(No Model.)

A. ASHBY.

TYPE WRITING MACHINE.

No. 549,421. Patented Nov. 5, 1895.

Fig. 1.

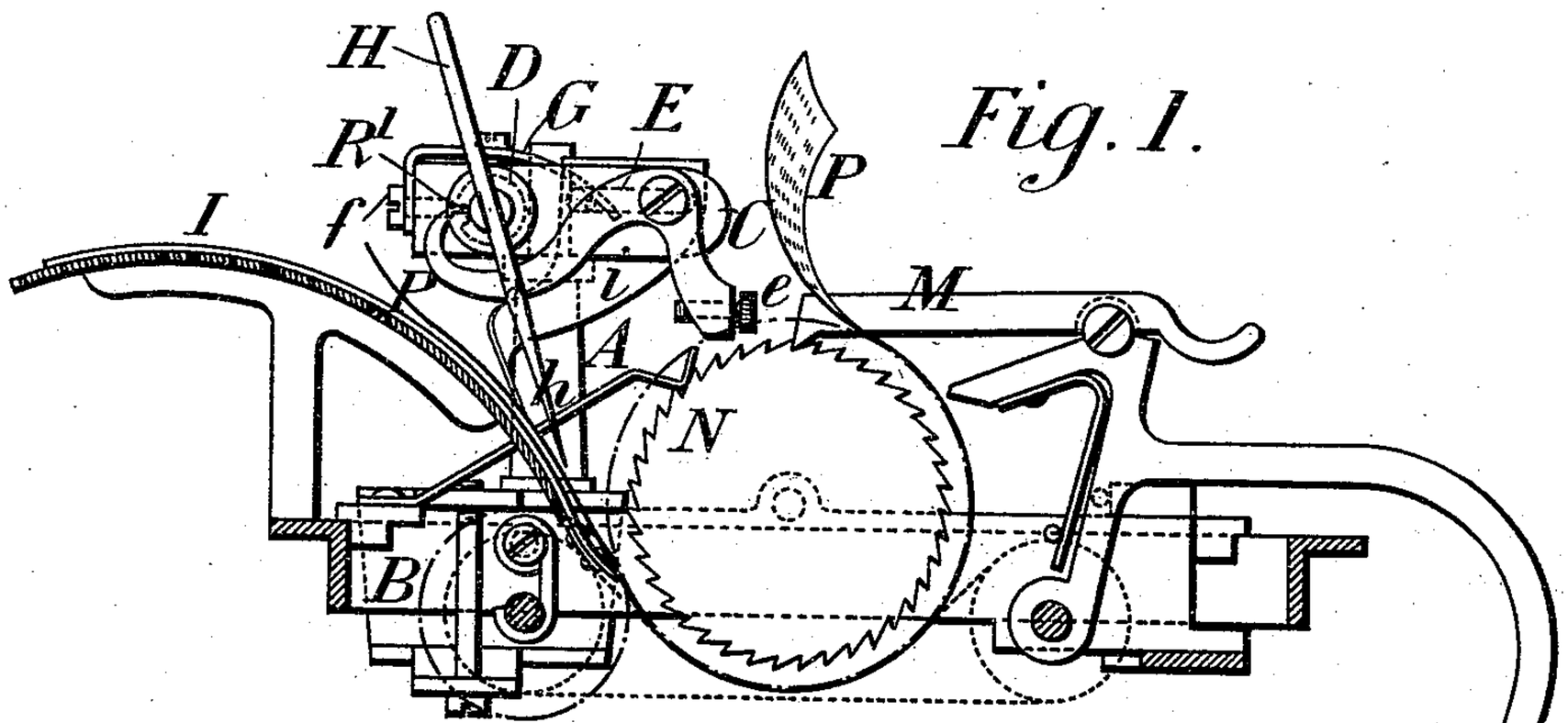


Fig. 2.

