

(No Model.)

2 Sheets—Sheet 1.

T. A. BRIGGS.
PAPER FEEDING MACHINE.

No. 507,308.

Patented Oct. 24, 1893.

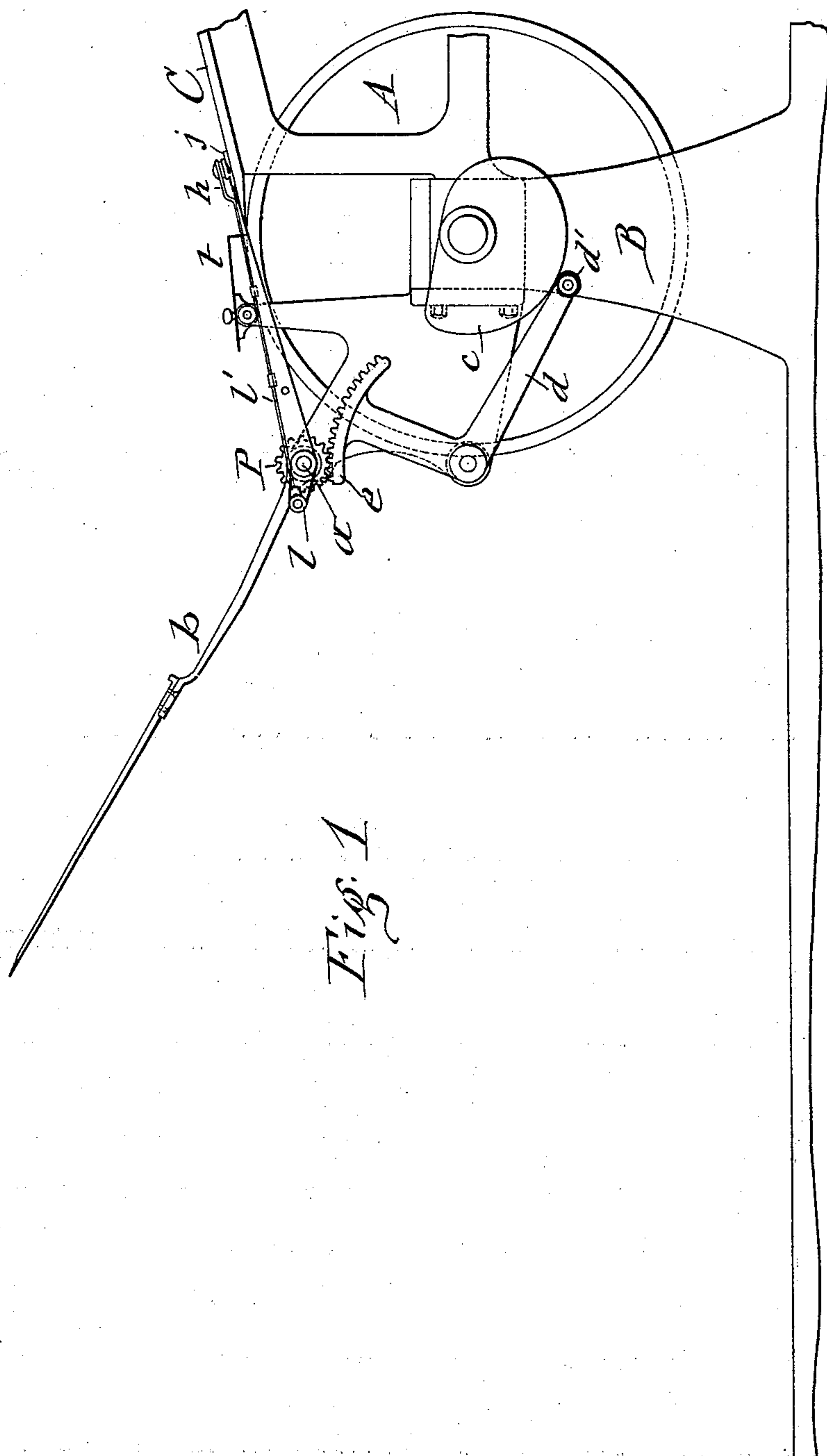


Fig. 1

WITNESSES

C. L. Burdison
H. M. Seamans

INVENTOR:

Thomas A. Briggs
By Graft, Lasso & Bull
his Atty.

