

A. CAMPBELL.
GAGE FOR PRINTING PRESSES.

No. 105,638.

Patented July 26, 1870.

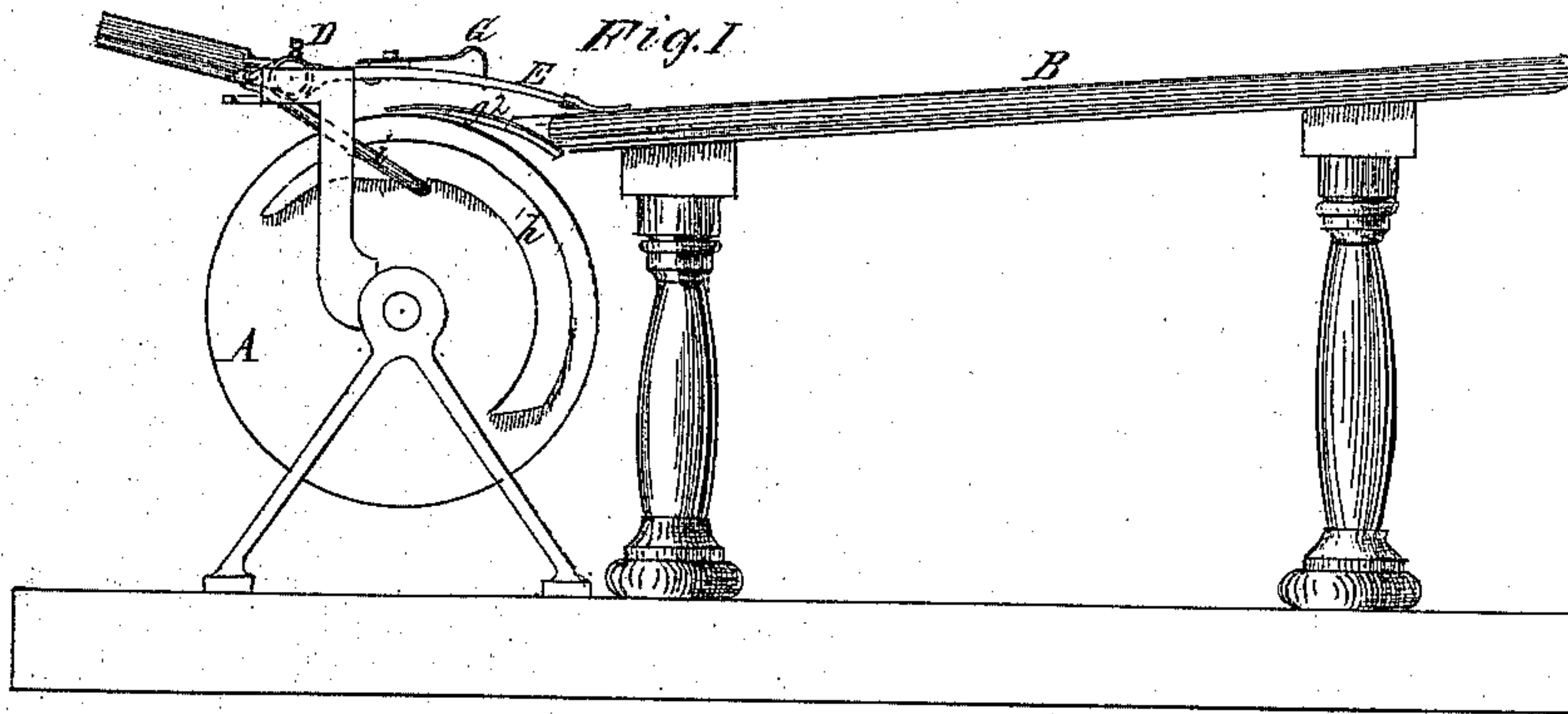
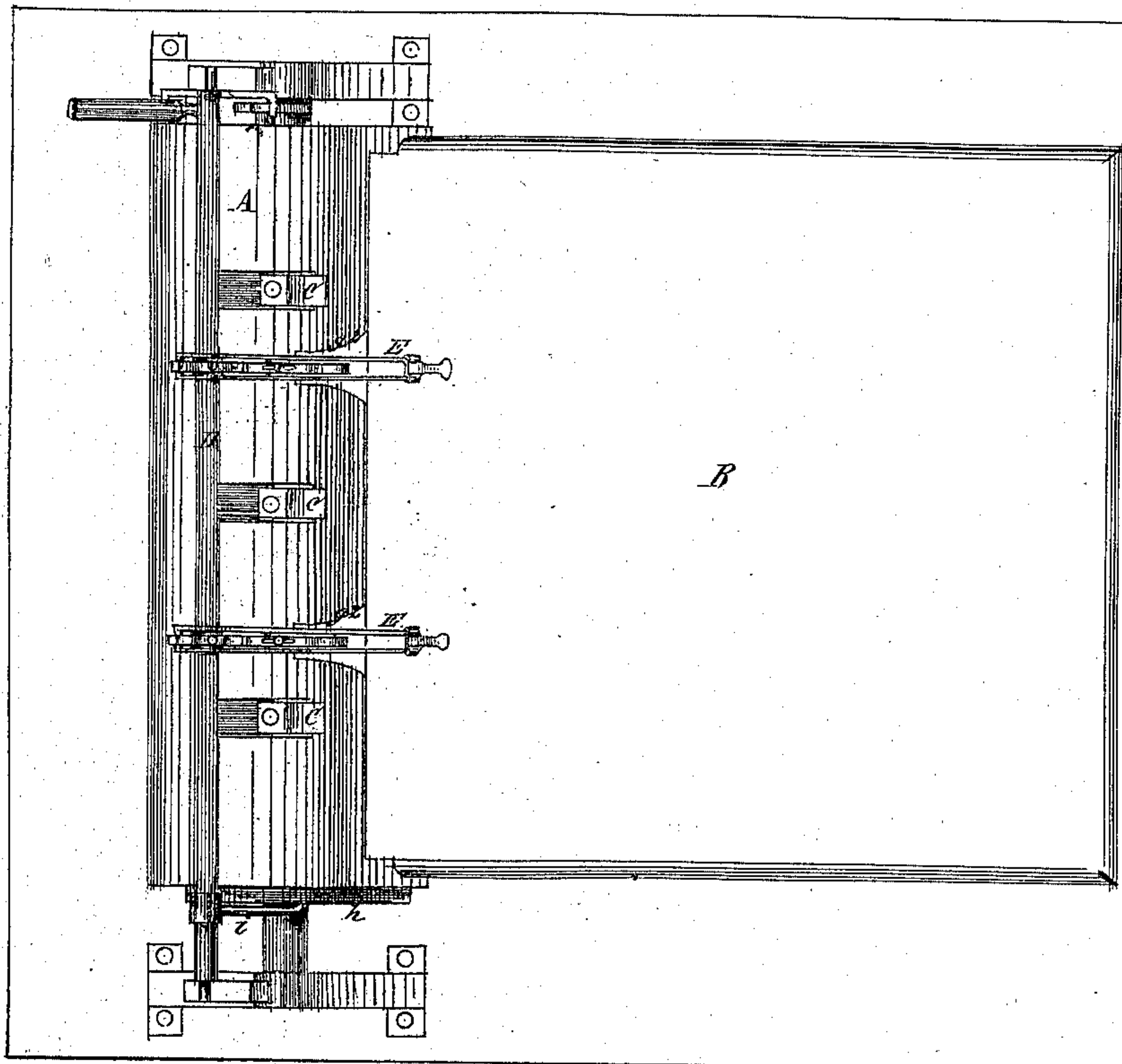


