(No Model.)

E. S. BELDEN.

LINE INDICATOR FOR TYPE WRITING MACHINES.

No. 307,164. Patented Oct. 28, 1884.

Fig. 1.

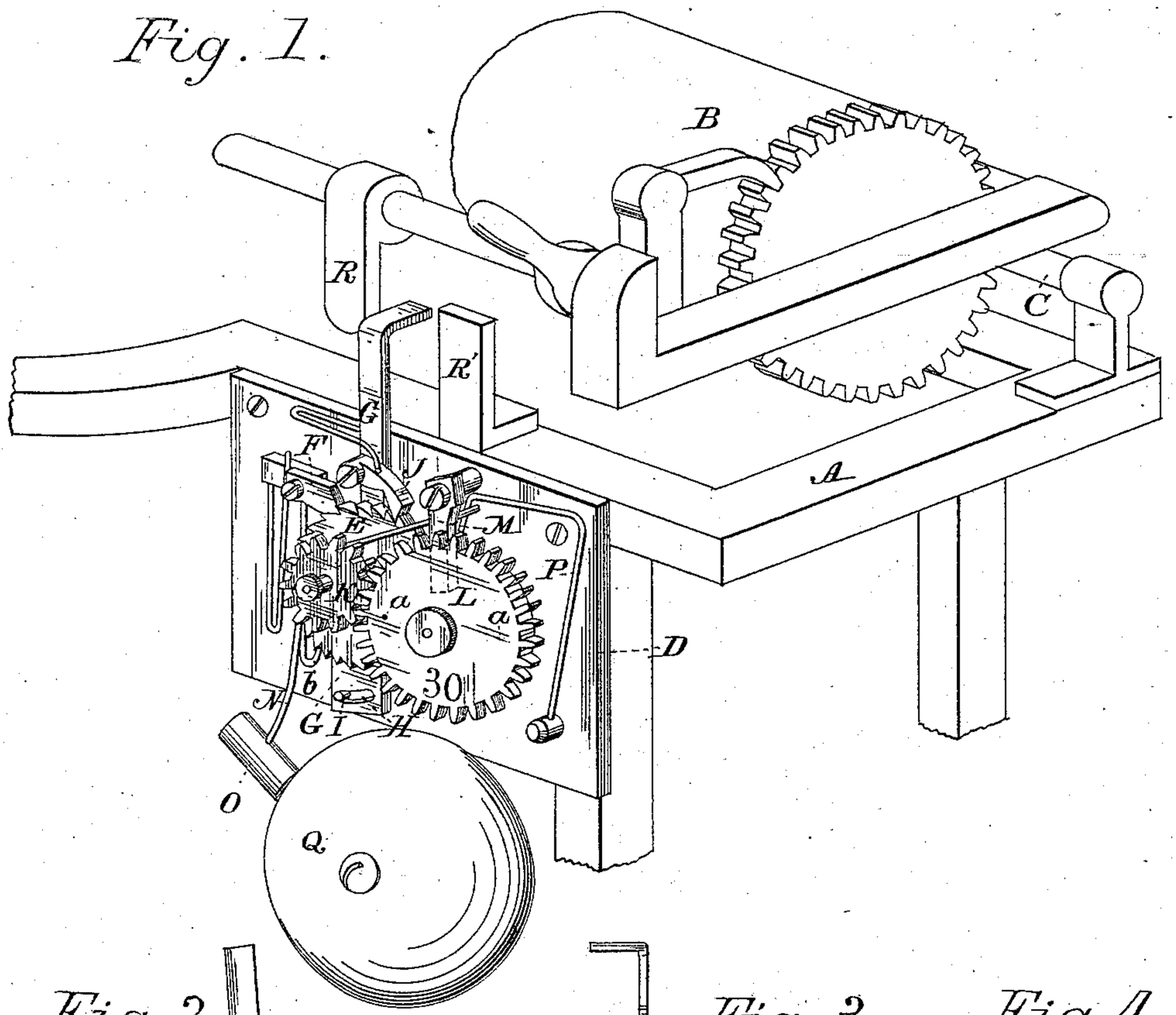


Fig. 2.

