

No. 644,223.

Patented Feb. 27, 1900.

J. BROOKS & W. S. HUSON.

PRINTING PRESS.

(Application filed Sept. 27, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 5

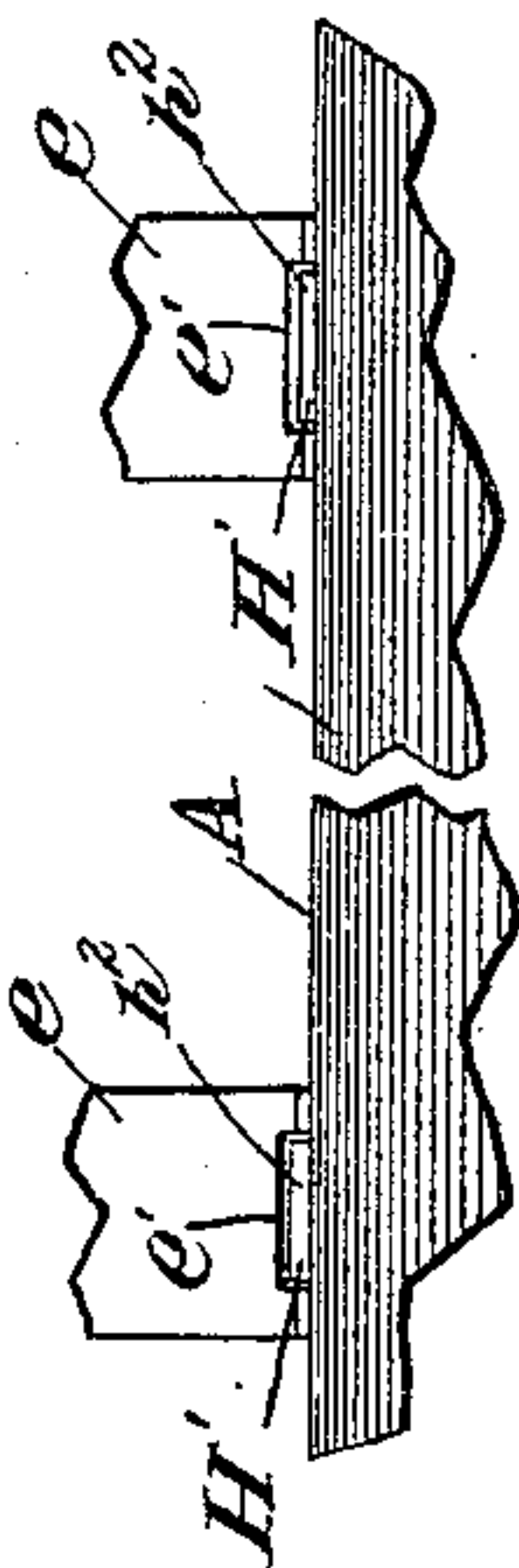