Fig. II.



Geo. J. Conner
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Witnesses.

A. Campbell. Inventor
by Forbush & Hyatt
his attys

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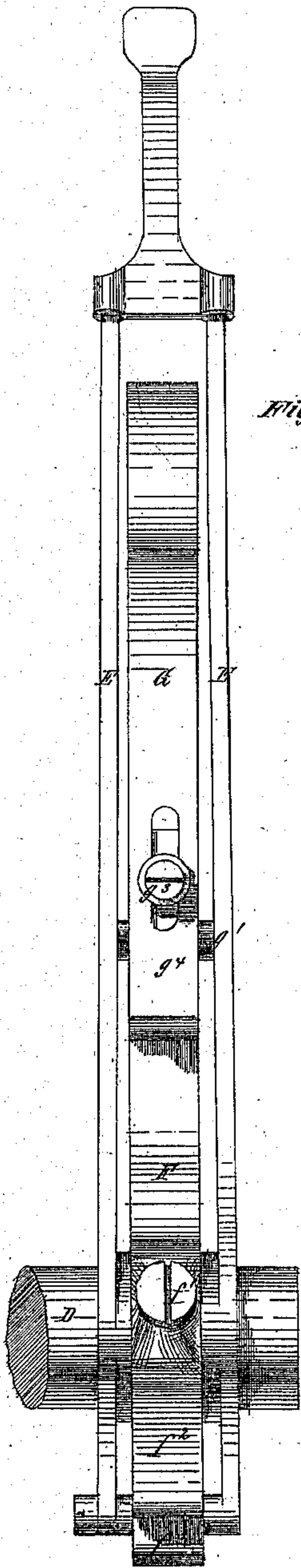


Fig. IV.

