

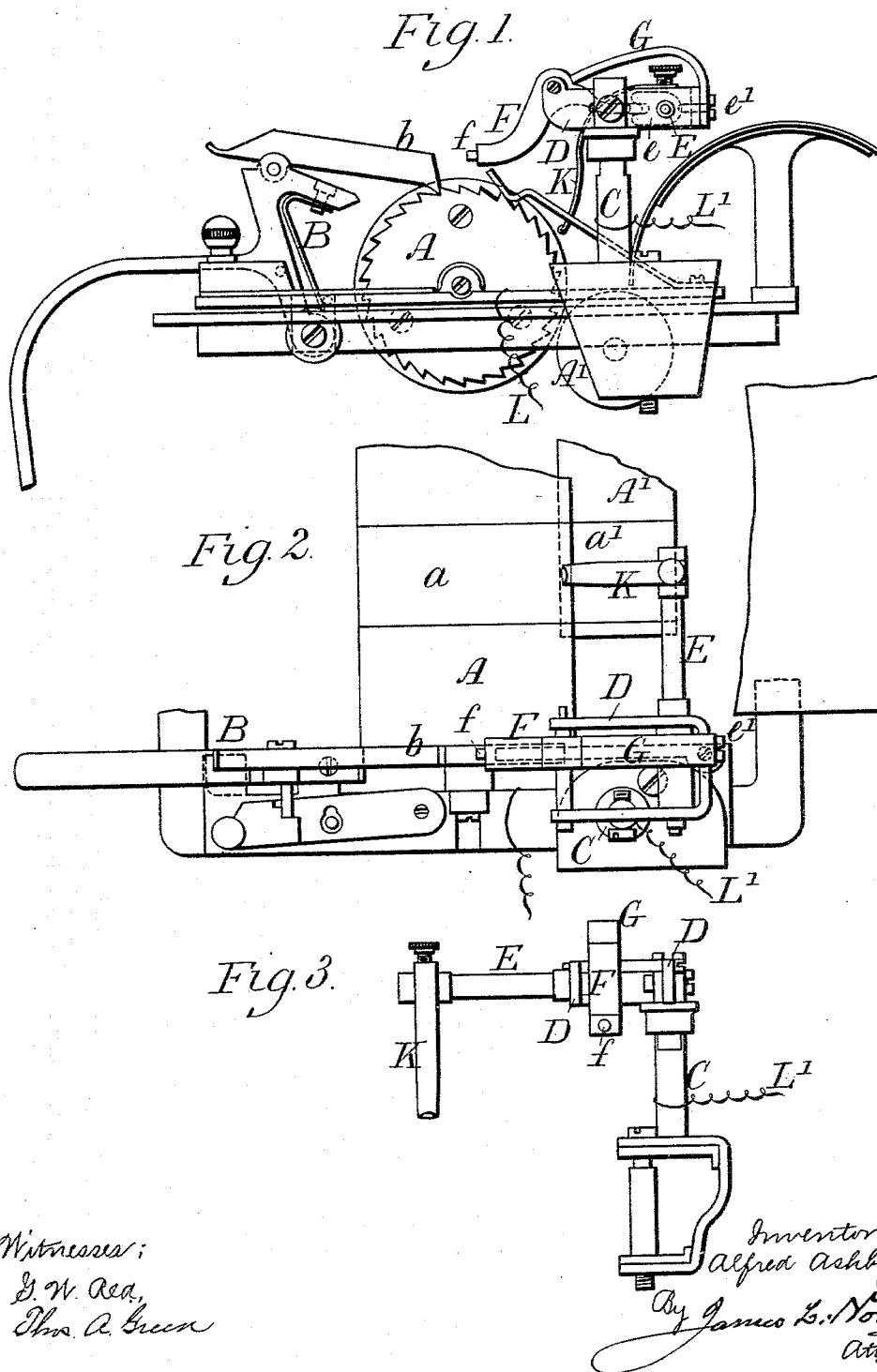
(No Model.)

2 Sheets—Sheet 1.

A. ASHBY.
TYPE WRITING MACHINE.

No. 531,894.

Patented Jan. 1, 1895.



(No Model.)

2 Sheets—Sheet 2.

A. ASHBY.
TYPE WRITING MACHINE.

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Fig. 4.

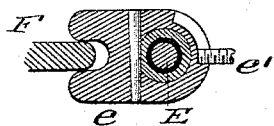


Fig. 5.

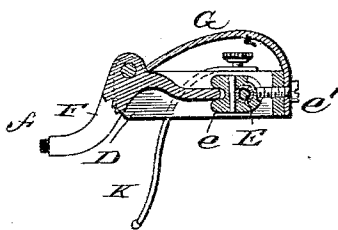
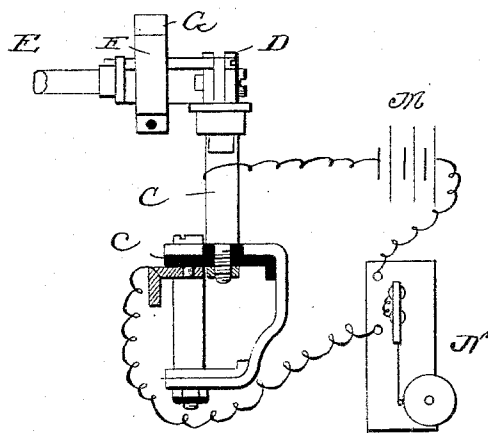


Fig. 6.



