(No Model.)

F. KITTELL & S. J. BOIES

LINE INDICATOR.

No. 259,766. Patented June 20, 1882.

Fig. 1.

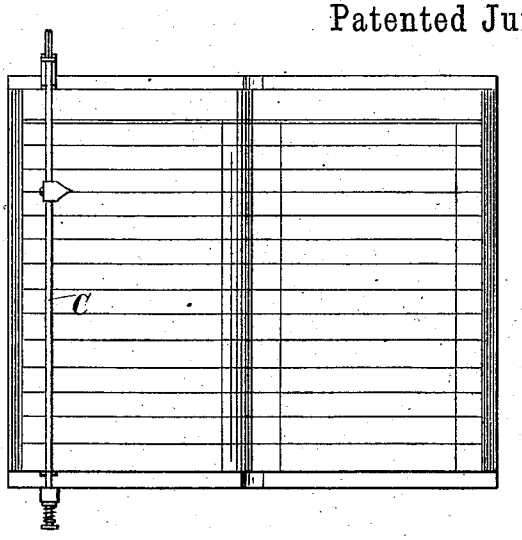


Fig. 2.

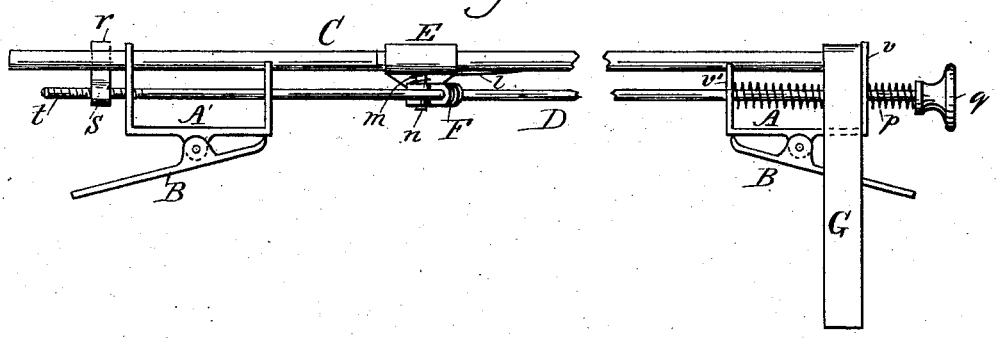
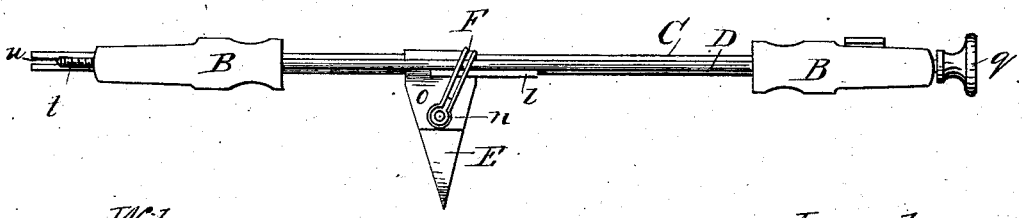


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANK KITTELL AND SAMUEL J. BOIES, OF CHICAGO, ILLINOIS.

LINE-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 259,766, dated June 20, 1882.

Application filed April 2, 1881. Renewed April 25, 1882. (No model.)

To all whom it may concern:

Be it known that we, FRANK KITTELL and SAMUEL J. BOIES, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Adjustable Line-Indicator; and we hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, of which—

Figure 1 is a plan view of our device as applied to a book; Fig. 2, a side elevation of the device detached, and Fig. 3 an inverted plan view of the same.

Our invention relates to an apparatus for indicating lines to facilitate the operation of copying. The obvious requisites of such a device are that it shall be adapted for easy attachment to books and papers of different sizes and characters; that the pointer shall be instantly transferable by conveniently-operated mechanism from any line to the next below; that the throw of the pointer shall be capable of convenient graduation for different widths of space between the lines; and also that the pointer shall be readily transferable from the bottom to the top or to any intermediate point, all of which functions are fully accomplished by our said apparatus, a description of which is as follows:

A and A′ in the drawings are two stirrups, each having upon its under face a spring-clamp, B, to hold it to the paper or book.