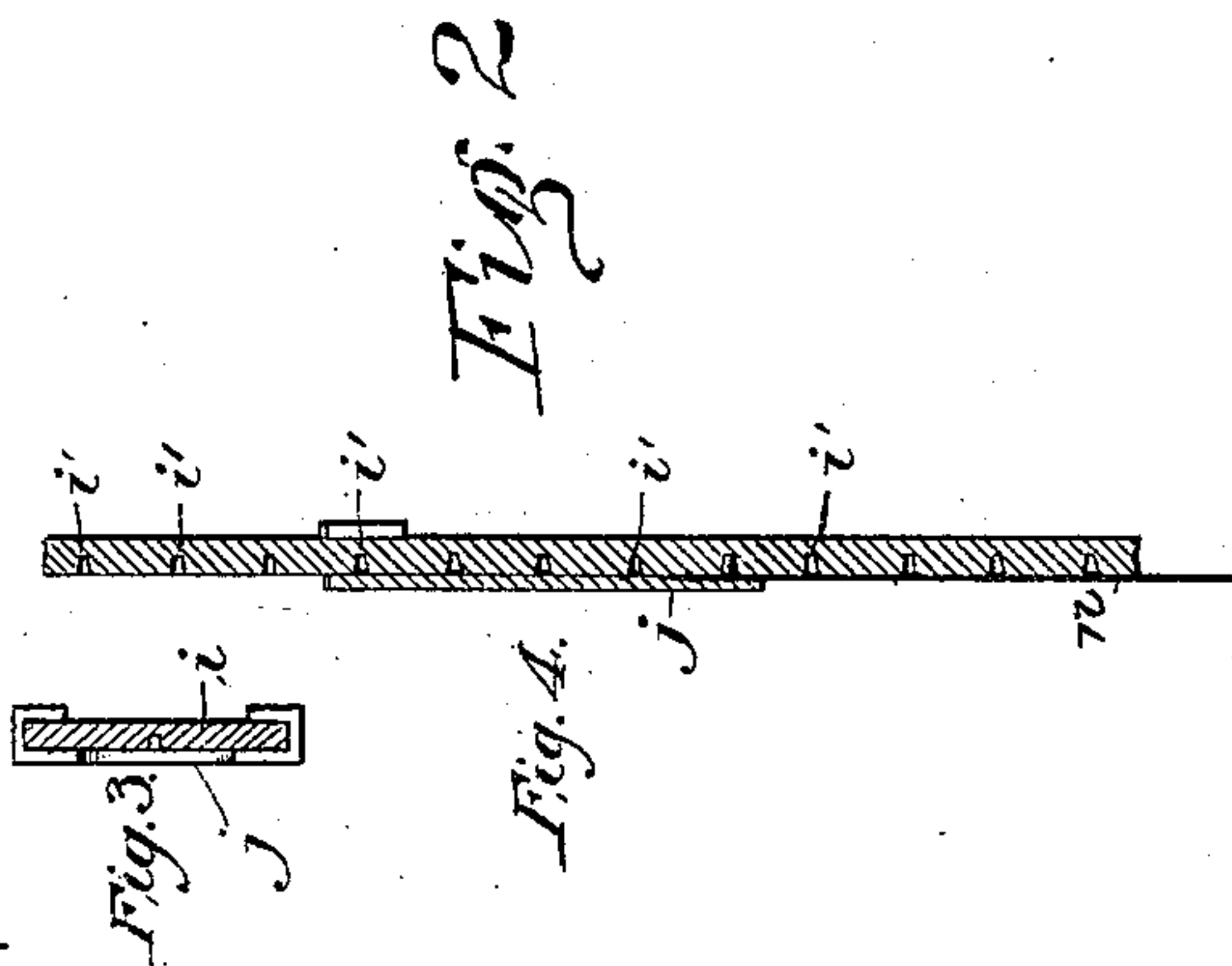
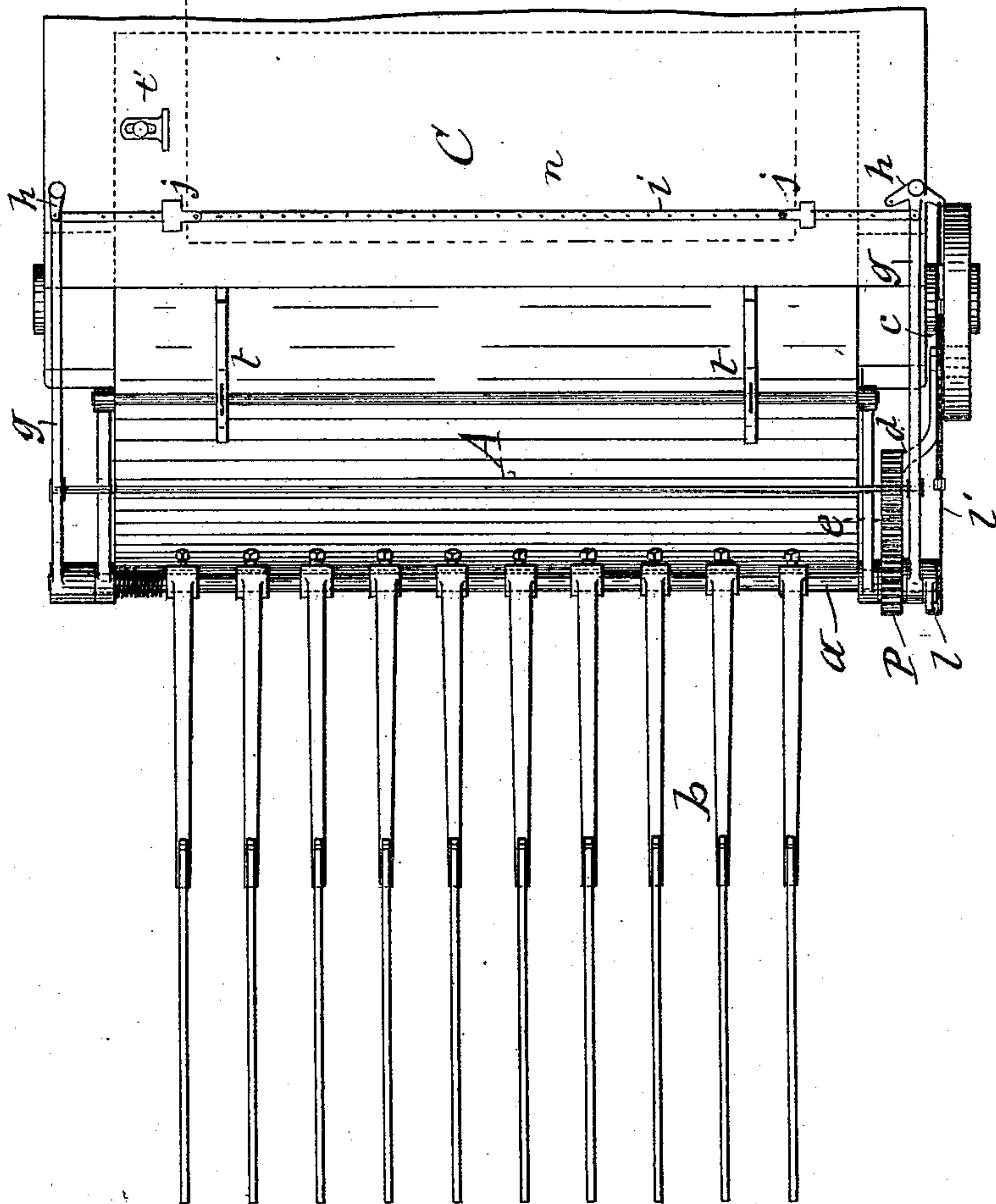
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UNITED STATES PATENT OFFICE.

