(No Model.) 3 Sheets—Sheet 1.

T. A. BRIGGS.

PAPER GAGING DEVICE FOR PLATENS.

No. 507,986. Patented Nov. 7, 1893.

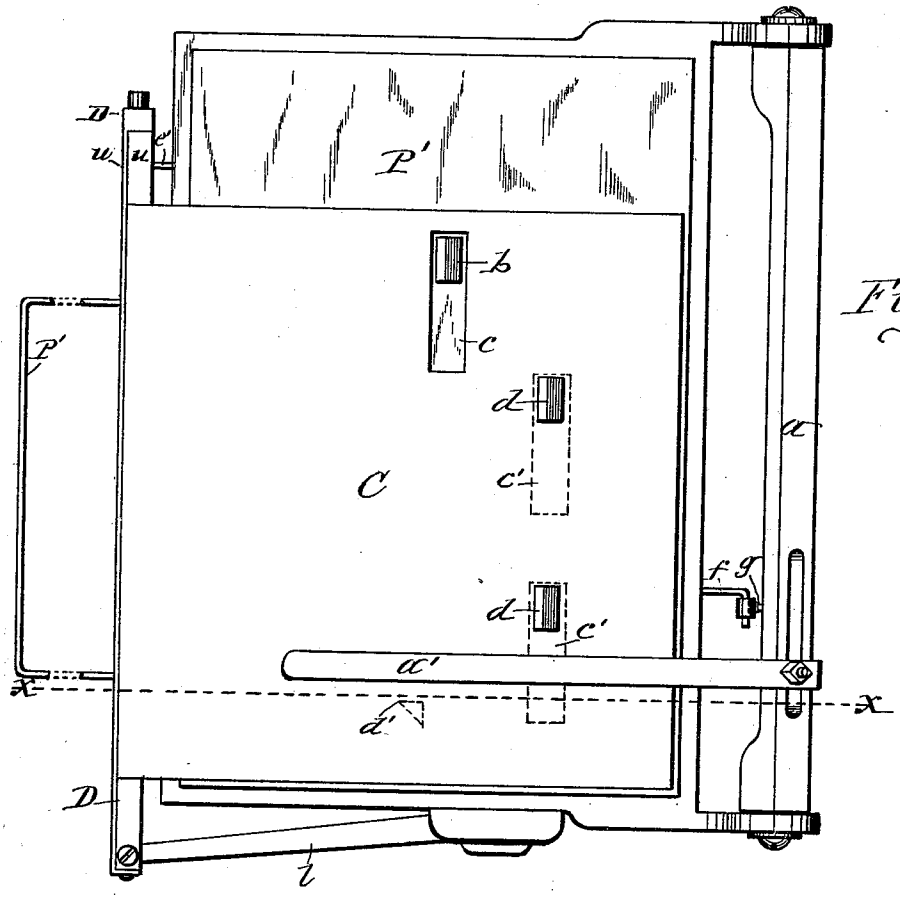

Fig. 1

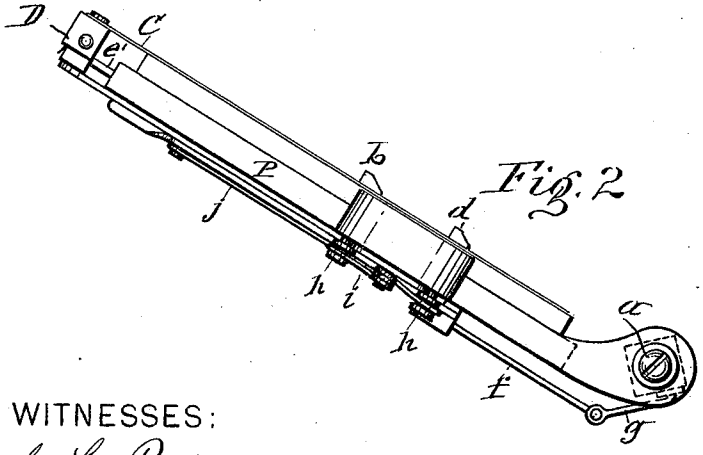

Fig. 2

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(No Model.) 3 Sheets—Sheet 2.