C is a rod rigidly secured to the arms *v* and *v′* of the stirrup A, and D is a rod passing through an opening in each arm of the stirrup A, and adapted to slide freely in the same. Both rods pass through openings in the arms of the stirrup A′, thus allowing that stirrup to slide freely upon them. The outer end of the rod C is provided with a slot, *u*, and the corresponding end of the rod D is screw-threaded, as shown at *t*, and provided with a nut, *s*, having an extension, *r*, which enters the slot *u* of the rod C. The inner end of the rod D extends beyond the outer arm of the stirrup A, and is provided with a thumb-nut, *q*. A coiled spring, *p*, surrounding the rod D and compressed between the inner arm, *v′*, and the thumb-nut *q*, (the opening in the arm *v* being sufficiently large to allow the spring as well as the rod to pass through it,) tends to throw the rod D back whenever the thumb-nut is pressed forward.

E is a pointer bent around the rod C, as shown, and sliding upon it and projecting downward from the under part, *o*, of this pointer is a pin, *n*, carrying a friction-pawl, F, which turns upon the pin *n* as a pivot, and is maintained in the oblique position indicated by means of the coiled spring *m* surrounding the pin, with its upper end soldered thereto and its lower end soldered to the pawl. The opening in the pawl through which the rod D passes is diagonal, as usual in devices of this nature, thus causing it to grip the rod when the latter is moved in one direction, and to allow it to slide through freely when moved in the other. A flat spring, *l*, rigidly attached to the pointer and lying against the side of the rod C, serves to maintain the pointer at right angles with the rod, and also prevents it from sliding when the rod is pushed forward.

The operation is as follows: The apparatus is secured to the book or paper by means of the spring-clamps in the position shown in Fig. 1, the sliding stirrup A′ permitting it to be readily adjusted to different lengths. This done, the pointer is slid up to the required point by pressing against the projecting end of the friction-pawl, such pressure serving to turn the said pawl to the left upon its pivot in opposition to the spring *m*, and thus loosening its clutch upon the rod D. As soon as the pressure is relaxed the spring *m* instantly throws it back to the position indicated in the drawings. When a line has been copied and it is desired to carry the pointer down to the next line the thumb-nut *q* is pressed forward to the full limit and then released, when the spring *p* causes the rod to return to its original position. In going forward the rod passes freely through the pawl without moving the pointer; but in returning it engages with the pawl, carrying it, together with the pointer, down one space. This is repeated for every line.

G is a bar depending from the rod C for the purpose of resting against the edge of the desk, and thus preventing the paper or book from being displaced by the pressure against the thumb-nut.

To graduate the device for different distances between lines, the thumb-nut *q* is turned to the left or right, thus turning the rod D in the nut *s* at the forward end and lengthening or shortening the distance from the thumb-nut to the stirrup, as circumstances may require.

What we claim as new, and desire to secure by Letters Patent, is—

1. In a line-indicator, the combination of a rod, mechanism for securing the same in position upon the page to be copied, a pointer adapted to slide upon the said rod, and mechanism to be operated by the hand adapted to carry the said pointer downward over uniform spaces, one space at a time, all substantially as described.

2. In a line-indicator, the combination of a rod, mechanism for securing the same in position upon the page to be copied, a pointer adapted to slide upon the said rod, mechanism to be operated by the hand adapted to carry the said pointer downward over uniform spaces, one space at a time, and adjusting mechanism for permitting the width of the spaces to be graduated at will, all substantially as described.

3. The combination of the stirrups A and A′, rods C and D, thumb-nut *q*, spring *p*, pointer E, friction-pawl F, and mechanism for securing the device in position, the whole being constructed and arranged to operate substantially as described.

4. In combination with the stirrups A and A′, rods C and D, thumb-nut *q*, spring *p*, pointer E, and friction-pawl F, combined and operating substantially as described, the graduating device, comprising the screw-nut *s* upon the outer end of the rod D, and provided with the extension *r*, entering a slot, *u*, in the rod C, as set forth.

FRANK KITTELL.
SAMUEL J. BOIES.

In presence of—
P. C. DYRENFORTH,
ANNIE GARLAND.