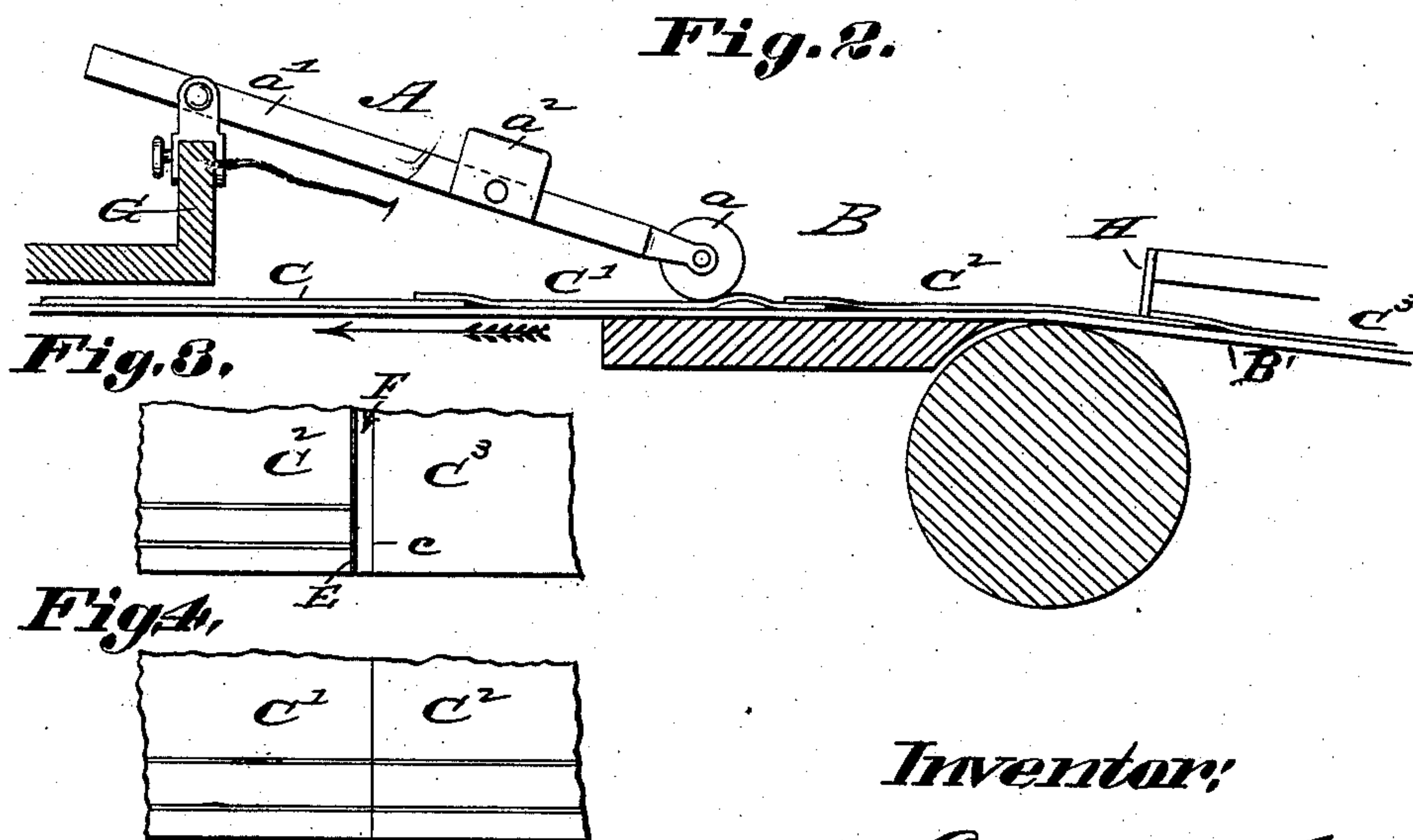
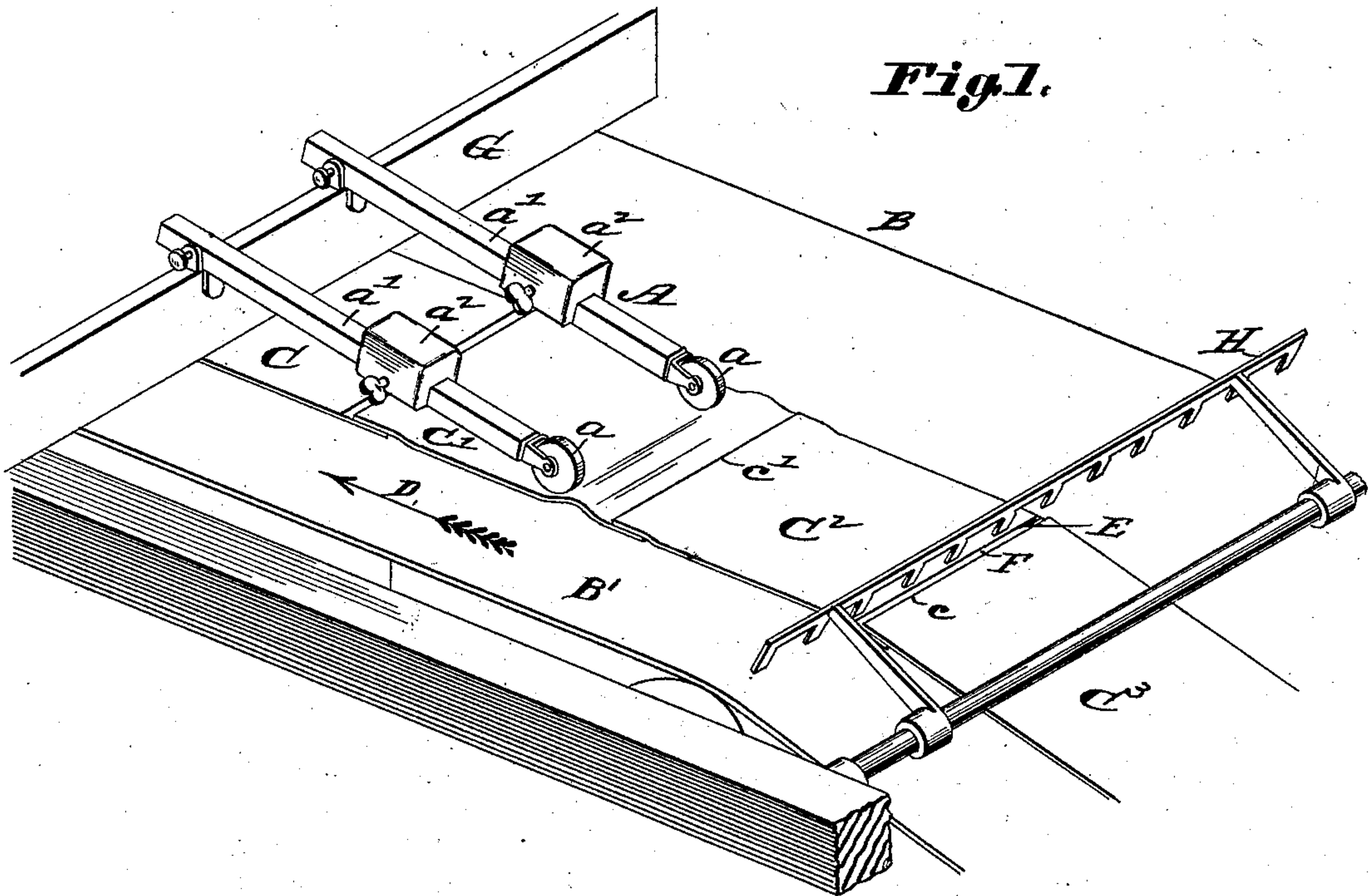


