Apr. 24, 1923. 1,452,621

E. STEPHEN

MEANS FOR DETACHING AND DELIVERING LENGTHS OF PAPER

Filed Sept. 14, 1922 2 Sheets-Sheet 1

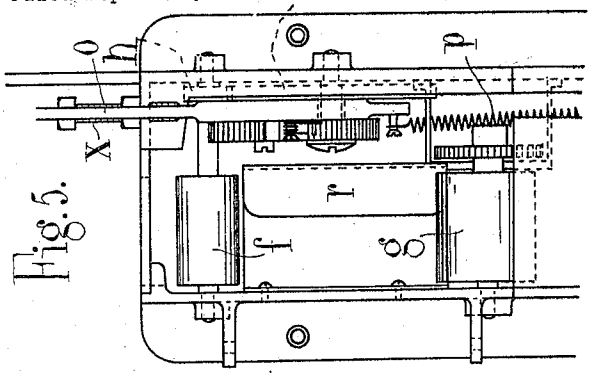


Fig. 5.

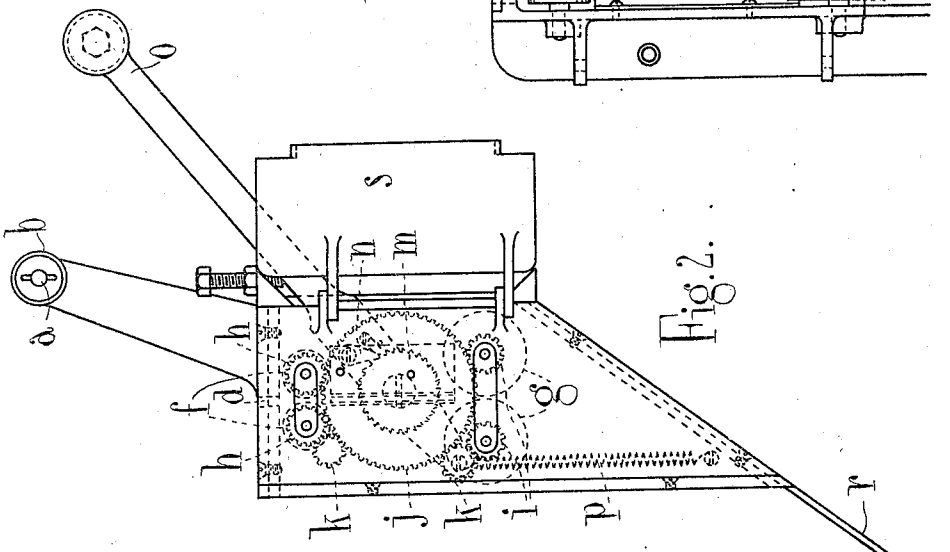


Fig. 2.

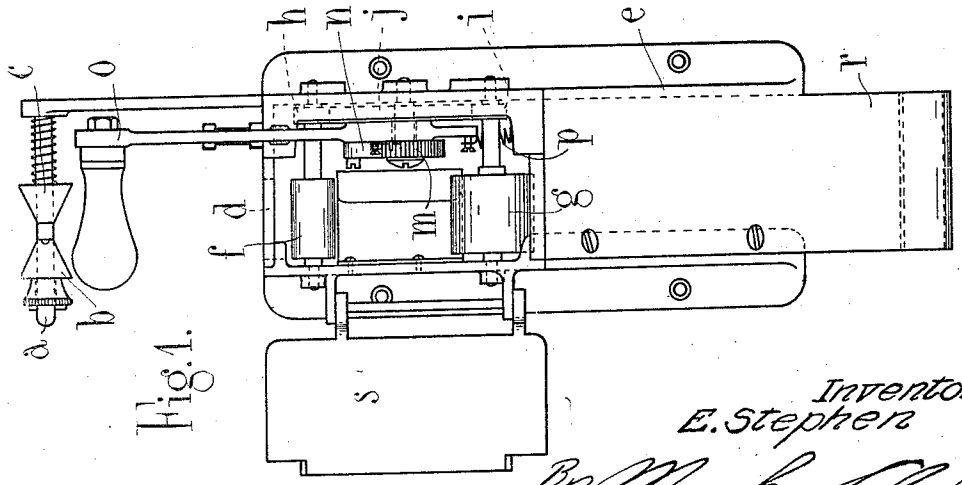


Fig. 1.

