(No Model.) 3 Sheets—Sheet 1.

J. BROOKS.

REGISTERING GAGE FOR PRINTING PRESSES.

No. 423,661. Patented Mar. 18, 1890.

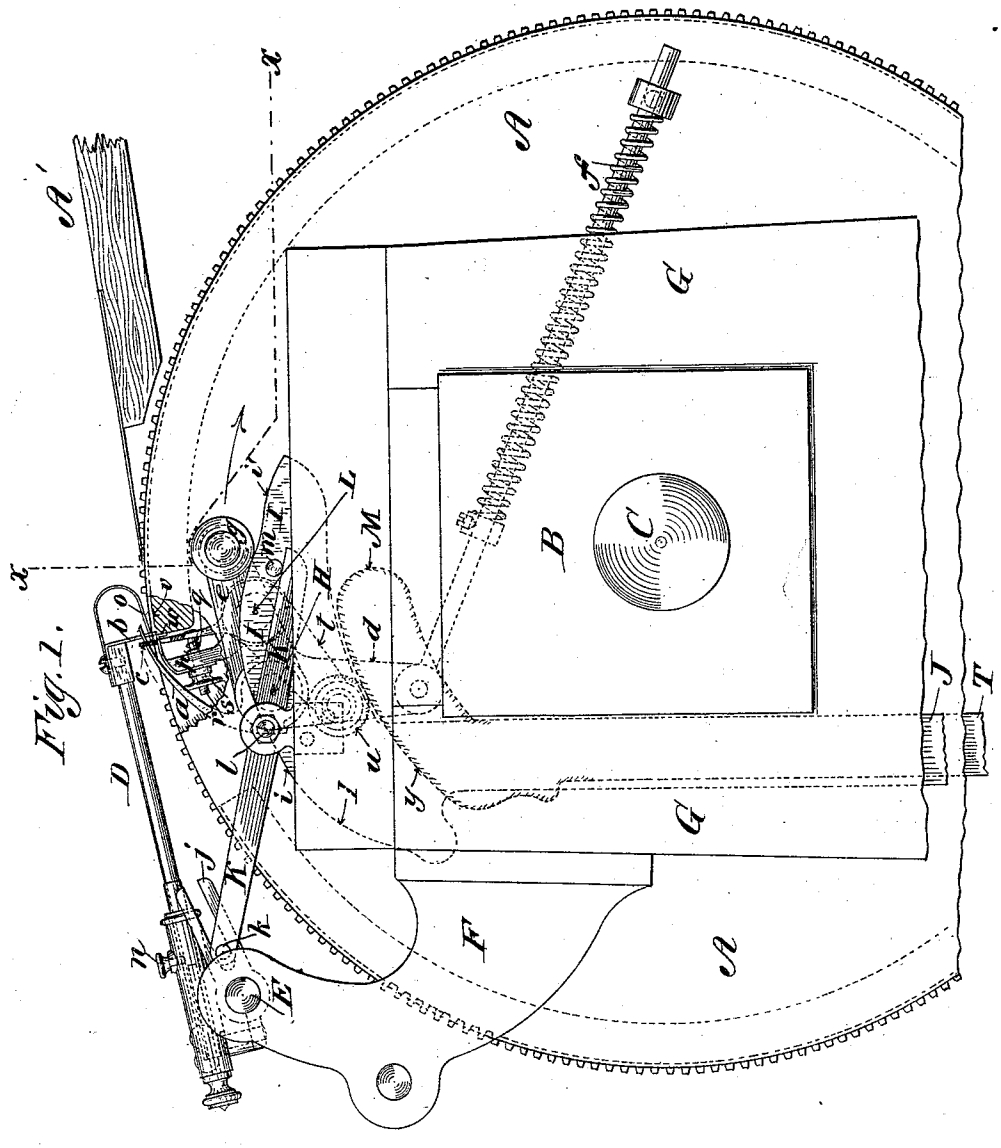


Fig. 1.