T. A. BRIGGS.

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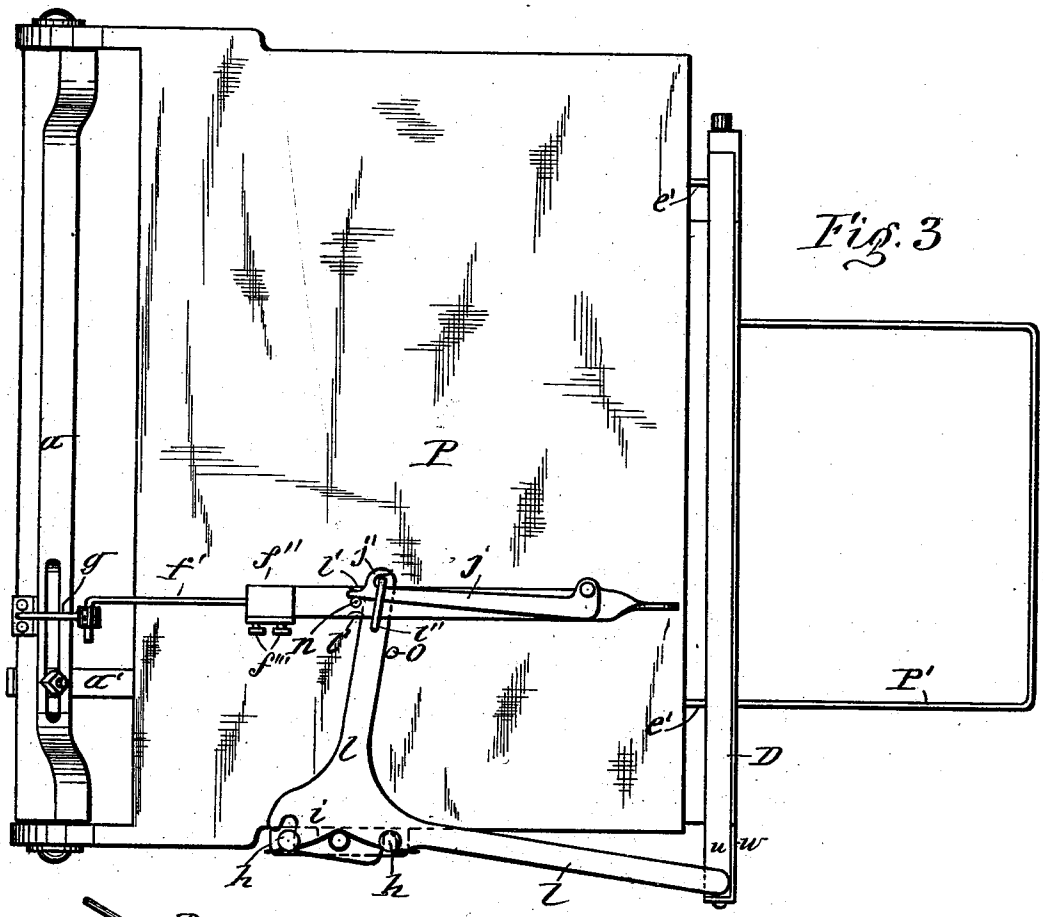

Fig. 3

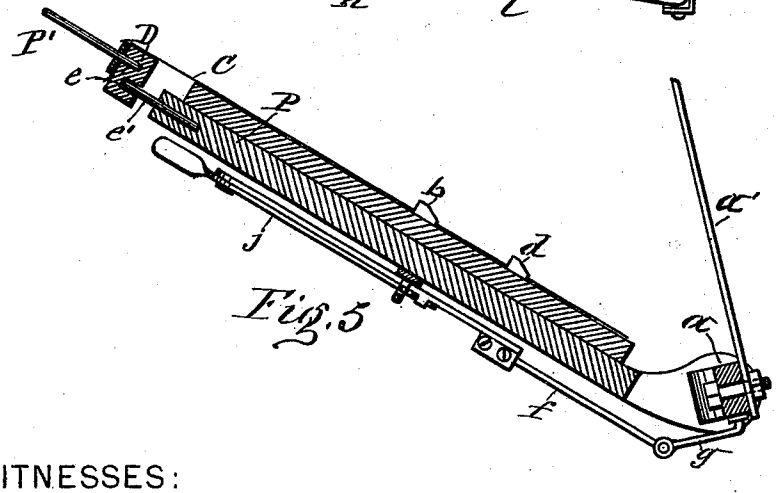

Fig. 5

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T. A. BRIGGS.