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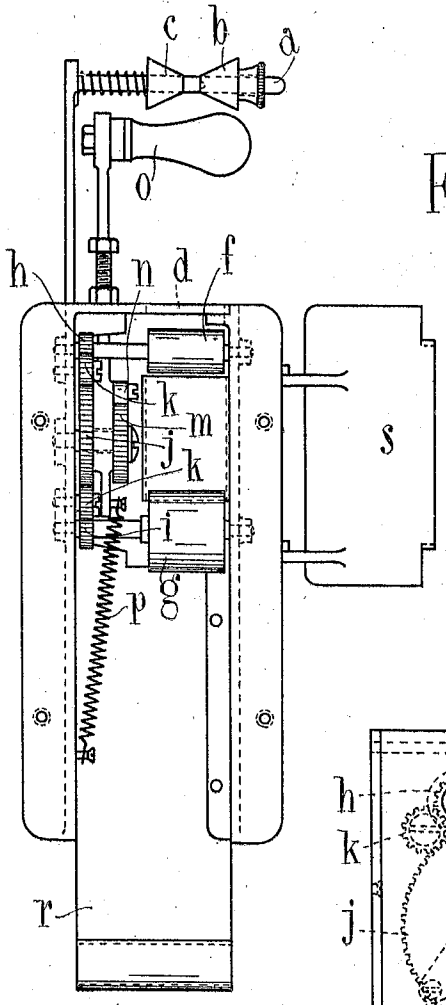
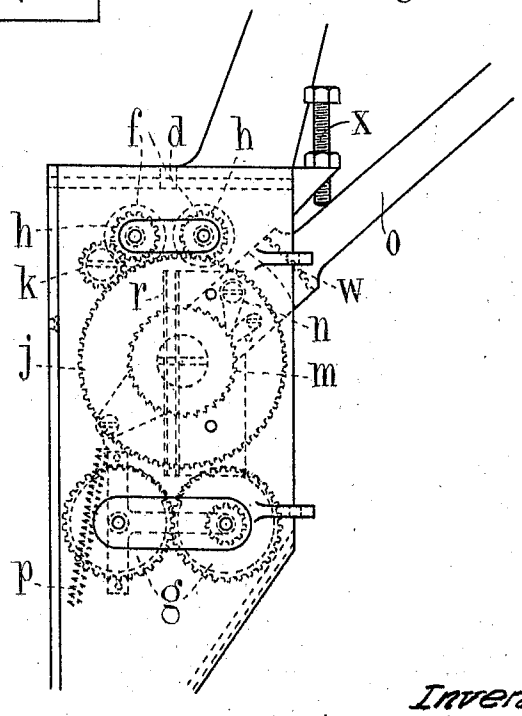


Fig.3.

Fig.4.



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UNITED STATES PATENT OFFICE.

EDWARD STEPHEN, OF MANCHESTER, ENGLAND.

MEANS FOR DETACHING AND DELIVERING LENGTHS OF PAPER.

Application filed September 14, 1922. Serial No. 588,251.

To all whom it may concern:

Be it known that I, EDWARD STEPHEN, a subject of the King of Great Britain and Ireland, and resident of 104 Daisy Bank Road, Victoria Park, Manchester, in the county of Lancaster, England, have invented certain new and useful Improved Means for Detaching and Delivering Lengths of Paper or the like from a Roll, of which the following is a specification.

This invention relates to means for detaching and delivering lengths of paper, cardboard and the like from a roll and more particularly to a device for detaching tickets from a roll which is perforated to facilitate the separation of the tickets, the object being to provide a simple and efficient arrangement of mechanism which is reliable in its action and readily operated.

In accordance with my invention, the device comprises two pairs of co-operating rollers, the one pair serving to feed the paper or the like to the other pair, and the latter pair (which has a greater peripheral speed than the former) serving to detach the individual lengths of paper or the like at the perforations. The two pairs of rollers are rotated positively by a hand or foot lever or other convenient means operating by means of pawl and ratchet mechanism which allows of the operation of the rollers by the levers when the latter is moving in one direction only.