THOMAS A. BRIGGS, OF ARLINGTON, MASSACHUSETTS.

PAPER-FEEDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 507,308, dated October 24, 1893.

Application filed June 13, 1892. Serial No. 436,568. (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-Feeding Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

The purpose of this invention is to deposit the blank sheets of paper upon the feed-board of a cylinder printing machine by means of a fly, and to register the sheets on the feed-board and pass said sheets to the impression cylinder automatically with the receding of the fly from the feed board, and to that end the invention consists essentially in the combination with the impression cylinder and feed-board, of a fly arranged axially parallel with the impression-cylinder and at the side opposite to the feed-board and swinging to and from the same, registering mechanisms on the feed-board receiving the sheets of paper and passing them in adjusted position to the impression cylinder, and mechanism transmitting motion simultaneously to the registering mechanism and fly and registering the paper during the receding of said fly from the feed-board, all as hereinafter more fully described and specifically set forth in the claims.

In the annexed drawings Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is a plan view of the same, and Figs. 3 and 4 are respectively enlarged transverse and longitudinal sections of the sheet-carrying bar by the aid of which the paper in transit is registered.

Similar letters of reference indicate corresponding parts.

A—represents the impression cylinder of a printing-press, and B— the supporting frame of said cylinder, and C— denotes the feed-board which is arranged over one side of the impression cylinder.

At the opposite side of the impression cylinder above the axis thereof is the rock-shaft a— which is parallel with the axis of said cylinder, and mounted in suitable bearings on the frame B— so as to allow the fly b— to swing to and from the feed-board. To one end of said rock-shaft is affixed a pinion P— which receives oscillatory motion from a cam