PAPER GAGING DEVICE FOR PLATENS.

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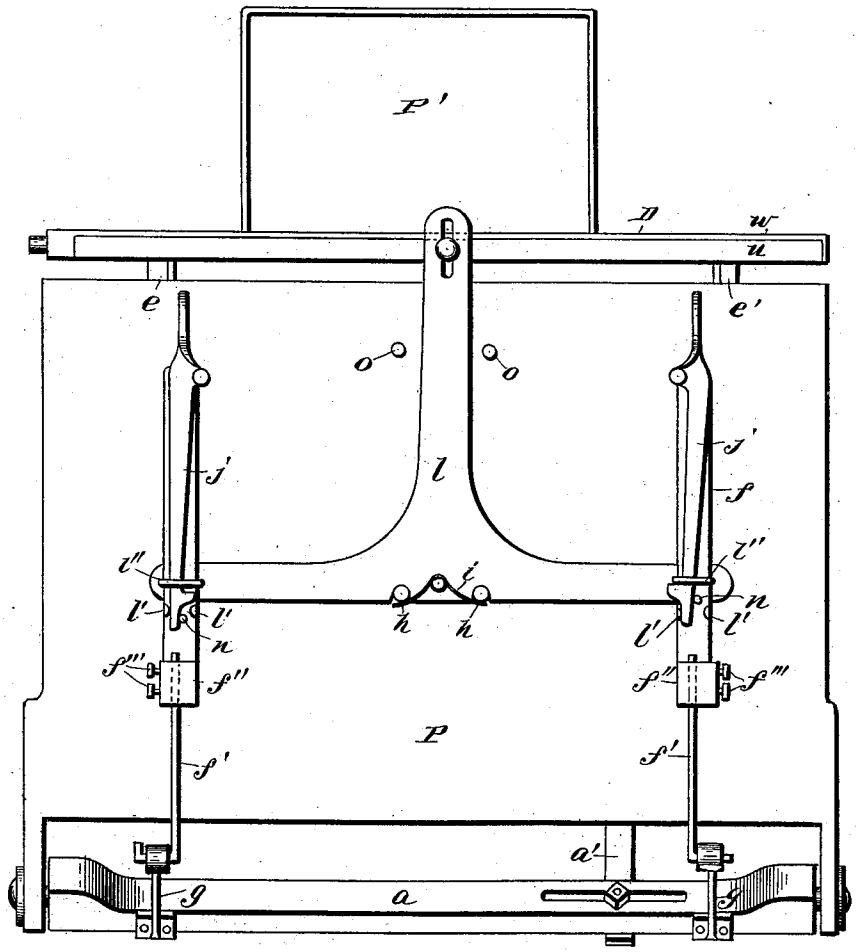
Fig. 4.



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THE NATIONAL LITHOGRAPHING COMPANY,
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UNITED STATES PATENT OFFICE.

THOMAS A. BRIGGS, OF ARLINGTON, MASSACHUSETTS.

PAPER-GAGING DEVICE FOR PLATENS.

SPECIFICATION forming part of Letters Patent No. 507,986, dated November 7, 1893.

Application filed August 10, 1892. Serial No. 442,646. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. BRIGGS, of Arlington, in the county of Middlesex, in the State of Massachusetts, have invented new and useful Improvements in Paper-Gaging Devices for Platens, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My present invention is more particularly designed for the class of printing presses designated "platen presses."