Fig. 1

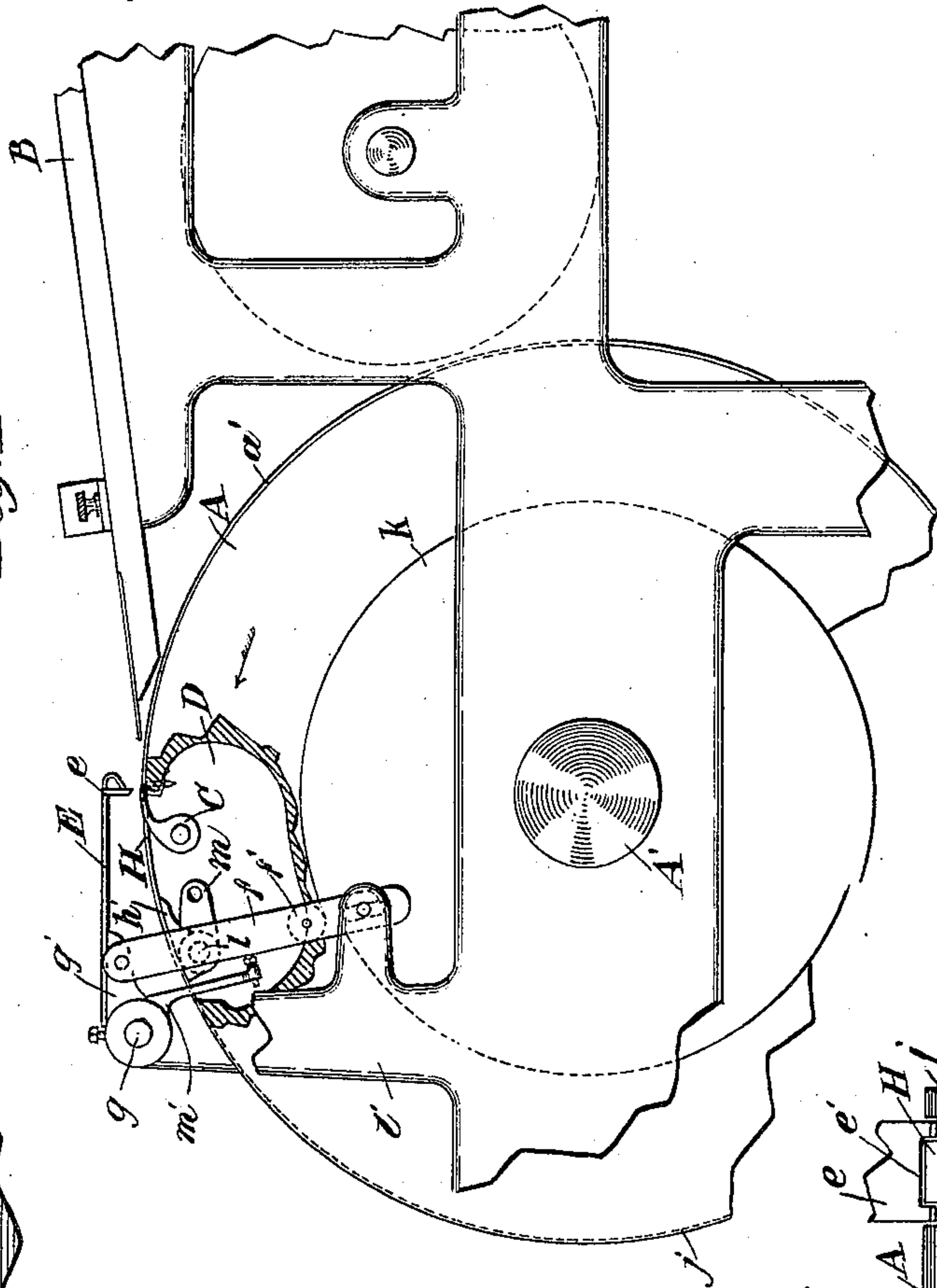
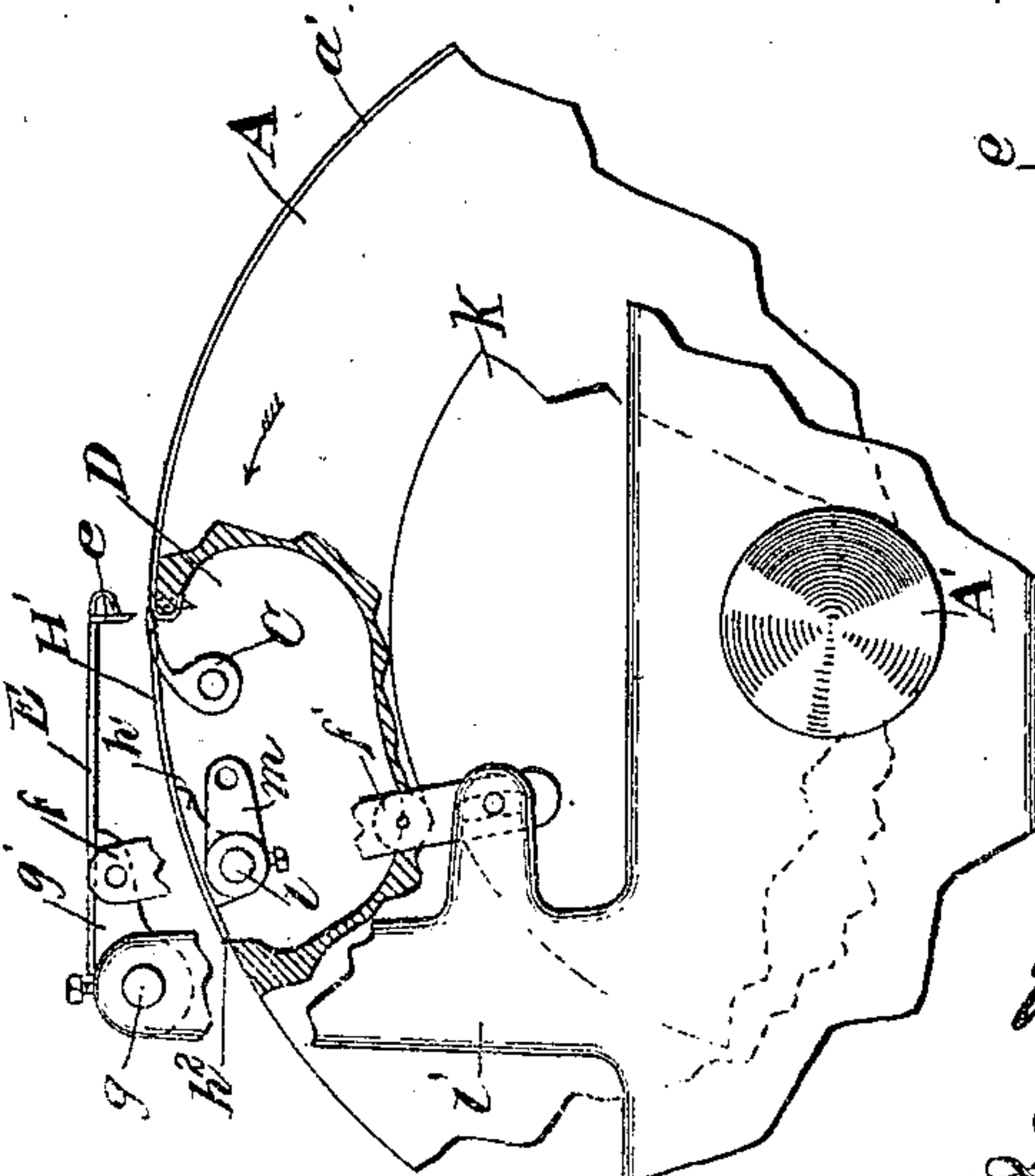