c— attached to the axis of the impression cylinder A—, said motion being transmitted preferably by means of a rock-arm d— pivoted to the frame B— and having one end provided with a roller d'— by which it bears on the periphery of the cam c—. To the opposite end of the rock-arm is affixed a segmental gear e— which meshes with the pinion P—. The aforesaid cam is of such a shape as to impart an intermittent oscillatory motion to the rock-arm d— and a corresponding motion with greatly accelerated speed to the fly b—, which is thereby swung back and forth in an arc extending from the top of the feed-board and forward from the impression cylinder A— to a position inclining toward said cylinder, as represented in Fig. 1 of the drawings. The paper to be fed may be placed on the fly either by hand of the operator, or by a suitable automatic paper-feeding machine, said fly carrying the paper over onto the feed-board C— where it is adjusted to its requisite position in relation to the impression-cylinder A— and passed to the same by means of the so-called paper-registering mechanism mounted on the feed-board. Said mechanism I prefer to construct in some respects similar to that shown in my United States Patent No. 487,513, dated December 6, 1892, and it consists mainly of the bar i— which extends across the feed-board and is pivotally connected at opposite ends to the free ends of levers h—h— which are pivoted to the free ends of arms g—g— resting upon the feed-board and sustained at the opposite ends on the rock-shaft a— by sleeves or collars formed on or rigidly attached to the arms and loosely embracing the rock-shaft. The levers h—h— are thus sustained a uniform distance from the rock-shaft.

On the bar i— are mounted the clamps j—j— by means of which a sheet n— of paper or other suitable material is secured to said bar as indicated by dotted lines in Fig. 2 of the drawings and more clearly shown in Fig. 4 of the drawings. Said clamps are adjustable lengthwise of the bar so as to adapt them for fastening sheets of different widths to the bar i—. For this purpose the bar i— may be provided with a series of sockets i'—i'— for the reception of small lugs

on the under sides of the clamps, one of the lugs of each of said clamps passing through the sheet —*n*— and thus affording a secure hold on said sheet. Said cross-bar with the sheet —*n*— attached thereto, receives a combined longitudinal and lateral reciprocating motion by the oscillations of the levers —*h*— which are actuated automatically with the movement of the fly by means of a crank —*l*— attached to the rock-shaft, and a pitman —*l'*— connecting said crank with one of the levers —*h*. The fly —*b*— deposits the blank sheets upon the sheet —*n*— which by its aforesaid movement carries said blank sheet forward and to one side until the front edge thereof is brought into contact with the gages —*t*— and one of the side edges of said sheet is brought in contact with the side-gage —*t'*— which latter is adjustably secured to the feed-board. In this manner the paper is brought into alignment with and fed to the impression-cylinder which is provided with the usual grippers for gripping the advance edge of the paper in the usual and well known manner.

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

1. In combination with the impression-cylinder and feed-board over one side of said cylinder, a fly pivoted at the opposite side of the cylinder and swinging to and from the feed-board to deliver thereto the blank sheets to be fed to the cylinder as set forth.

2. In combination with the impression cylinder and feed-board over one side of said cylinder, a fly pivoted at the opposite side of the impression cylinder and swinging to and from the feed-board, a pinion fixed to the fly-shaft, a cam attached to the axis of the impression cylinder, a rock-arm actuated by said cam, and a gear on the rock-arm transmitting motion to the aforesaid pinion, as set forth.

3. In combination with the impression-cylinder and the feed-board over one side of said cylinder, a fly-shaft pivoted at the opposite side of the cylinder and swinging to and from the feed-board, a crank attached to the fly-

shaft, paper registering mechanisms mounted on the feed-table, and a pitman connecting said mechanisms to the aforesaid crank, as set forth.

4. In combination with the impression cylinder and feed-board over one side of said cylinder, a fly-shaft pivoted at the opposite side of the cylinder and swinging to and from the feed-board, arms extending from the fly-shaft over the feed-board, levers pivoted to the free ends of said arms, a transverse paper-shifting bar pivoted to said levers, a crank on the aforesaid fly-shaft, and a pitman connecting said crank to one of the aforesaid levers, substantially as described and shown.

5. The combination with the impression cylinder and feed-board, of a fly arranged axially parallel with the impression-cylinder and at the side opposite to the feed-board and swinging to and from the same, registering mechanisms on the feed-board receiving the sheets of paper and passing them in adjusted position to the impression cylinder, and mechanism transmitting motion simultaneously to the registering mechanism and fly and registering the paper during the receding of said fly from the feed-board, as set forth.

6. In combination with the impression cylinder and feed-board over one side of said cylinder, a fly-shaft pivoted to the opposite side of the cylinder and swinging to and from the feed-board, a crank and a pinion attached to the fly-shaft, paper-registering mechanisms on the feed-board, a pitman connecting said mechanisms to the aforesaid crank, a cam attached to the axis of the impression cylinder, a rock-arm actuated by said cam, and a segmental gear on the rock-arm meshing with the aforesaid pinion, substantially as set forth and shown.

In testimony whereof I have hereunto signed my name this 17th day of May, 1892.

THOMAS A. BRIGGS. [L. s.]

Witnesses:

WILLIAM H. H. TUTTLE,
CHARLES S. PARKER.