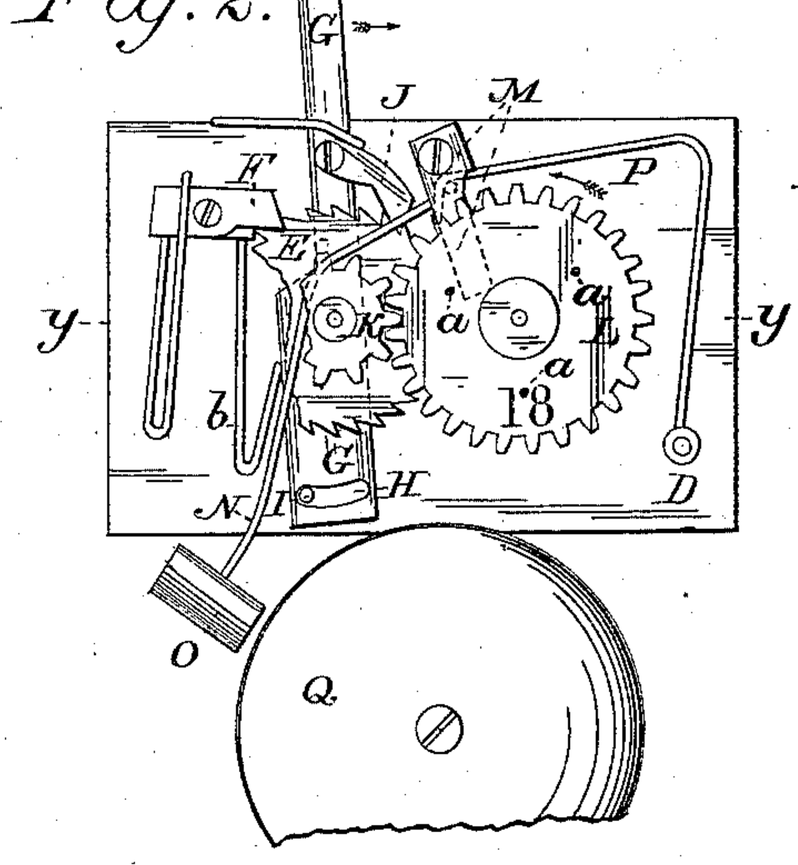


Fig. 3.

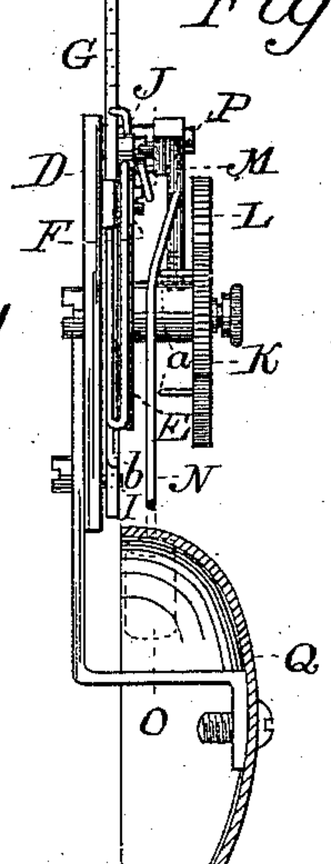
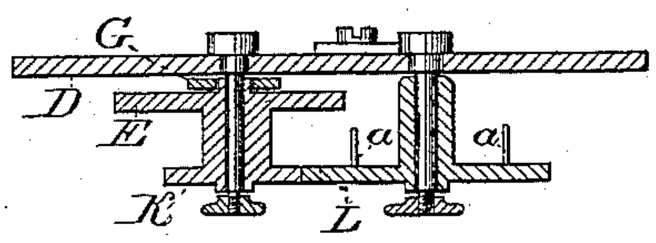


Fig. 4.



Witnesses,
Geo. H. Strong
J. A. Sousse.