WITNESSES:
H. F. Parker.
Chas. Hanimann

INVENTOR
John Brooks
BY
Chas. M. Forbes
ATTORNEY

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 3 Sheets—Sheet 2.

J. BROOKS.

REGISTERING GAGE FOR PRINTING PRESSES.

No. 423,661. Patented Mar. 18, 1890.

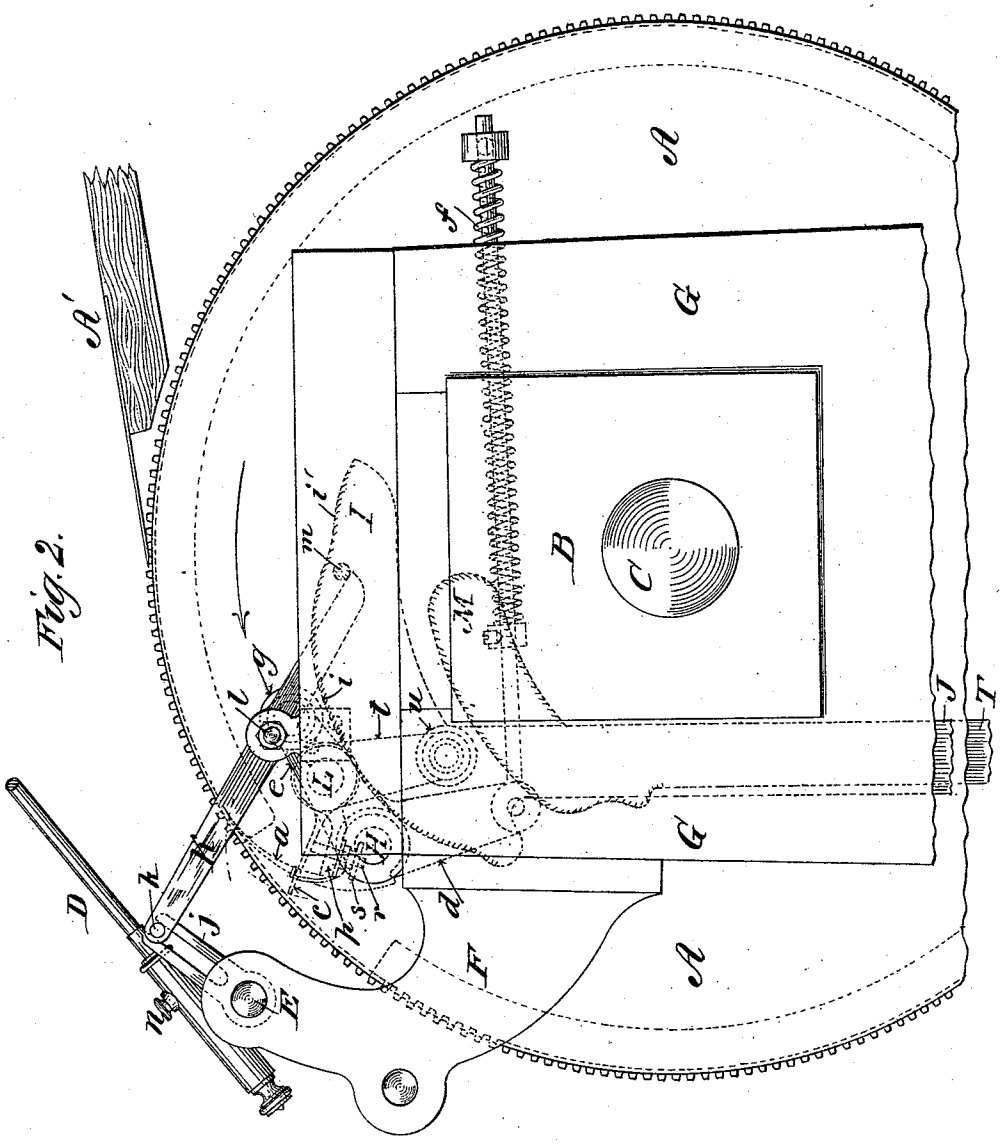


Fig. 2.