Inventor

Witnesses

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UNITED STATES PATENT OFFICE.

ALFRED ASHBY, OF READING, ENGLAND.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 531,894, dated January 1, 1895.

Application filed April 28, 1894. Serial No. 509,400. (No model.) Patented in England October 12, 1893, No. 19,197.

To all whom it may concern:

Be it known that I, ALFRED ASHBY, a citizen of England, residing at Ashdene, Argyll Road, Reading, Berkshire, England, have invented a certain new and useful Improvement in Type-Writers, (for which I have obtained Letters Patent in Great Britain, No. 19,197, dated October 12, 1893,) of which the following is a specification.

My invention relates to an appliance to a type writer which gives the operator notice when the end of the paper sheet on which he is printing is nearly reached. I shall describe the arrangement which I adopt for this purpose, referring to the accompanying drawings.

Figure 1 is an end view, and Fig. 2 is a plan of part of a type writer with apparatus according to my invention applied thereto. Fig. 3 is a front view of the said apparatus. Fig. 4 is an enlarged sectional detail view of the arm *e* on the spindle. Fig. 5 is a similar view illustrating the lever and spring for actuating said arm. Fig. 6 is a detail view illustrating the battery and bell and the method of connecting the same with the frame and standard.

A is the paper roller with its ratchet; A', the pressing roller.

B is the ordinary lever with pawl *b* for advancing the paper line by line by turning the roller A step by step.

On a convenient part of the framing but insulated from it as at *c* (see Fig. 6) I fix a standard C, which may form part of the type writer as manufactured or may, as shown in the drawings, be clamped on the framing of an existing type writer. On this standard C I fix a yoke D on which I mount a rocking spindle E and also a lever F one end of which engages as a tooth in the notch of an arm *e* projecting from the spindle E. The other end of the lever F has a stud *f* of ivory or other suitable insulating material projecting in the path of the pawl *b*.

A spring G strains the lever F to take the position shown in Fig. 1 in which position it is held by the engagement of a setting screw *e'* in a slot of *e* allowing a limited rocking movement of *e*.

On the spindle E is fixed adjustably by a setting screw a spring arm K preferably tipped at its ends with platinum.

Part *a* of the paper roller A is covered with tin foil or other conducting material and a corresponding part *a'* of the pressing roller A' is also covered with conducting material which is in electrical connection with the framing of the machine. This framing and the standard C are connected by conductors L L' to an electric circuit including a battery M and a bell N (as shown in Fig. 6) or other alarm or signal. Whenever the lever B is moved to advance the paper roller A one step, the pawl *b* striking *f* moves the lever F and this movement causes the spindle E to turn partly round so as to bring the spring K against the conducting material *a* on the roller A. So long as the conducting parts *a* and *a'* have the paper sheet interposed between them, the electric circuit is kept open and no effect is produced, but when the paper passes beyond the line of contact of the rollers A A' then, when the spring K is brought against the conducting part *a* of the roller A, the electric circuit through L, the framing, the roller A' part *a'* the part *a* of the roller A, the spring K the conductor L' and the battery and alarm or signal is closed and the alarm or signal is given apprising the operator that the edge of the paper sheet has passed from between the rollers A and A', and therefore that the last line printed by him is at a short distance from the edge of the paper. As the spring K meets *a* only when the pawl *b* strikes the stud *f*, the electric circuit is not closed, even when there is no paper between the rollers A A' except only when *b* strikes *f*.

Obviously the mounting of the apparatus, the clamp and the standard may be varied in form and position to suit the form of the particular type writer to which the apparatus is applied.

I do not herein claim the combination with the paper-roll of a type-writer having a portion of its length covered with conducting material, of two contact arms insulated from each other and adapted to rest upon said roll, a battery, an alarm, and conductors connecting the battery and alarm with the contact arms, as such combination is claimed in my application filed of even date herewith, Serial No. 509,399.

Having thus described the nature of my said

invention and the best means I know for carrying the same into practical effect, I claim—

In a type-writer, the combination of the paper roll and pressure roll covered for a corresponding portion of their lengths with a covering of conducting material, the conducting material of the pressure roll being electrically connected with the type-writer frame, a pawl for rotating the paper roll, a spindle supported on but insulated from the machine frame, a contact arm carried by said spindle and adapted to make contact with the conducting material on the paper roll, a lever for rocking said spindle provided with a non-conducting stud arranged in the path of the said pawl, and a battery and bell included

in a circuit connecting the said contact arm and the machine frame, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 16th day of April, A. D. 1894.

ALFRED ASHBY.

Witnesses:

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