The object of the invention is to provide the platen with automatic paper-gaging devices for placing the paper or card in proper position for receiving the impression of the type secured to the bed of the press. By the employment of said gaging devices, the operation of feeding the paper or cards to the press is greatly facilitated and may be performed by unskilled and cheap labor. And to that end the invention consists chiefly in the combination, with the platen, of a gage or gages fixed thereto, a paper-carrying sheet mounted movably on the platen and guided transversely thereon, and one or more paper guides fixed to said sheet to carry the paper or card to the aforesaid gages. Said sheet, even when moved by the hand of the operator, greatly facilitates the feeding of the paper or card to the press. And the invention also consists in novel devices for automatically operating the aforesaid paper-carrying sheet, all as hereinafter more fully described and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a face view of a platen provided with my invention. Fig. 2 is a side view of the same. Fig. 3 is a plan view of the back of said platen. Fig. 4 is a plan view of the automatic paper gaging devices arranged for gaging toward either one or the other side of the platen. Fig. 5 is a transverse section on line *x*, *x*, in Fig. 1.

Similar letters of reference indicate corresponding parts.

P— represents the platen which is rocked to and from the type-bed of the press in the usual and well known manner not necessary to be here shown.

P′— denotes the tympan which is also applied to the platen in the usual manner and only shown in Fig. 1 of the drawings.

a— denotes the gripper-shaft which is pivoted to ears on the lower end of the platen and receives an oscillatory motion about its own axis during the movement of the platen and thereby causes the gripper —*a*′— to bear on the edge of the paper or card to be imprinted and thus hold the same in its position on the platen during the approach of the latter to the bed of the press. In the retreat of the platen from the bed the gripper is automatically lifted to release the imprinted paper or card and allow the same to be removed from the platen, and another paper or card to be placed thereon. All of said operations and the means for producing the same are well known to persons conversant with that class of printing presses.

b— represents a side-gage which is affixed to the tympan in such a position in relation to the form on the type-bed, that, by placing against said gage the side edge of the paper or card to be imprinted, the latter is in line with the form secured to the type-bed.

Upon the tympan I mount movably a paper-carrying sheet —C— which is guided transversely and provided with a slot —*c*— through which the gage —*b*— protrudes, said slot being of sufficient length to allow the sheet —C— to freely move laterally on the tympan. The top surface of the sheet —C— is provided with suitable projections or bottom-gages —*d*—*d*— which are arranged to receive the bottom edge of the paper or card to be imprinted, and support the same in proper position in relation to the form on the press-bed.

In feeding the paper to the press the operator lays said paper upon the sheet —C— with the lower edge of the paper resting against the gages —*d*—*d*. Then by moving the sheet —C— laterally the paper to be imprinted is carried with it and brought to bear with its side edge against the side gage —*b*—, which arrests the movement of said paper and aligns the same in relation to the form on the press-bed. Hence the operator is relieved of the care of placing by hand the paper or card in proper position against the side-gage, and therefore the operation of feeding the paper

or cards to the press is facilitated and can be performed by cheap labor.

It will of course be understood that the gage and gages are not attached directly to the platen, but to the tympan.