WITNESSES:
W. F. Parker
Chas. Hanmann

INVENTOR
John Brooks
BY
Chas. W. Forbes
ATTORNEY

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 3 Sheets—Sheet 3.

J. BROOKS.

REGISTERING GAGE FOR PRINTING PRESSES.

No. 423,661. Patented Mar. 18, 1890.

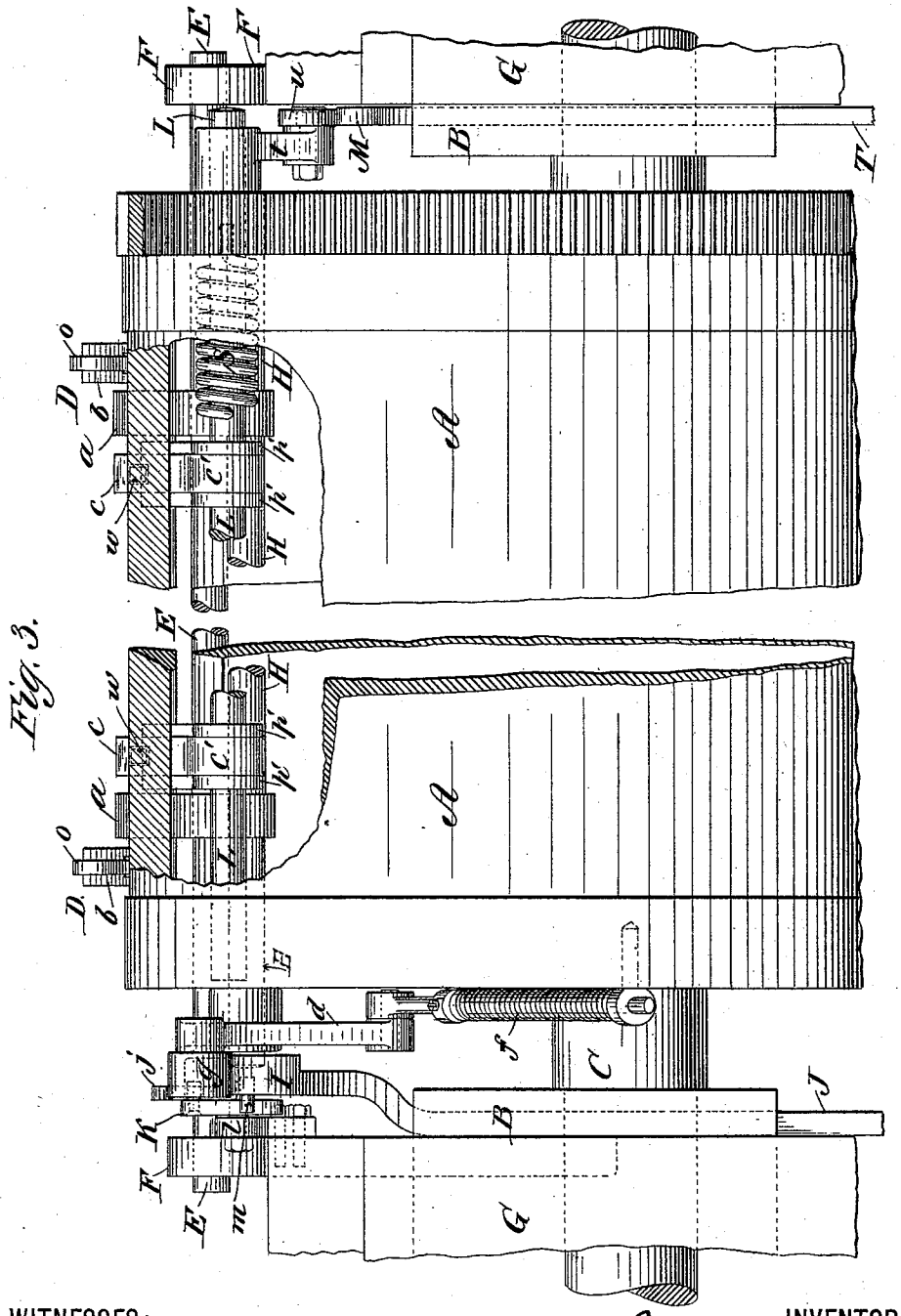


Fig. 3.