Fig. 3



Fig. 4



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INVENTORS

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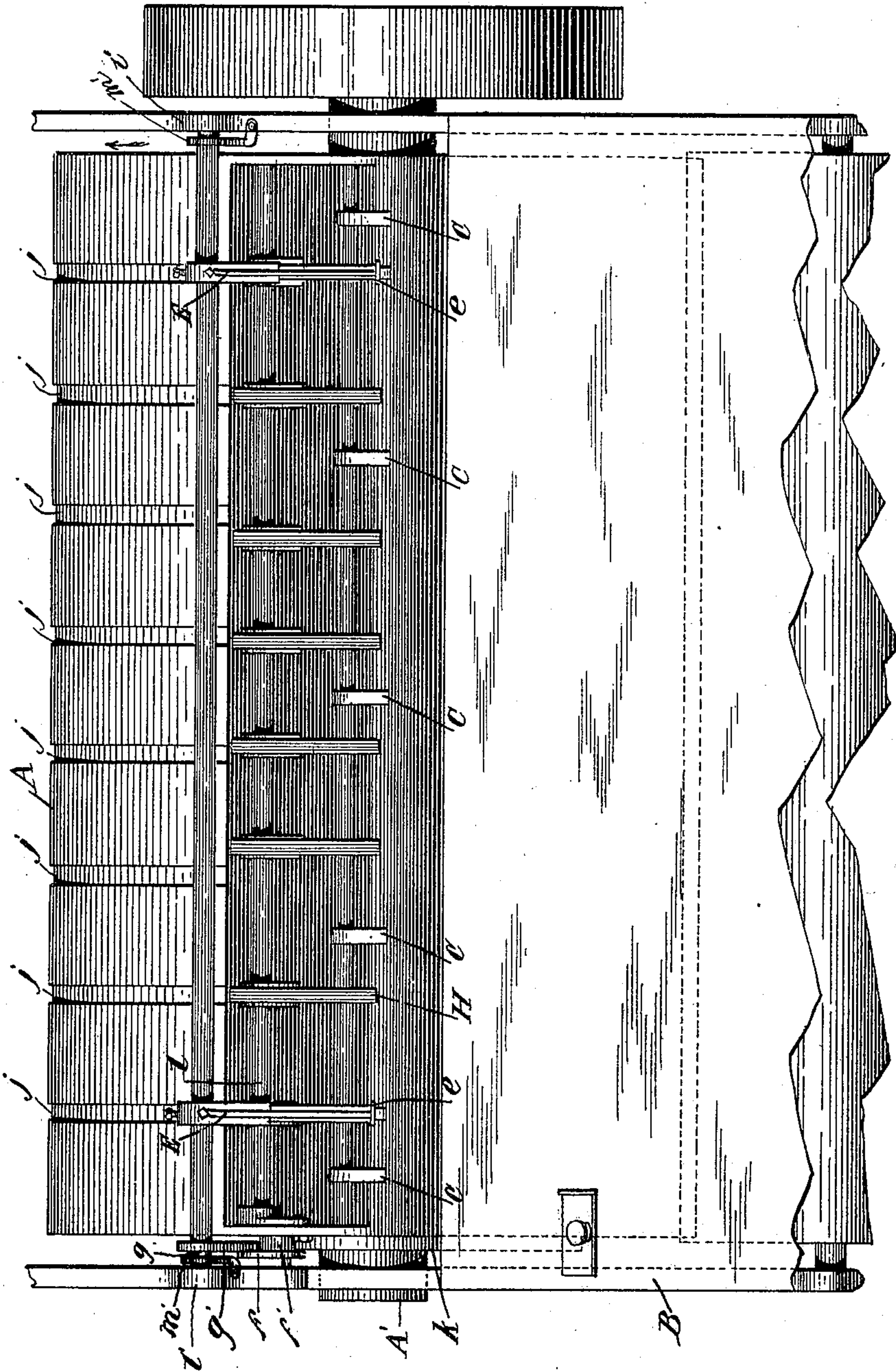
PRINTING PRESS.

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(No Model.)

2 Sheets—Sheet 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN BROOKS AND WINFIELD S. HUSON, OF PLAINFIELD, NEW JERSEY,
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PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 644,223, dated February 27, 1900.

Application filed September 27, 1898. Serial No. 691,999. (No model.)

To all whom it may concern:

Be it known that we, JOHN BROOKS and WINFIELD S. HUSON, citizens of the United States, and residents of Plainfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Printing-Presses, of which the following is a specification.

Our invention relates to improvements in printing-presses.

In particular the invention relates to improvements in the paper-carrier, which is preferably of cylindrical form, and in the front gages, (or guides,) the improved carrier and gages being constructed to cooperate in the manner hereinafter described.