(No Model.)

E. KNAPP.
RULING MACHINE.

No. 302,002.

Patented July 15, 1884.



Attest:
Charles Pickles
J. W. Hoke.

Inventor:
Edward Knapp
by C. Moody atty

UNITED STATES PATENT OFFICE.

EDWARD KNAPP, OF ST. LOUIS, MISSOURI, ASSIGNOR OF TWO-THIRDS TO
GEORGE D. BARNARD, OF SAME PLACE.

RULING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 302,002, dated July 15, 1884.

Application filed August 8, 1883. (No model.)

To all whom it may concern:

Be it known that I, EDWARD KNAPP, of St. Louis, Missouri, have made a new and useful Improvement in Ruling-Machines, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a view in perspective showing that part of a ruling-machine with which the improvement is immediately connected; Fig. 2, a vertical longitudinal section; and Figs. 3, 4, details, being top views illustrating the different positions of the paper while passing through the machine.

The same letters of reference denote the same parts.

In ruling paper this difficulty occurs: The distance from the top edge of the sheet of the head-line across the sheet is apt to vary upon different lots of paper, but to such slight extent, or so that the striker cannot be set to properly regulate the passage of the sheets through the ruling-machine—that is, the striker lifts slightly too late, and in consequence the bottom edge of the sheet about to pass under the striker does not coincide with the cross head-line upon the sheet in advance, and when the vertical lines are ruled they will extend above the head-line.

To obviate this difficulty is the aim of this improvement, which consists in a retarding device, A.

The sheets $C C' C^2 C^3$ are represented as passing through the machine on the feed-apron B' in the direction indicated by the arrow D . In Fig. 1 the striker H has lifted but just after the cross-line E upon the sheet C^2 has passed. This causes a space, F , to occur between the

bottom edge, c , of the sheet C^3 and the cross-line E . A similar space is supposed to have occurred between the bottom edge, c' , of the sheet C^2 and the cross-line upon the sheet C' ; but, by means of the device A , the sheet C' is retarded in its movement sufficiently for the edge c' to come over the cross-line upon the sheet C' . The essential feature of the device A is a roller or rollers, $a a$, which bear down upon the sheet C' , and thereby cause its movement to be retarded so that the succeeding sheet C^2 in consequence slips farther onto the sheet C' . The rollers $a a$ are held in place by the arms $a' a'$, which in turn can be attached to any suitable fixture upon the machine—for instance, the cross-bar G . The pressure exerted by the rollers $a a$ can be varied by the adjustable weights $a^2 a^2$. A brush might be used in place of the rollers $a a$. The vertical lines are ruled upon the sheet C' while it is in its proper relation to the sheet C^2 .

I claim—

1. A ruling-machine provided with means, substantially as described, for retarding the forward movement of the sheets of paper, said retarding means being located in advance of the striker, whereby the successive sheets are made to overlap the desired distance at the contiguous edges.

2. In a ruling-machine, the combination of the bar G and the retarding device A , consisting of the arms $a' a'$, the rollers $a a$, and the weights $a^2 a^2$, with the feed-apron, all arranged and operating as described.

Witness my hand this 27th day of June, 1883.

EDWARD KNAPP.

Witnesses:

C. D. MOODY,
SOLON N. SAPP.