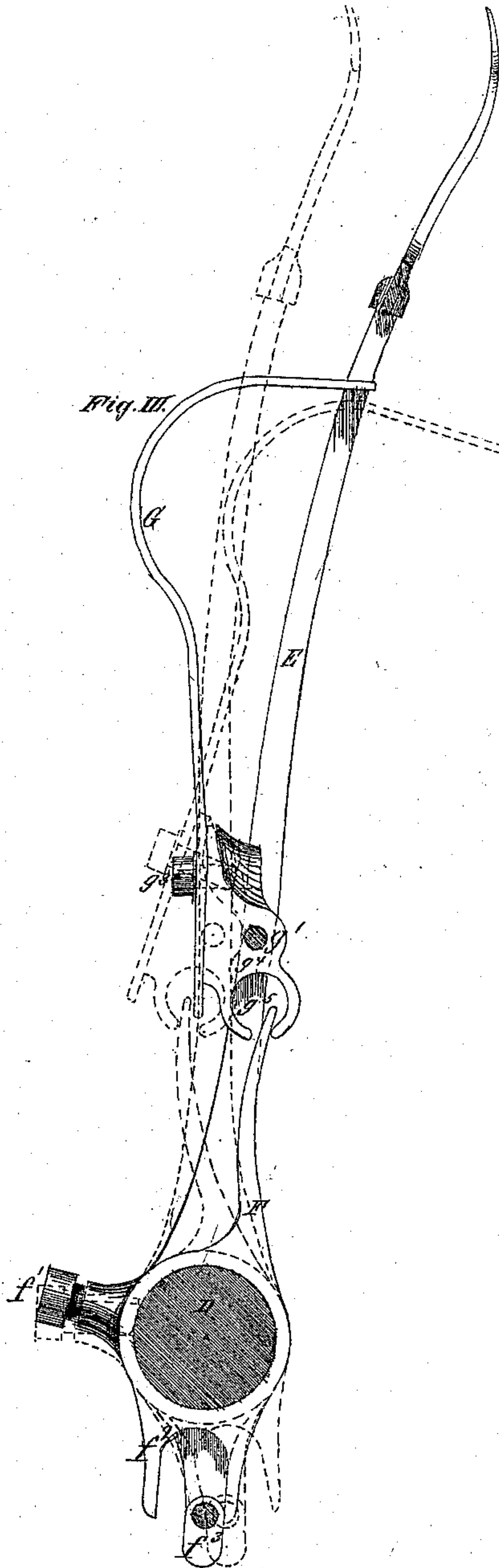


Fig. III.

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UNITED STATES PATENT OFFICE.

ANDREW CAMPBELL, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN GAGES FOR PRINTING-PRESSES.

Specification forming part of Letters Patent No. 105,638, dated July 26, 1870.

To all whom it may concern:

Be it known that I, ANDREW CAMPBELL, of the city of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Printing-Presses, of which the following is a specification.

My improvements relate to a feeding mechanism for printing-presses, which employs, in connection with the feed-guides, pressure-arms operating to hold the sheets upon the feed-table against displacement during the interval of time which elapses between the withdrawal of the feed-guides and the grasping of the sheets by the grippers, so as to insure the proper delivery thereof to the latter, and secure a more perfect "register." In prior inventions for this purpose the feed-guides and pressure-arms have been applied to separate rock-shafts and manipulated by separate and independent cams; but my invention consists in arranging for their operation by the same shaft by hanging the pressure-arm loosely thereon and hinging the feed-guide to said arm, or vice versa, in connection with a fixed arm on said shaft connecting with said pressure-arm or feed-guide, as the case may be, so that a rocking of the shaft in one direction will drop the pressure-arm upon the sheet and then raise the feed-guide, while its reverse movement will lower the feed-guide upon the table and raise the pressure-arm from the sheet, thus accomplishing the desired end in the most simple and efficient manner.

My invention further consists in the combination, with the feed-guide and pressure-arm, of a locking device, by which they may be secured upon the shaft in such angular positions with reference to the cam-arm, by which the movement of the shaft is produced, as will enable either the pressure-arm or feed-guide to perform its function without operating the other, according to the requirements of the work being done upon the press.

In the drawings, Figure I is a side elevation of a printing-press cylinder and feed-table with my improvements applied thereto. Fig. II is a plan of same. Fig. III is a side view (full size) of combined pressure-arm and feed-guide. Fig. IV is a plan of same.

A represents the impression-cylinder, and B the feed-table, both of ordinary construction and arrangement.

C represents the grippers, by which the sheets

are clamped to the cylinder, drawn from the feed-table, and carried to the impression. They are constructed and operate in a common manner.