The especial object of our improvements is to furnish support to the sheet of paper when fed by the gages across the gripper-gap at the gage edge, whereby the sheet will be delivered on the carrier-surface true and flat. In effecting this result we make the off side of the carrier about as high as the impression side, the impression side being covered with the usual packing or blanket, making it somewhat higher than the off side. In our preferred construction we provide very shallow grooves in the off surface of such small width as not to substantially interfere with the contiguity of said surface, and we construct and arrange our front gages so as to just enter these grooves, thus effectually preventing the edge of the sheet from slipping under the gages. Across the gripper-gap are arranged the supporting-fingers, some of which will be exactly in line with the gages and so that said fingers will move through recesses in the lower edge of the blade of the gages as the paper-carrier moves. These fingers are nearly the same height and curvature as the surface of the paper-carrier, being about the same radius as the off side of the cylinder and running up onto the packing or blanket which covers the impression side, and therefore they support the sheet across the gap. In a modified construction we omit the grooves in the off surface of the paper-carrier and arrange the supporting-fingers the least possible above the off-side surface of the paper-car-

rier, said fingers moving through the recesses in the edges of the blades of the gages, as before.

Referring to the drawings which accompany the specification to aid the description, Figure 1 is an end elevation, partly broken, of a paper-carrier shown as an impression-cylinder having a portion of its surface covered by the packing or blanket and termed the "impression" side, the remaining portion of its surface which is not cut away by the gap being termed the "off" side and the "feed-board." The parts are in the position where the front gages have just been raised and the grippers have caught the sheet. The parts of the press not essential to the present invention are omitted. Fig. 2 is a top or plan view of Fig. 1. Fig. 3 is a broken elevation, on a large scale, showing the blade of the gage and a supporting-finger in relation to the grooves in the off side of the paper-carrier. Fig. 4 is a broken end elevation of the paper-carrier, showing the modified gage and supporting-fingers. Fig. 5 is a broken elevation, on a larger scale, showing the modified arrangement of supporting-finger and front gage.

The paper-carrier A rotates in the direction of the arrow and carries the paper against the form or printing-plate (not shown) in the well-known manner.

B is the feed-board from which the sheets are fed, provided with a side gage and arranged in the well-known manner. Grippers C are carried in the gap D in the well-known manner.

E E are the front gages or guides. Said gages are lifted through the medium of the cam *k* on the end of the shaft A' of the paper-carrier A and the roller *f'* on the rod *f*, which is pivoted to the arm *g'* of the cross-shaft *g*, on which shaft *g* are fixed the gages E by set-screws, as shown in Fig. 2. The blades *e* of said gages E are provided with recesses *e'* in their lower edges, which recesses span the supporting-fingers H, Fig. 3. The surface of the off side of said paper-carrier A—that is, the side to the left of gripper-gap D—is provided with several shallow and

rather narrow grooves *j j*, Fig. 2, certain of which are in line with the said blades *e* of the front gages, and cam *k* is so set that as the off side of paper-carrier A comes under the
 5 said blades *e* the said cam will permit said gages to descend and the blades *e* to enter said grooves *j j*, but, preferably, not to descend to the bottom of the grooves, the drop of the gages being regulated by the arm *m'*,
 10 which is secured to the shaft *g* and has at its free end an adjusting-screw, which when the guides or gages are down strikes the framing *i* and by means of which the guides or gages may be set to the desired amount of entrance
 15 into the grooves. The front guides remain down until just before the grippers C close on the sheet of paper, when the said cam *k* raises the gages E to the position of Fig. 1. Therefore when the gages are down the front
 20 edge of the sheet of paper cannot slip under the blades *e*.