WITNESSES:
H. F. Parker,
Chas. Hanimann

INVENTOR
John Brooks
BY
Chas. M. Foster
ATTORNEY

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN BROOKS, OF PLAINFIELD, NEW JERSEY.

REGISTERING-GAGE FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 423,661, dated March 18, 1890.

Application filed August 5, 1889. Serial No. 319,794. (No model.)

To all whom it may concern:

Be it known that I, JOHN BROOKS, a citizen of the United States, residing at Plainfield, county of Union, and State of New Jersey, have invented a certain new and Improved Registering-Gage for Cylinder Printing-Presses, of which the following is a specification.

My invention has for its object to increase the accuracy of registering the sheet on the feed-table with reference to the grippers of the impression or other paper-receiving cylinder; and it consists of an automatic registering-gage upon the cylinder employed in conjunction with a registering-gage connected with the frame of the machine, and, in order to enable others skilled in the art to which my invention appertains to understand and use my said invention, I will proceed to describe its construction in detail, explain its operation, and subsequently point out in the appended claims its novel characteristics.

Referring to the accompanying drawings, forming a part of this specification, Figure 1 is an end elevation of an oscillating cylinder and journal thereof, showing the application of my invention; Fig. 2, a similar view showing the parts in a different position; and Fig. 3, a side elevation, partly in section, on the line *x x*, Fig. 1, showing the parts in a position corresponding thereto.

Similar letters of reference indicate corresponding parts in each view.

The cylinder A represents an impression-cylinder oscillating in conjunction with a platen reciprocating in its plane of impression. Oscillating motion is applied to the cylinder A by any usual or suitable mechanism, whereby it is caused to dwell at the proper point for receiving the head of the sheet at intervals of the printing movement.

B B are journals in the frame G of the machine, and C the cylinder-shaft having bearings therein.

A′ is the feed-table, in a plane tangential to the receiving-point of the cylinder, and *a* the grippers for seizing the paper.

D D are successive arms of the permanent registering-gage, which arms are fixed to the pivotal shaft E in the brackets F, attached to the frame G.

b b are the plates or abutments upon the arms D, composing the permanent registering-gage proper, and *c c* are the plates or abutments of the automatic or movable registering-gage.

The grippers *a* are fixed to the shaft H, having bearings in the cylinder A, and which shaft is provided with rock-arms *d e*, the one receiving the pressure of the gripper-closing spring *f*, the other bearing an anti-friction roller *g* in the usual manner of construction.

I is a cam-head, movable into or out of the path of the gripper-roller *g* by means of the rod J. The prominent surface *i* of the cam-head I, when raised, opens the grippers as the roller *g* travels over it, and the surface *i′* is of such a height as to permit the closure of the grippers while the cam-head I remains in a raised position.

The shaft E of the permanent registering-gage D has a forked rock-arm *j*, into the slot of which a pin *k* of the tilting-lever K engages. The tilting-lever K is fulcrumed at *l*, and its opposite extremity engages with a pin *m* on the cam-head I, whereby the gage D is lifted to clear the paper when the cam-head I is dropped. The arms D of the permanent registering-gage are adjusted to bring the plates *b* to the required permanent positions by means of the set-screws *n*.

o o are guards for directing the edge of the paper squarely against the abutments *b*.

The plates *c c* of the automatic registering-gage are loose upon the shaft L, having lugs *c′*, and there are backing-abutments *p*, fixed to the shaft L by lugs *p′*, against which the plates *c* are supported by an interposed spring *q*. The spring *q* is of sufficient stiffness to resist the paper when the plates *c* are advanced against it, as hereinafter explained, and a screw *r*, passing freely through the backing-abutments *p*, bearing a nut *s*, is provided for the adjustment of the plates *c* with relation to the abutments *p*, to determine the line of registering upon the cylinder. The shaft L has bearings in the cylinder A, and tends to retract the plates *c* from the paper by means of a coiled spring S, Fig. 3, one end of which is fixed to the shaft and the other to the cylinder. A rock-arm *t* is fixed to the shaft L, bearing an anti-friction roller *u*.