Inventor,
E. S. Belden
By Dewey & Co.
Attorneys

UNITED STATES PATENT OFFICE.

EDWIN S. BELDEN, OF SAN FRANCISCO, CALIFORNIA.

LINE-INDICATOR FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 307,164, dated October 28, 1884.

Application filed March 1, 1884. (No model.)

To all whom it may concern:

Be it known that I, EDWIN S. BELDEN, of the city and county of San Francisco, and State of California, have invented an Improvement in Line-Indicators for Type-Writing Machines; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in type-writing machines; and it consists in the combination and arrangement of devices hereinafter described and claimed.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view showing a portion of one end of a type-writing machine with my attachment. Fig. 2 is a front view of the attachment. Fig. 3 is an edge view in elevation. Fig. 4 is a horizontal section taken on line *y y*, Fig. 2, of lever-arm G, ratchet-wheel E, pinion K, and gear-wheel L.

In the operation of type-writing and similar machines it is customary to indicate when the end of a line has been reached by a small gong or bell, which is struck by suitable means.

In my device, A is a portion of the frame of a type-writing machine. B is the roller or drum around which the paper passes, and against the lower part of which the type strike in making their impressions. C is a horizontal rod or guide, upon which the carriage travels, carrying with it the paper, so that the type may print upon it successively from one side to the other in the usual manner.

To the stationary frame A is secured a plate, D, having journaled upon its face the ratchet-wheel E. A pawl, F, at one side engages the teeth of the wheel and prevents the wheel from being turned backward, the pawl being held in contact with the wheel by a spring, as shown. Behind this wheel is a lever-arm, G, which is journaled upon the same shaft, and extends upward and downward from it, as shown. The lower end is broad enough to have a curved slot, H, made in it, and a pin, I, projecting into the slot from the plate serves as a stop, so that the lever may oscillate a certain distance from side to side. This lever has a pawl, J, pivoted to it above the wheel E, and kept down, so as to engage it by a light spring. When the lever is drawn back by the action of a light spring, *b*, the pawl F holds the ratchet-wheel, and the pawl J moves over the teeth of the wheel. When the lever is moved forward, its pawl J, engaging the teeth of the wheel, moves it forward, the other pawl, F, rising to allow the movement. Upon the same shaft with the ratchet-wheel is a pinion, K, which engages the teeth of a gear-wheel, L. The wheel L has pins *a* projecting from its face, and these pins move a lever, M, which carries the arm N of a hammer, O. A spring, P, presses upon the lever or the hammer-arm, so that when released from the pin *a* upon the wheel L the hammer will fall and strike a bell, Q. The lever M is fulcrumed or pivoted to the plate D. The lever-arm G projects upward, so as to be engaged by an arm, R, upon the traveling carriage of the machine, and thus be moved forward to the stationary stop R′ each time when the carriage has returned the paper to commence a new line, the stop limiting the forward movement of the lever. This movement of the lever moves the gear-wheel L forward one-half a tooth through the medium of the ratchet-wheel E and pinion K. If the paper has eighteen, twenty-eight, thirty, or any other number of lines, the gear L, which has the corresponding number of teeth, will be placed upon the shaft or spindle. If thirty-line paper is used, the gear L will have two pins, *a*, and thirty teeth, thus operating the hammer at each fifteenth tooth. As the gear-wheel moves forward half a tooth for each line of the paper advanced, it will be manifest that the hammer will strike the bell at the bottom of the page and give notice of the fact. If eighteen-line paper is used, the wheel may have twenty-seven teeth and three pins, making nine teeth between each two pins. The wheels may be easily removed and replaced by removing a thumb-nut.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination, with the carriage of a type-writer or similar machine, and the pawl-carrying lever operated by the carriage when returned from the end of a line, of the ratchet-wheel and its holding-pawl, the toothed pinion, the gear-wheel provided with pins, and the bell-hammer, all constructed to operate substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand.

Witnesses: EDWIN S. BELDEN.

S. H. NOURSE,

H. C. LEE.