

wedge-shaped point of the spring-catch *k*, which locks the slide firmly in its position at each end of its movement. The catch *k* has on the lower end, so formed and placed as to effect its purpose, a boss, over which the strikers pass to raise the catch out of the notch when the slide is to be moved, and drop it again into the other notch when the movement is completed. The lever *h* is formed and attached to the frame as shown in Fig. 1, and is used to communicate motion to the pen-beam through the slides *I* being actuated by the strikers *l l*, as specified below.

The strikers *l l* are formed as shown in the drawings, Fig. 4, and are designed both to communicate motion to the pen beam and to operate the catch *k*, as mentioned above. These strikers are used in pairs, only one pair being represented in the drawings, though on the working-machine as many pairs of these strikers are required as there are headings or blank spaces on the sheet to be ruled. These strikers have each a beveled slot cut through the end in the proper position and properly formed to meet the pin on the lower end of the lever *h* to change the position of the lever by the bevel of the slot as it passes over the pin, and, as the position of the lever is to be reversed as each of the strikers pass the pin successively, it is obvious that the bevel of the slot in the two of each pair must run in opposite directions with regard to each other, and this constitutes the only difference between the two of a pair. For the purpose of distinguishing one from the other in further explanation we designate the one which throws the lever out from the wheel and brings the pens in contact with the paper as "No. 1" and the one which reverses this position as "No. 2."

The use of the striker-wheel *K* is to hold the strikers in position and move them as required.

We now describe the adjustment and operation of the machine as a whole as follows:

To properly adjust the machine for the work in hand it is first started and moved till the gaging device assumes the position represented in the drawings, Fig. 3. The fingers are then placed by loosening the set-screws and sliding the fingers on the shaft till they all fall within the width of the sheets to be ruled and the points are ranged in line and set so as to strike a little below the edge of the spring-plate *e*. They are then secured in position by setting the screws firmly down on the shaft. The machine is then started again and moved to the point at or near which all the sheets must be fed upon the machine to insure their meeting the gaging device correctly. This point is that at which the side gage, *G*, falls back from the paper and the other parts of the gaging device assume the positions represented in the drawings, Fig. 3b. A sheet of paper is now taken from the ream or pile of paper to be ruled and placed upon the feed-apron *Q*, with the side resting against the side gage, *G*, and the

corner on the head of the sheet under the slip *n*, which slip is attached to the gage to prevent the edge from turning and sliding up on the gage. The sheet is then dropped on the apron and allowed to run freely with it. The machine being moved on the sheet runs into the gaging device, is there properly gaged by the operation of this device, as specified above, and passes onto the pens. When the head-line or point at which the lines should commence is exactly under the points of the pens, the machine is stopped, and a striker No. 1 is placed on the wheel *K*, so that it comes in contact with the pin on the end of the lever *h*, and also with the boss on the spring-catch *k*, and secured in position by the set-screw. The machine is then moved on till the point on the sheet where the lines are to stop is under the pens, when the machine is stopped again, and a striker, No. 2, is placed on the wheel in the same manner as the first. If there is but one heading or blank space on the sheet to be ruled, of course this last-named point will be at the end of the sheet, and the machine is now adjusted for use. But if there is more than one heading, a pair of strikers for each heading is placed on the wheel, as specified above, and when thus adjusted the machine may be moved by hand, steam, or other power, and the sheets being fed upon it successively, as above directed, will be correctly ruled according to the pattern arranged on the machine.

Having thus stated the object of our invention and fully and clearly described its construction and operation, we now state our claims, as follows:

1. The mechanical combination described in this specification, and designated as the "gaging device," meaning and intending to include in this claim any combination whatever of any of the parts or elements which constitute this device, amounting to a mechanical equivalent of the same, and this we claim, whether such combination is used on single or double machines either for ruling or printing, or whatever may be the design or purpose for which this combination is used to gage or regulate the run of paper on a machine.

2. The mechanical combination described, and designated in this specification as the "striking device," or any combination constituting a mechanical equivalent of the same.

3. The shaft *F*, with all the cams and devices connected therewith, designed to connect all the parts of the two devices above specified and claimed, and to operate the same in connection with each other and with the other parts of the machine, as described and set forth in this specification, meaning and intending to include in this claim any device or arrangement constituting substantially a mechanical equivalent thereof.