M is a cam-head movable into or out of the path of the roller *u* by means of the rod T.

The surface y of the cam-head M is concentric with the axis of the cylinder when it is raised, as in Fig. 1.

v, Fig. 1, is the surface proper of the cylinder A, and at a position flush with the said surface a guard w is provided to prevent the downward deflection of the edge of the paper. The guard w is supported upon the backing-piece p in any suitable manner, and extends through the square hole in the plate c, as seen in Fig. 3.

The operation of my invention is as follows: The machine being in the position, say, of Fig. 1, the sheet of paper is adjusted upon the feed-table, so that its leading edge abuts upon the plates b of the permanent gage D, the same having been brought into position by the preparatory elevation of the cam-head I. The grippers have been raised by the cam-head I during the rotation of the cylinder in the direction of the arrow. The automatic gage has been brought into position by the cam-head M. The rotation of the cylinder now brings the gage c into coincidence with the registering-line of the gage b, and touching the edge of the paper the cylinder is permitted to continue its movement until the gage c has passed slightly beyond the gage b, while the gage c, however, remains in a definite registering-line with reference to the cylinder, owing to the concentric surface of the cam-head M aforesaid. Should there have been any inaccuracy of the operator's adjustment of the head of the sheet upon the gage b, such inaccuracy will become automatically rectified, and as the gripper-roller g passes on the surface i' of the cam-head I the grippers seize the sheet at the point of stoppage, giving a positive register of the sheet on the cylinder. The cam-head I is now dropped to clear the path of the gripper-roller, the gage D being lifted thereby, as in Fig. 2. The cam-head M is also dropped and permits the retreat of the plates c c beneath the surface of the cylinder, as indicated by dotted lines in Fig. 2, the spring S throwing the automatic gage backward. The cam-head M may, however, be permitted to remain up until the roller u has passed off it, subsequently dropping to avoid contact with such roller during successive oscillations of the cylinder that may be employed intermitting the act of printing, as also the cam-head I is kept out of action until the proper time.

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

1. In a printing-machine, the combination, with an oscillating cylinder, a feed-table, and a removable gage having a permanent registering-line, of an automatic gage having a definite registering-line upon the cylinder advanced by the oscillation of said cylinder toward the feed-table to a line beyond said permanent registering-line.

2. In a printing-machine, the combination of an oscillating cylinder and grippers thereon for seizing the paper, a feed-table, a removable registering-gage connected to the frame of the machine, an automatic registering-gage upon the cylinder capable of projection to a definite registering-line thereon or retirement beneath the cylindric surface.

3. The combination of the oscillating cylinder, grippers thereon, and a gripper-lifting rock-arm, a cam-head for lifting the grippers, a registering-gage pivoted to the frame of the machine, a tilting-lever whereby such gage is operated by said cam-head, an automatic registering-gage pivoted to the cylinder capable of advancement or retraction from a definite registering-line, a lifting rock-arm for the automatic gage, and a cam-head for advancing such automatic gage, the said cam-head being independently movable to an active or inactive position.

4. The herein-described automatic registering-gage for an oscillating cylinder, consisting of a rock-shaft, gage-plates c, loose thereon, backing-abutments p, tight upon the said shaft, backing-springs q, interposed between said plates and abutments, and adjusting-screws r, adapted for the purpose described.

5. The combination, with the gage-plates c, the rock-shaft L, and the backing-abutments p of the automatic registering-gage, of the guards w, fixed to said abutments and projecting to form rests upon the edge of the cylinder-opening independently of the said gage-plates.

JOHN BROOKS.

Witnesses:
CHAS. W. FORBES,
H. F. PARKER.