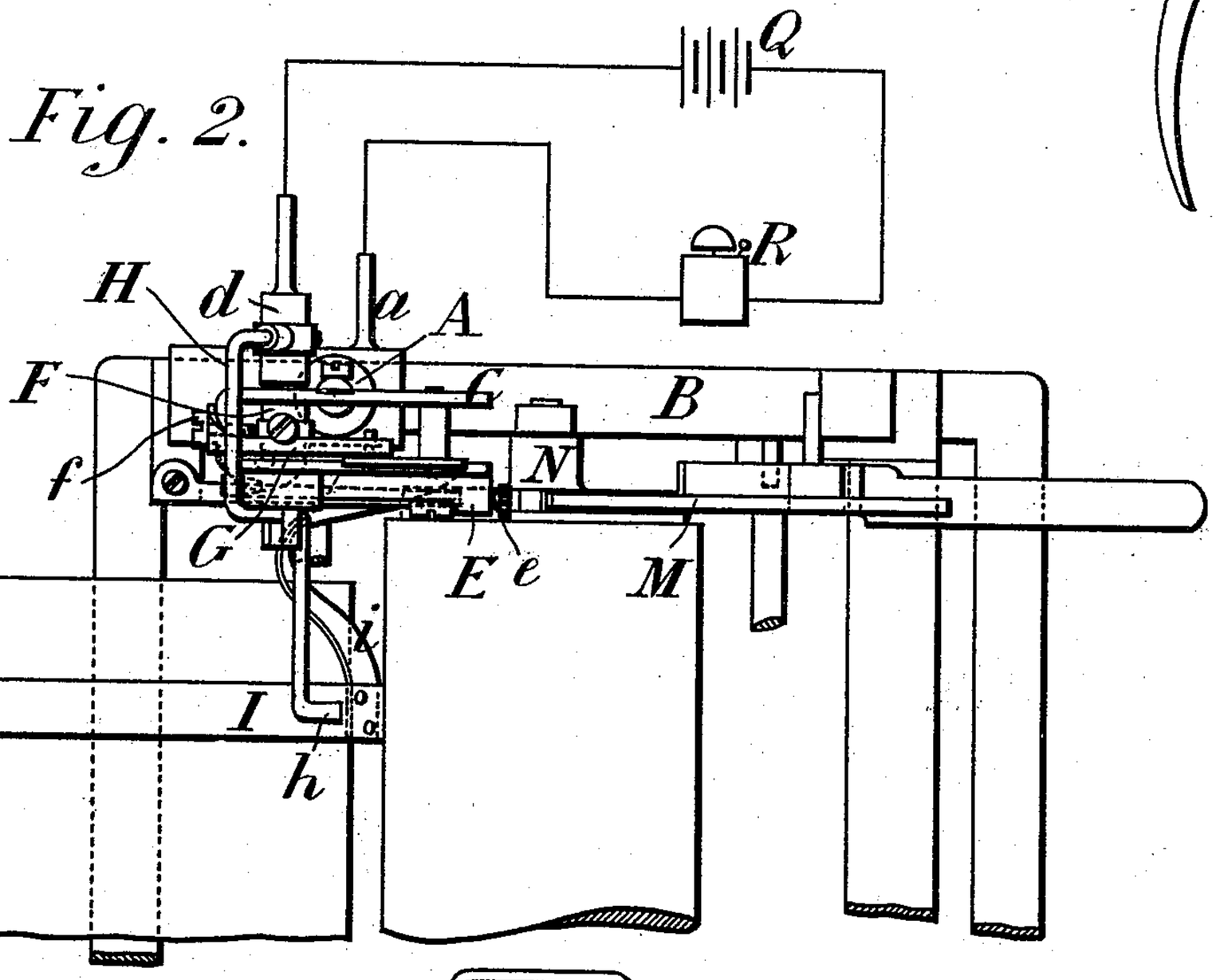


Fig. 4.

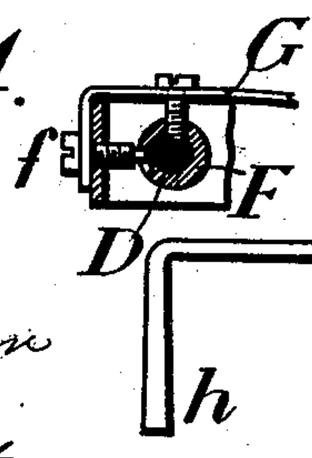
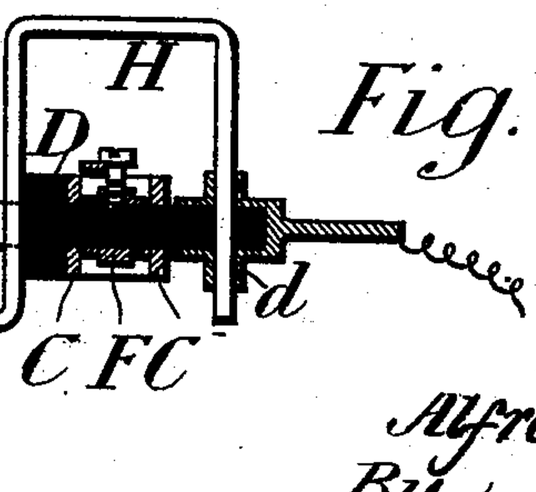


Fig. 3.



