

(No Model.)

H. R. GALE.
SPACING INSTRUMENT.

No. 425,168.

Patented Apr. 8, 1890.

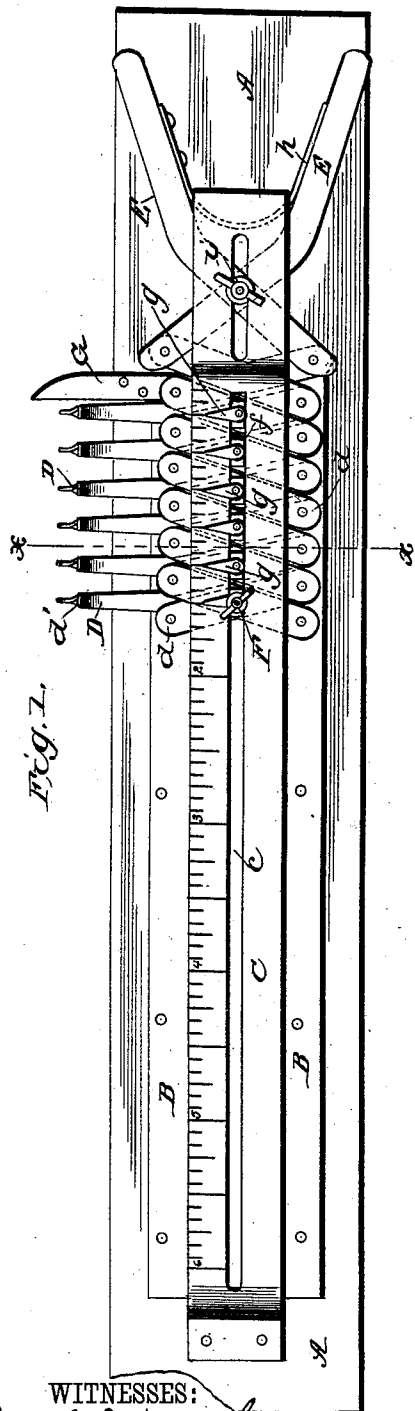
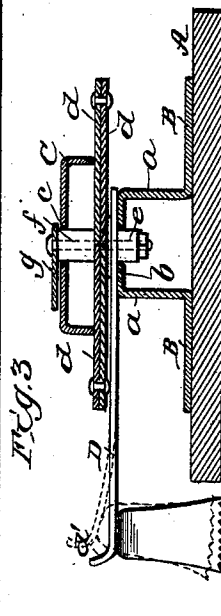
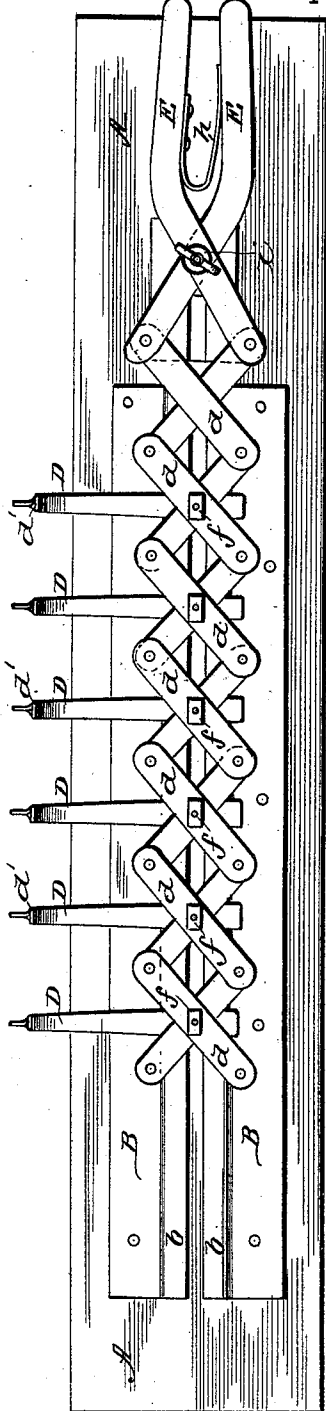


Fig. 2.



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SPACING-INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 425,168, dated April 8, 1890.

Application filed June 14, 1889. Serial No. 314,314. (No model.)

To all whom it may concern:

Be it known that I, HIRAM R. GALE, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and useful Improvement in Spacing-Instruments, of which the following is a specification.

The object of my invention is to provide a device for the use of printers for measuring and marking into equal spaces card-board and paper preparatory to, subdividing the same or cutting it up into sizes for cards, tickets, &c., the device being intended to be applied to the sheets of paper or card-board, so as to ascertain at a glance into what number of subdivisions of equal size it may be divided to the best advantage.