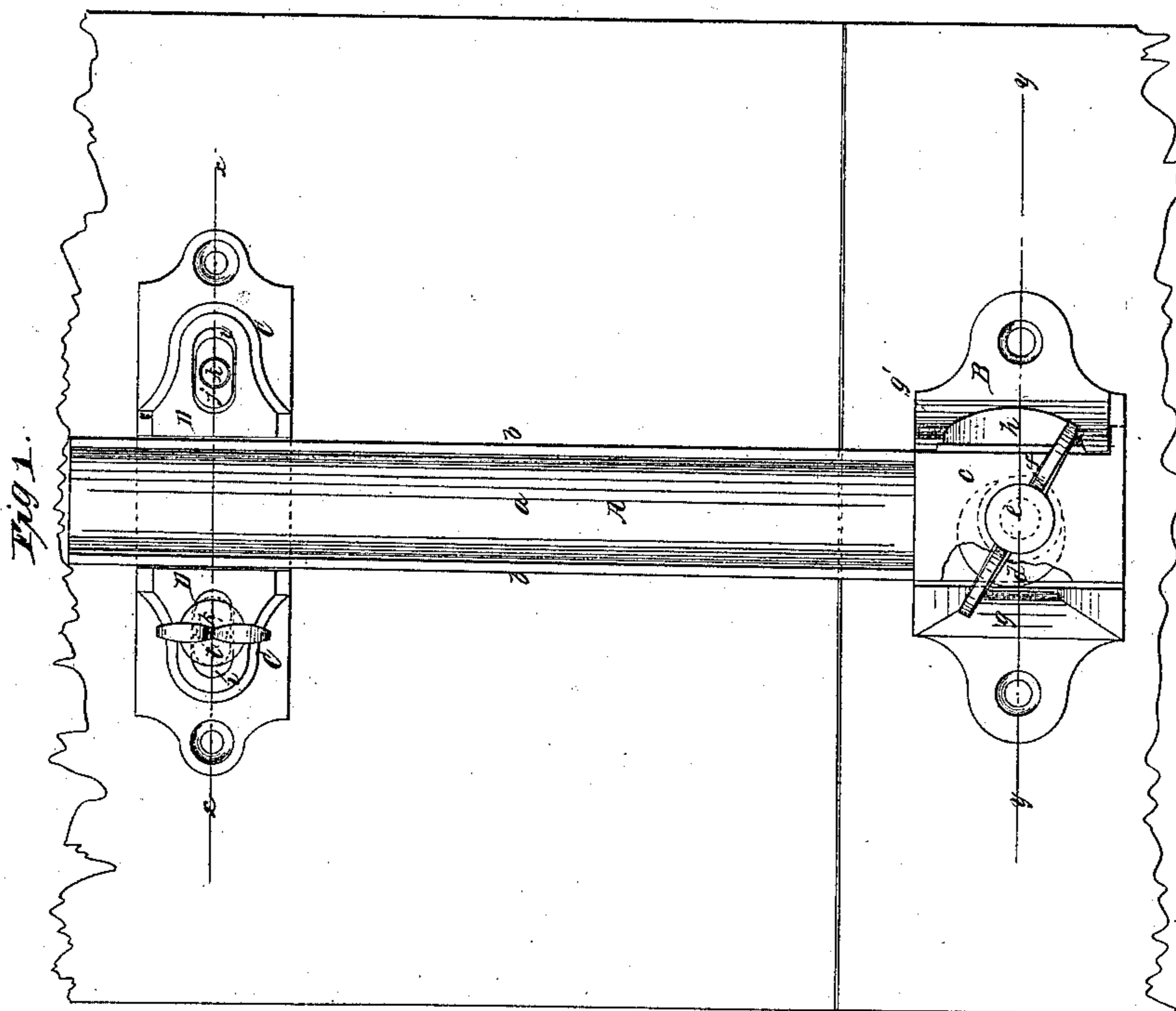
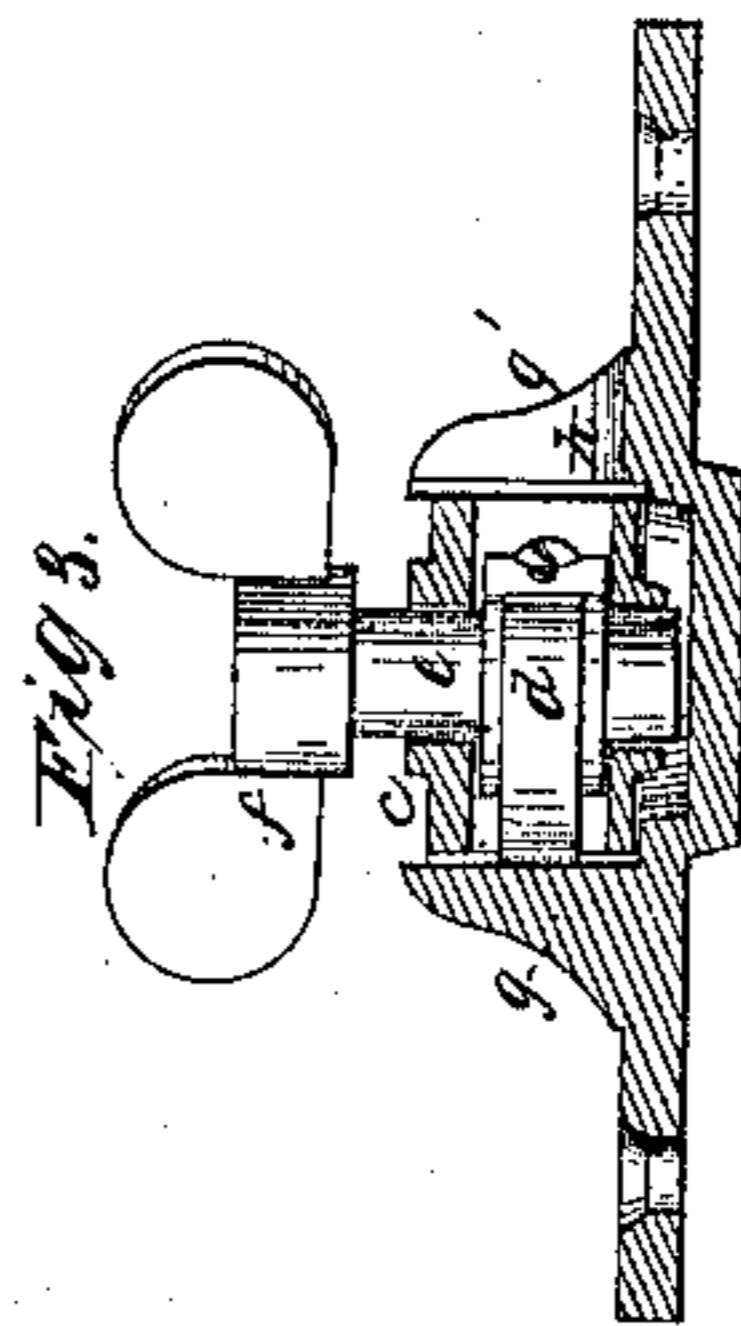
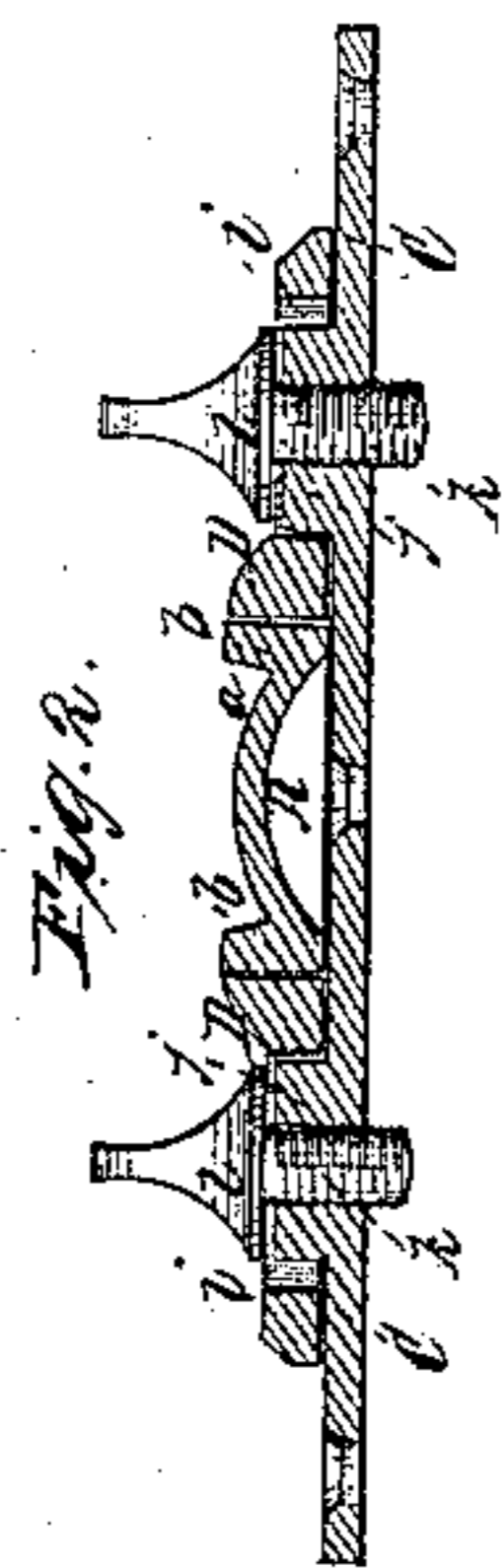
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*Patented Apr. 19, 1864.*



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