I do not limit myself to the specific arrangement of the gages as aforesaid, inasmuch as the bottom-gages —*d*—*d*— may be attached to the platen or more properly the tympan on the platen, and the sheet —C— provided with elongated apertures —*c'*— for the protrusion of said gages as indicated by dotted lines in Fig. 1 of the drawings. The paper or card to be imprinted has sufficient frictional hold on the sheet —C— to move with the same and slide on the gages —*d*—*d*—, or, in order to insure a positive movement of the paper or card, the sheet —C— may be provided with a side-gage —*d'*— which by contact with the side edge of the paper or card pushes the same along with the sheet —C. Said side-gage may be readily formed by simply making a V-shaped incision in the sheet and bending the V-portion up from the plane of the sheet. For guiding the sheet —C— I prefer to employ the clamp —D— consisting of two straight stiff bars —*u*—*u'*— detachably secured to each other and holding the end of the sheet between them. Said clamp extends along the free end of the platen and is provided with a longitudinal groove —*e*— by which it rides on pins —*e'*— projecting from the end of the platen as shown in Fig. 5 of the drawings. The clamp is thus allowed to slide transversely in relation to the platen. For moving the said clamp automatically with the movement of the platen I fulcrum on the platen a bell-crank lever —*l*—, one end of which is connected to the clamp —D—, and to the opposite end of said lever is connected the push-bar —*f*— which may be actuated by any moving part of the printing press, but I prefer to connect it to a crank —*g*— secured to the gripper-shaft —*a*—, the oscillation of which imparts a reciprocating motion to the push-bar which oscillates the lever —*l*— and thereby reciprocates the clamp —D. In the first movement of the clamp in one direction the sheet —C— carries the paper or card to be imprinted to the side-gage —*b*— by which it becomes aligned as hereinbefore stated. The gripper —*a'*— being then brought to bear on the said paper or card in the usual manner, it holds the same in position while the sheet is receiving its impression. In order to sustain the lever —*l*— more positively in its normal position, I place the lever —*l*— on two fulcrums —*h*—*h*— and hold it thereon by means of a spring —*i*— secured at its central portion to the lever and passing with its ends across the fulcrums at the sides opposite to the bearings of the lever. Said spring thus sustains the lever in its normal position, and to positively arrest the movement of the lever when the paper in transit is brought up against the side-gage —*b*—, I employ a stop —*o*— projecting from the back of the platen and in such a position as to cause the lever to come in contact therewith when moved the desired distance. The spring connection of the lever —*l*— allows the gripper-shaft —*a*— to continue its motion sufficiently to bring the gripper to bear on the adjusted sheet while held at rest, and also allows the gripper to be raised from the sheet before the lever is set in motion toward its normal position. The push-bar —*f*— actuates the lever —*l*— only in one direction, and in order to allow the thrust of the lever to be adjusted so as to move the sheet-holding clamp —D— to a greater or less degree, I connect the said push-bar to the crank —*g*— by means of a bar —*f'*— hooked at one end in an eye on the crank and passing with its opposite end through a sleeve —*f''*— on the push-bar and adjustably confined therein by set-screws —*f'''*—*f'''*—. The push-bar passes through a stirrup —*l''*— attached to the lever and is guided thereby.

To allow the printing press to be operated without the described automatic gaging devices when desired, I provide means for throwing the push-bar —*f*— out of engagement with the lever —*l*— and for that purpose I preferably employ the latch —*j*— which is pivoted at one end to the push-bar and passes with the opposite end through the stirrup —*l''*— and is provided with a lateral projection —*j'*— which is adapted to engage the stirrup when the latch is swung to one side, and release said stirrup when the latch is swung to the opposite side. The movement of the latch is limited by lips —*l'*—*l'*— projecting vertically from the side edges of the push-bar, between which lips the end of the latch plays. A small conical boss —*n*— on the push-bar central between the lips —*l'*—*l'*— partially locks the latch in either of its aforesaid positions. By the employment of the described latch I avoid the use of detachable locking devices which are liable to be lost.

When it is desired to have the automatic gaging-devices adapted to gage toward either side of the platen, I employ the three-armed lever —*l*— shown in Fig. 4 of the drawings, which lever is fulcrumed at its center in the manner hereinbefore described, and has its rearwardly extending arm connected to the clamp —D—, and to each of its laterally extending arms is connected one of the push-bars —*f*— which is movable longitudinally thereon and provided with the latch —*j*— by which it is adapted to engage and transmit motion to the lever. Each of said push-bars is connected to and receives motion from a crank attached to the gripper-shaft —*a*. The push-bar —*f*— is sustained on the under side of the platen by the lever —*l'*— which is held in a plane parallel with the platen by the connection of said lever to the clamp —D— which is maintained in a uniform plane.

To adapt the platen to carry sheets of paper which are longer than the platen, I provide the latter with an extension —P'— de-

tachably connected thereto and preferably formed of wire bent into the shape of three sides of a rectangle and inserted with its ends into sockets in the clamp —D.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the platen, and tympan of a side-gage or gages fixed to the tympan, a paper-carrying-sheet mounted movably on the platen and guided transversely thereon, and one or more bottom gages fixed to said sheet to carry the paper to the aforesaid side-gage or gages as set forth.