It consists in the peculiar construction and arrangement of a series of marking-arms mounted upon and combined with a set of "lazy-tongs," whereby an increase or diminution of the space between the first two arms also effects a corresponding increase or diminution of the space between all the other arms of the series, as will be hereinafter fully described.

Figure 1 is a plan view showing the arms drawn up for subdivision of the paper into small cuts. Fig. 2 is a similar view with the indicator scale and pointers removed and showing the arms extended for subdividing the paper into larger cuts, and Fig. 3 is a vertical transverse section through the line xx of Fig. 1.

In the drawings, A represents the base plate or frame, which is designed to be set upon a table and detachably attached thereto by screws, clamps, or other equivalent means. This base-plate may be of wood or metal and is in the nature of a board or plate, preferably about six feet in length. Upon this plate are attached two flanged metal strips B B, whose adjacent edges are bent up at a and toward each other at b , leaving a space between the two edges $b b$ of uniform width to form a guide, as hereinafter described.

C is an indicator-plate mounted at its ends on the base-plate A, so as to stand a short distance above the flanged strips B B. This indicator-plate has a slot c along its entire length, which corresponds to the space between the edges b of the flanged strips B. Be-

tween the flanged strips B and the indicator-plate C are arranged the lazy-tongs and the marking-arms. These lazy-tongs consist of a series of levers d of equal length, crossed upon themselves and jointed together at the middle point, where they cross, and also at their outer ends. To each of these middle joints of the lazy-tongs there is fastened a sliding block e , that travels in the guide formed by the adjacent edges b of the flanged strips B, and to each of these blocks is fastened a marking-arm D. These marking-arms are made of flat spring-steel, so as to be elastic, and project at their outer ends beyond the base-plate A, so as to rest upon the edge of the sheet of paper to be marked. These marking-arms have at their ends thumb-pieces d' , and beneath these thumb-pieces the ends of the marking-arms are bent down and terminate in blades that have toothed edges adapted to puncture the paper and make a visible mark. On the opposite side of the lazy-tongs there is at each middle joint a guide-block f , that slides in the groove c of the indicator-plate C. Each of these blocks has a pointer or index-hand g , attached to and moving over the graduated scale on the indicator-plate. Each of these pointers corresponds to one of the marking-arms.

At the end of the lazy-tongs there are a pair of thumb-levers E E, which are jointed together after the manner of the arms of a pair of pinchers. The short ends of these levers are attached to the outer ends of the first pair of arms of the lazy-tongs and the long ends of these levers are forced apart by a spring h . The fulcrum of these levers is fixed to the base-plate, and its upper end is screw-threaded and provided outside the indicator-plate with a thumb-nut i , which, when screwed down tight, clamps the levers together and fixes the adjustment of the levers, and consequently the position of the lazy-tongs and markers.

G is a gage-bar fixed to the base-plate and against which one end of the sheet of paper is laid that is to be subdivided. F is a set-screw at the outer end of the lazy-tongs, by which that end may be tightly clamped to the indicator-plate and held when the proper adjustment has been attained.

In making use of my invention the paper or card-board is laid on the table, with one end against the gage-bar G and the edge of the paper extending along under the row of marking-arms parallel to the base-plate. The thumb-levers E E are now squeezed between the fingers, and by this means (assisted with the hand on the set-screw at the other end) the lazy-tongs are extended and the markers are distributed along the sheet of card-board at equal distance from each other until the full length of the sheet has been reached, and then each marker-arm is raised with the finger and thumb, and, being suddenly released, its elasticity causes its toothed end to make a mark on the paper as a guide for subdivision.

The marking-arms are preferably numbered 1 2 3, &c., from the gage-bar G, so that the operator may see at a glance into how many equal spaces the sheet can be divided without waste.

I am aware that it is not new in machines for ruling paper to arrange the pens in a series upon lazy-tongs, and I do not claim this construction, broadly.

Having thus described my invention, what I claim as new is—

1. The measuring and marking device herein described, consisting of a pair of lazy-tongs

provided with a series of spring marking-arms made elastic in their length, and having at their ends downturned and toothed edges adapted to make an impression on the paper by being raised and suddenly released, as described.

2. In a spacing-instrument, the combination, with a frame having guides, of a set of lazy-tongs composed of a series of levers crossed and pivoted to each other at their middle points of intersection, and also jointed together at their ends, a set of right-angularly-arranged marking-arms having a single connection with the lazy-tongs and that at the middle points of the levers where they cross, and a set of guide-blocks arranged also at the same points of crossing and moving in the guides, substantially as shown and described.

3. The combination, with the lazy-tongs, the base-plate, the marking-arms, and indicator-plate C, of the operating-levers E E and the clamping-nut arranged upon the fulcrum of the levers for fixing their adjustment, substantially as described.

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Witnesses:

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