D represents the rock-shaft, which carries the feed-guides and pressure-arms. It is supported above the plane of the feed-table by brackets attached to the press side frames.

E represents the pressure-arm, hung upon the rock-shaft, so as to turn loosely thereon.

F is the fixed arm, by which the rocking movement of the shaft is communicated to the feed-guide and pressure-arm. It is fixed upon the shaft by a set-screw, f' , so that, when required, it may be loosened and adjusted longitudinally or angularly thereon. The attached end of the pressure-arm is bifurcated and takes hold of the shaft upon each side of the fixed arm, which thereby serves to hold it against longitudinal movement, but allows it free angular movement.

G is the feed-gage or guide-arm. It is located between the sides of the bifurcated part of the pressure-arm and hinged thereto, as shown at g' . The position of the rock-shaft, the length of the guide and pressure arms, and the position of the fulcrum g' of the guide-arm are so adjusted in relation to each other and to the feed-table as that the guide-arm will strike upon the front edge of the feed-table, (or, rather, upon fingers g^2 , projecting therefrom,) while the pressure-arm will reach beyond and bear upon the surface of a sheet when laid upon the feed-table and against the guide-arm. The guide-arm is made in two parts connected together by a set-screw, g^3 , one part being slotted, so that the arm may be lengthened or shortened at pleasure, and its point of bearing upon the feed-table adjusted to bring the sheets, when they are fed up to it, into the exact position necessary for their proper taking by the grippers. The guide-arm is extended rearward of its fulcrum, as shown at g^4 , this extension forming the short arm of a lever of which the guide-arm is the long arm. A crescent-shaped notch, g^5 , is cut in the end of this short arm, into which the end of the lever F enters.

The operation is as follows: An upward movement of the lever F, by the rocking of its shaft, will throw the end of the guide-arm down upon the feed-table. As soon as the end of the guide-arm strikes, it becomes the

fulcrum, instead of the joint g' , so that the upward movement of the lever being continued, the pressure-arm will be lifted from the table. A downward movement of the lever F, by a reverse rocking of its shaft, will, on the other hand, lower the end of the pressure-arm upon the table, and thus again make the joint g' a fulcrum for the movement of the guide-arm, so that a continued movement of the arm F will cause the guide-arm to lift from the table. This construction therefore makes a simple rocking movement of the shaft D, to alternately lower the guide-arm and lift the pressure-arm and lower the pressure-arm and lift the guide-arm. The rocking movement of the shaft D, by which these movements are produced, is obtained from a cam, h , on the end of the cylinder A, acting through a cam-arm, i , on the end of the rock-shaft, the form of the cam and its angular position with reference to the grippers being such as to raise the feed-guide and lower the pressure-arm previous to the taking of the sheet by the grippers, and to lower the feed-guide and raise the pressure-arm as soon as the sheet is withdrawn from the table, so that a new sheet may be fed.

It may be here observed that the fulcrum g' of the feed-arm is placed above a line drawn from its point through the center of the rock-shaft. The effect of this is to make the end of the feed-guide move toward the paper during the descent of the pressure-arm, and until it strikes the table, so that carelessness upon the part of the feed-boy in laying the sheets to the gages is less likely to result in an improper taking thereof by the grippers.

The arm F is provided with a bifurcated rear extension or arm, f^2 , and the ends of the pressure-arm are extended to correspond, and fur-

nished with a cam, f^3 , passing between the jaws of said arm f^2 . When said cam is turned in a radial position to the shaft D, there is sufficient play to allow of the required angular movement of the fixed arm without its striking on either side of said jaws; but when it is turned to a position at right angles to said radial position, it fills the space, and thereby locks the parts together. When the cam is turned down, the parts will be locked in such relative position to each other that the feed-guide only will be operative, and when turned up their position will be changed, so that only the pressure-arm will be operative.

What I claim as my invention is—

1. A combined sheet gage and holder consisting of a pressure-arm, E, hung loosely upon a rock-shaft, a feed-guide, G, hinged to said pressure-arm, and a fixed arm, F, upon said rock-shaft, or their equivalents, so arranged that a rocking of the shaft in one direction will drop the pressure-arm and raise the feed-guide, while its reverse movement will lower the feed-guide and raise the pressure-arm, substantially as and for the purpose hereinbefore set forth.

2. The locking device $f^2 f^3$ or its equivalent, by which the angular position of the pressure-arm and feed-guide may be so adjusted upon the rock-shaft and with reference to each other that either may be made to perform its function independent of the other, substantially as and for the purpose hereinbefore set forth.

A. CAMPBELL.

Witnesses:

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W. H. FORBUSH.