Witnesses,
Thos. A. Grose
Robert Everett.

Inventor.
Alfred Ashby.
By James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

ALFRED ASHBY, OF READING, ENGLAND.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 549,421, dated November 5, 1895.

Application filed July 13, 1895. Serial No. 555,874. (No model.)

To all whom it may concern:

Be it known that I, ALFRED ASHBY, a citizen of England, residing at Ashdene, Argyll Road, Reading, in the county of Berks, England, have invented an Improvement in Type-Writers, of which the following is a specification.

In the specifications of my United States Patents Nos. 531,893 and 531,894, dated January 1, 1895, I have described electrical apparatus for giving an alarm when the sheet of paper used in a type-writer has nearly ended, so that the operator may know when it is necessary to remove the sheet and supply a fresh sheet. For the apparatus described in these specifications it is necessary to fix a strip of conducting material around one or both of the rollers between which the paper passes, the apparatus being so arranged that electrical contact is made when the edge of the paper passes a certain part of the conducting-strip, and thus a circuit of a battery and bell is closed.

My present invention relates to a modification of this apparatus such that the conducting material on the roller or rollers is dispensed with and that the alarm apparatus can be at once clamped or otherwise fixed on the frame of a type-writer, which requires no special provision for bringing it into operation, as I shall describe, referring to the accompanying drawings.

Figure 1 is an end view partly in section, and Fig. 2 is a part plan of a known form of type-writer with apparatus according to my invention applied to it. Fig. 3 is a longitudinal section, and Fig. 4 is a transverse section of the spindle of the alarm apparatus.

On a column A, which is clamped or otherwise fixed on the end frame B of the type-writer, is mounted a frame C, having two parallel arms, in which are holes forming bearings for a spindle D, made of insulating material—such, for instance, as ebonite. On one of the arms C is pivoted a lever E, one arm of which carries an adjustable screw *e*. The other arm bends round its point, engaging at R′ in a notch of the spindle D. On the spindle D is held by a setting-screw between the arms C a boss F, having a notch to receive the end of a screw *f*, by which is fixed on the frame C a spring G, that bears against a pin on the lever E.

On the spindle D is fixed a boss *d*, through which and through a notch at the end of D pass two of the limbs of a bent wire H, having a flattened end *h* immediately over a metal strip I, which is fixed on a bracket *i*, projecting from the frame C. The paper P passes between the strip I and the end *h* of the wire H. A battery Q and bell R being arranged in circuit with the end of the boss *d* and a stud *a* projecting from the base of A, as diagrammatically indicated in Fig. 2, the apparatus operates as follows: M is the pawl which, acting on the ratchet-wheel N of the paper-roller, advances the paper the space of a line. Every time that this pawl acts it strikes the head of the screw *e*, thus moving the lever E and causing the spindle D to turn partly round, so that the wire *h* is moved to the strip I. So long as there is paper between *h* and I no electrical contact is made; but when the edge of the paper P passes beyond *h*, then *h* makes contact with I, closing the circuit of the battery and bell, which sounds, informing the operator that the edge of the paper has nearly reached the position where printing takes place. As the pawl M retreats, the spring G causes the spindle D to turn back as far as is permitted by the slot in which the screw *f* engages, bringing the parts to the position shown in Fig. 1, *h* being then out of contact with I. The bent wire H may be raised or lowered so as to bring *h* to a higher or lower position, according as it is desired to have a wider or narrower terminal margin of the paper.

Although in what precedes I have described a bell as the alarm which is to inform the operator that the margin of the paper is reached, obviously any other known electrical alarm, audible or visible, may be employed. As shown in the drawings, the paper-roller is in its farthest back position. When it is drawn forward to its position for another case of type, the strip I, being supported from the sliding frame B, moves forward with it, so that its position relatively to *h* remains unchanged.

Having thus described the nature of my said invention and in what manner the same is to be performed, I claim—

The combination with a typewriter, of a metallic strip mounted on the typewriter, an insulated wire, means for moving said wire toward the metallic strip at every advance movement of the paper for causing the wire to make contact with the metallic strip when the edge of the paper has passed, and a voltaic battery and alarm connected in circuit with the metallic strip and wire, substantially as and for the purposes described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 28th day of June, A. D. 1895.

ALFRED ASHBY.

Witnesses:
OLIVER IMRAY,
JNO. P. M. MILLARD.