fig. 2 is a top view, showing a set of gages mounted in position, and the mode of operating the same. Fig. 3 is an end view of a portion of a printing-press, showing the gage in position, and the means for operating it.

In securing the proper register of sheets fed to a printing-press their front edges are adjusted to or aligned against the faces of several gages or stops contiguous to the edge of the feed-table, which are automatically lowered within and raised out of the path or line of travel of the sheet as it is fed against them or carried into the press. These gages usually rest upon thin metal plates projecting from the edge of the feed-table, and curved to conform to the arc of the cylinder, which provide a support for the sheet, and at the same time operative space for the gripers. It is necessary for the gages to rise in order not to impede the passage of the sheet when it is seized by the gripers and carried around the cylinder, and if the sheet be placed in too close contact with the gages they are liable, in rising, to lift the front edge of the sheet, and thus displace it and destroy the register. The object, then, of my invention is to obviate this difficulty in the operation of these gages; and it consists in means which provide for a state of rest while the sheet is being placed or registered against the gages; next, a retiring movement away from the edge of the sheet, and then a rising movement to clear the path of the sheet when it is carried into the press, together with reverse movements necessary to again bring the gages into position to register the succeeding sheets. These gages are adapted to the common constructions of presses, and are operated by the well-known means for vibrating the gages of rotary presses, such as are shown in Figs. 2 and 3, where the gage-shaft B, journaled in brackets E, is rocked by a crank, *b*, and rod *c*, connecting it with a shaft carrying a friction-roller, *d*, resting upon a cam, C, fast upon and moving with the cylinder-shaft. Commonly the gages D are secured by their hubs fast to their rock-shaft, and partake wholly of its movements, being thus rocked in an arc to and from the periphery of the cylinder, rubbing against the edge of the sheet as they rise, and not unfrequently so raising it with them that the register is destroyed. This interference with the sheet is entirely avoided by causing the gage to recede a little (see dotted lines, Fig. 1) before its upward movement begins. To accomplish this the base G of the gage-arm is perforated with an opening of greater diameter than the rock-shaft, and which is preferably elliptical, through which said shaft passes. It is hung by a pivot, *e*, between the sides of the bifurcated hub F, which is secured fast to the shaft B by the set-screw N. The oblong or elliptical opening in its base permits a considerable rocking motion of the gage-arm upon the shaft, against which the opposite sides *i i'* of the opening alternately impinge as it is rocked upon the pivot *e*, thus forming stops limiting its independent motion thereon in either direction, while the surface *i* also becomes a fulcrum, through which the gage-arm is raised vertically. The rear side is slotted, to embrace the set-screw N and permit a free movement. From an arm, H, rising from the front side of the base G, projects a hollow arm or sleeve, I, in which the gage-arm J is adjusted longitudinally by means of an actuating-nut, M, seated between the arm H and a companion arm, O, rising from the base, which engages its screw-threaded end. The position of the gage-arm is secured against displacement by the jar occasioned by the movements of the press by means of a set-screw, *s*, which presses together the sides of the spring clamping-jaws P'. Upon this arm J the gage D is hung, so as to be adjustable longitudinally,

being fixed in any determined position thereon by a set-screw, L.

The operation is as follows: The gages, in their normal position, rest upon the thin plates P, and the sheet from the feed-table W is laid against their front sides or faces. Just before the gripers on the cylinder seize the sheet the rearward vibration of the rock-shaft B takes place, which movement carries the gage-arm rearward by means of the pivot or hinge *e*, as shown in dotted lines of Fig. 1, until the inner periphery *i* of the opening in its base G impinges against the surface of the rock-shaft, when such movement ceases, and it partakes of the circular motion of the rock-shaft, and is raised upward, as appears from the dotted lines of Fig. 1, to clear it from the path of the sheet. After the sheet has passed the motion of the rock-shaft is reversed, and the gage descends until it rests upon the thin plate P, when, the motion of the rock-shaft being continued, the gage-arm is carried forward by the motion now imparted to it through its connecting-pivot *e*, until the periphery *i* impinges against the shaft, at which time the gage has reached its proper position to register the sheet, and the parts are in position to reverse and repeat the operation described.

What I claim is—

1. A feed-gage having an elliptical opening through its base, in combination with its actuating rock-shaft, to a hub upon which it is so hung that it shall be capable of moving into positions relative thereto, fixedly determined by the periphery of its opening, to produce its horizontal reciprocation, and afford a seat to secure its vertical motion, substantially as set forth.

2. The combination of a feed-gage, whose base is provided with an elliptical opening, with a rock-shaft, to which it is hung by a pivot, whereby both horizontal and vertical reciprocations are imparted to it, substantially as shown and described.

3. In combination with the screw-threaded arm J, the sleeve I, arms O H, and adjusting-nut M, substantially as described.

4. The screw-threaded arm J, sleeve I, adjusting-nut M, and clamping-jaws P′, combined substantially as described.

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Witnesses:
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