2. The combination with the platen, and tympan of a side-gage fixed to the tympan, a paper-carrying sheet mounted movably on the platen and guided transversely thereon and provided with an elongated aperture for the protrusion of the aforesaid gage, and bottom-gages projecting from the face of said sheet to carry the paper to the aforesaid side-gage as set forth.

3. The combination, with the platen, and tympan of a side-gage or gages fixed to the tympan, a paper-carrying sheet mounted movably on the platen, and having bottom-gages affixed to it, and a clamp carrying said sheet and connected to the platen movable transversely thereof as set forth.

4. The combination with the rocking platen and tympan, of one or more side-gages fixed to the tympan, a paper-carrying sheet mounted movably on the tympan, one or more bottom gages on said sheet, a clamp extending along the free end of the platen and carrying the aforesaid sheet, and a lever actuated by the rocking of the platen and transmitting reciprocating motion to said clamp as set forth.

5. The combination, with the platen, and tympan of one or more side-gages fixed to the tympan, a paper-carrying sheet mounted movably on the tympan, bottom gages fixed to said sheet, a clamp extending along the free end of the platen and having the aforesaid sheet secured to it, a lever pivoted to the platen and connected to the aforesaid clamp, and a bar actuated by the motion of the platen and transmitting motion to the aforesaid lever as set forth.

6. The combination, with the platen, and tympan and one or more gages attached to the tympan, of a sheet mounted movably on said tympan, one or more gages on said sheet, a clamp extending along the free end of the platen movable transversely thereof and having the aforesaid sheet attached to it, a lever fulcrumed on the platen, a spring sustaining the lever in its normal position, a push-bar actuated by the motion of the platen and transmitting motion to the lever, and a stop on the platen limiting the motion of the lever as set forth.

7. In combination with the rocking-platen and tympan and gripper-shaft pivoted to the platen, a gage or gages on the tympan, a paper-carrying sheet mounted movably on the tympan and provided with paper-gages, a clamp carrying said sheet and connected to the end of the platen movable transversely thereof, a lever fulcrumed on the platen and connected at one end to the aforesaid clamp, a crank secured to the aforesaid gripper-shaft, and a push-bar transmitting motion from said crank to the aforesaid lever, substantially as set forth.

8. In combination with the platen and tympan and gripper-shaft, a gage or gages on the tympan, a sheet mounted movably on the tympan and provided with gages, a clamp connected to the end of the platen movable transversely thereon and carrying the aforesaid sheet, a lever fulcrumed on the platen and connected at one end to the clamp, a crank on the gripper-shaft, a push-bar connected to said crank, and a latch on the push-bar adapted to engage and release the aforesaid lever, substantially as set forth.

9. The combination with the platen and tympan and gripper-shaft, of a clamp extending along the free end of the platen and movable transversely thereon, a sheet connected to said clamp and lying upon the tympan, gages on the tympan and the aforesaid sheet, a three-armed lever fulcrumed at opposite sides of its center to the platen and having its rearwardly extending arm connected to the aforesaid clamp, a spring holding the lever on its fulcrums, push-bars connected longitudinally movable to the laterally extending arms of the aforesaid lever, latches on the push-bars adapted to engage and release the lever-arms, and cranks connecting said push-bars to the gripper-shaft, substantially as set forth.

10. In combination with the lever —*l*—, the push-bar —*f*— provided with the lips —*l'*—*l'*—, and boss —*n*— the latch —*j*— pivoted to said push-bar and playing between the aforesaid lips and provided with the projection —*j'*—, and the stirrup —*l''*— on the lever guiding the push-bar substantially as described and shown.

11. In combination with the platen and gripper shaft —*a*—, the lever —*l*—, clamp —D—, sheet —C—, the crank —*g*—, push-bar —*f*— and the bar —*f'*— connected at one end to said crank and at the opposite end longitudinally adjustable to the push-bar as and for the purpose set forth.

In testimony whereof I have hereunto signed my name this 27th day of July, 1892.

THOMAS A. BRIGGS. [L. S.]

Witnesses:

WILLIAM H. H. TUTTLE,

ARTHUR W. SIM.