H H are sheet-supporting fingers, which preferably consist of thin strips of spring-steel made to fit easily in the recesses *e'* of
 25 the blades *e* and fixed on blocks *h'*, which are movable lengthwise of shaft *l* to permit of positioning the fingers either at the grooves or the surface between the grooves, and adjustable by set-screws on said shaft *l*, which
 30 shaft is carried in bearings across the gripper-gap D. Certain of said fingers H, as shown, are exactly in line with recesses *e'* of said blades *e*, so that as the carrier A moves the fingers will move through said recesses.
 35 The other fingers may either be in line with the grooves in the carrier A or between them, and the set-screws allow of accurately adjusting them to any desired position. On one end of said shaft *l* is fixed an arm *m* with
 40 a hole into which enters a pin through the head of carrier A. This pin holds the shaft in the proper position to keep the one end of the said fingers on the bevel of the impression side of the gripper-gap and the other or rear
 45 end of said fingers just at the off side of said gap, so that said fingers completely span the gap and support the sheet over the same, so that it cannot crease or buckle. By withdrawing said pin from the arm *m* the shaft *l*
 50 can be turned so as to raise the fingers and give access to the gap for any purpose, as to change the blanket. As clearly shown in Figs. 1 and 4, the off side of the said gap is somewhat undercut or downwardly and in-
 55 wardly beveled, so as to permit of thus raising the fingers.

In the modification shown in Figs. 4 and 5 the supporting-fingers H' are shown as slightly above the off side of carrier A, so that as said
 60 carrier turns, supposing the gages E to be then resting on the off side, the said supporting-fingers H' will enter a very small distance into the recesses *e'* of said gages E and effectually prevent a sheet from slipping under
 65 the gages, for a very slight entry of said fin-

gers into said recesses is sufficient to prevent the slipping of the sheet. Moreover, we prefer to bevel the lower edge of the blades *e* of said gages upwardly and rearwardly, as
 70 shown, so as to form a knife-edge on said blades, whereby the knife-edge may rest on the surface of the off side of the carrier A. The knife-edge will then effectually prevent the front edge of the sheet from slipping under the gages, and we can either dispense
 75 with the use of grooves in the off side of the carrier A or can use the grooves, setting some of the gages so as to enter certain of the grooves and others so that their knife-edges will ride on the off side of the carrier between the
 80 grooves. In this manner we are enabled to set our gages so as to register with a color which may have been printed on the sheet in another press.

Now, having described our improvements, 85 we claim as our invention—

1. The combination in a printing-press, of a paper-carrier provided with a grooved off surface and with a gripper-gap, movable sheet-supporting fingers extending clear across said
 90 gap and in substantial contact with the off side of said gap, and recessed front gages adapted to coact with said grooves and fingers to keep the sheet in gage position, substantially as described. 95

2. The combination in a printing-press, of a paper-carrier provided with grooves in the off side and with a gap, sheet-supporting fingers carried in said gap adjustable lengthwise of said carrier so as to be set either for
 100 the normal surface of the off side of said carrier or for said grooves, and front gages adapted to coact with said grooves and fingers, substantially as described.

3. The combination in a printing-press, of 105 a paper-carrier provided with a gap, a series of sheet-supporting fingers in the gap, and a rotatable shaft on which said fingers are adjustably mounted so as to move said fingers as a series to and from the impression side
 110 of said gap, and means for normally holding said series of fingers down across the gap and for raising said series when desired to give access to the gap, substantially as described.

4. The combination in a printing-press, of 115 a paper-carrier provided with a gap, and with grooves on its off side, supporting-fingers carried in said gap and resting at one end on the impression side of the gap and in substantial contact at the other end with the off side of
 120 the gap, front gages provided with recessed blades adapted to enter said grooves and fit over said fingers, and means for raising and lowering said gages, substantially as described.

5. The combination in a printing-press, of 125 a paper-carrier provided with a gap, front gages adapted to coact with said carrier, and an adjustable stop-lever *m'* for said gages, substantially as described.

6. The combination of a paper-carrier A, a 130

front-guide shaft *g* carrying front guides or
gages *e* coacting to preserve a sheet in gage
position, and a front guide adjustable stop-
lever *m'* for adjusting the position of said
5 gages to said carrier A, substantially as de-
scribed.

Signed at Plainfield, in the county of Union

and State of New Jersey, this 9th day of Sep-
tember, A. D. 1898.

JOHN BROOKS.

WINFIELD S. HUSON.

Witnesses:

WILLIAM B. HARSEL,

L. R. SCHOFIELD.