The mechanism is enclosed within a suitable box or casing having an inlet slot through which the paper from the roll is fed to the feeding pair of rollers and a discharge shoot through which the individual tickets or lengths of paper are delivered. The operating handle projects through a slot in the box or casing, the length of the slot being such that when the lever has been moved from top to bottom thereof, one ticket is delivered from the machine. Or the handle may be secured upon a spindle projecting through the casing. A carrier plate or guide is arranged between the two pairs of rollers, the distance between the nips of said rollers may be equal to or greater than the length of each individual ticket.

With the arrangement before described when the operating lever is actuated, the feeding rollers deliver a ticket to the nip of the separating rollers which, by reason of their greater peripheral speed, exert a drawing action on the ticket, separating it from the roll at the perforations.

The rollers may be made or covered with any suitable material.

When it is desired to utilize my improved mechanism for separating and delivering tickets which may have an additional cross perforation to facilitate the tearing of the ticket through the Government tax stamp thereon, I may arrange the separating or delivering rollers so that a portion only of the peripheral surface of each roller can engage the ticket the remainder of the periphery being cut away or set back. With this arrangement, the feeding rollers deliver the ticket so that the midperforation is just beyond the nip of the separating rollers when the active portions of the peripheries of said rollers engage the ticket and detach it from the roll. By this means, I prevent the ticket being torn at the midperforations.

Referring to the two accompanying sheets of explanatory drawings:—

Figure 1 is a front elevation, Figure 2 a side elevation and Figure 3 a back elevation of a ticket separating and delivering machine made in accordance with my invention.

Figure 4 is a side elevation and Figure 5 a front elevation showing a modified arrangement of machine.

The same reference letters in the different views indicate the same or similar parts.

The tickets in roll form are carried by the spindle *a* between the conical collars *b*, *c* thereon. The end of the roll is threaded through the slot *d* in the casing *e* and between the pairs of rollers *f* and *g*. The spindles of said rollers carry spur wheels *h*, *i* which are rotated either directly by the large wheel *j* or through carrier pinions *k* as shown. A ratchet wheel *m* is secured upon the spindle carrying the large wheel *j* and is rotated by a pawl *n* upon the handle *o*, the latter being lowered when it is desired to deliver a ticket. A spring *p* returns the handle to its uppermost position.

A channel or guide is provided for the tickets passing between the rollers *f* and *q*. The tickets delivered from the rollers *g* pass down and rest in the end of the chute *r*.

A door *s* is provided on the casing to permit of ready access to the mechanism.

In service, the tickets are fed by the rollers

f to the nip of the separating rollers g which rotate at a higher peripheral speed than the rollers f and detach the end ticket from the roll at the perforations.

In the arrangement shown at Figures 4 and 5, the separating rollers g are made with a portion of their peripheries recessed or cut away as shown. The rollers f are rotated from the spur wheel j^1 but the rollers g which are geared together are rotated from the handle o by a rack w. The stroke of the handle o is limited by the stop x so that any desired length of ticket may be passed through the rollers f and g before the latter rollers nip it and separate it from the ticket roll. This arrangement may be particularly advantageous for use with tickets having mid-perforations. The rollers g then nip the ticket between the perforations, where separation is to be effected, and the mid-perforations.

I do not limit myself to the particular means shown for rotating the separating rollers g as these may be operated by any known means which allow of the variation of the time at which they nip the tickets from the rollers f.

I claim:—

1. Means for detaching and delivering lengths of paper or the like from a roll, comprising two pairs of rollers, means for rotating the same with differential surface speeds, one pair of the rollers drawing the roll and the other pair separating the individual lengths and delivering the same, as set forth.

2. Means as claimed in claim 1, wherein an operating handle is provided and is operably associated with the pairs of rollers and means for returning the handle to its initial position, as set forth.

3. Means as claimed in claim 1, wherein a guide is provided between the respective pairs of rollers and a delivery chute and holder operatively associated with the means, as set forth.

4. Means as claimed in claim 1, wherein the operating and delivery rollers are formed with recessed peripheral portions, as set forth.

5. Means as claimed in claim 1, wherein a manually operable handle is provided, gearing associated with both pairs of rollers, pawl and ratchet mechanism operably arranged between the gearing and handle, and means for returning the handle to its initial position as set forth.

In testimony whereof I have signed my name to this specification.

EDWARD STEPHEN.