J. R. ELLIOTT.

BOOK DISPLAY LEAF TURNER.

APPLICATION FILED MAR. 13, 1908.

954,272.

Patented Apr. 5, 1910.

2 SHEETS—SHEET 1.

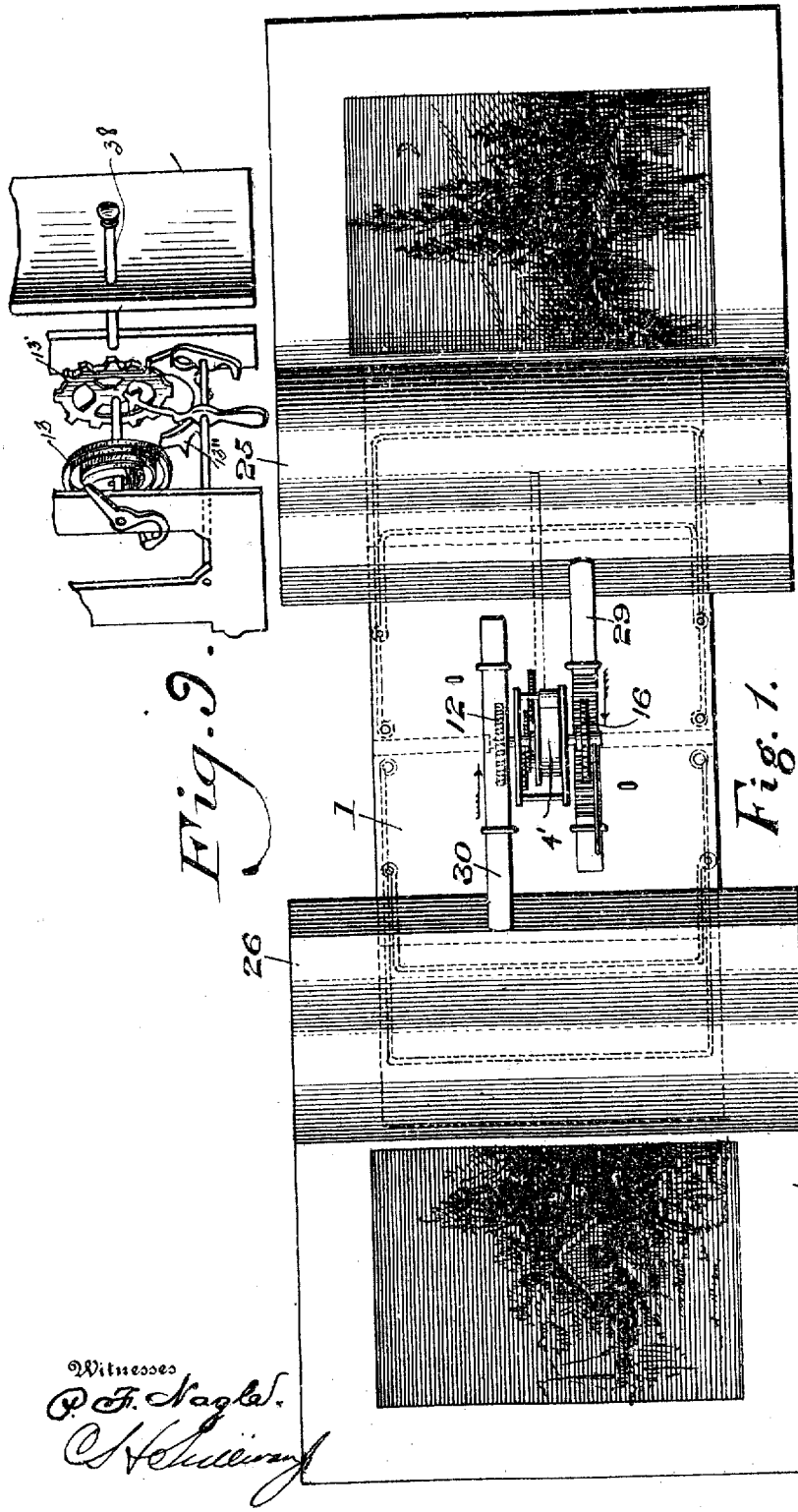

Fig. 9.

Fig. 1.

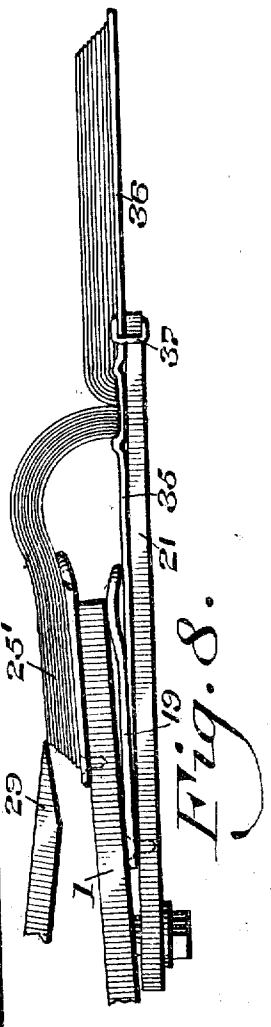

Fig. 8.

Witnesses

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2 SHEETS—SHEET 2.

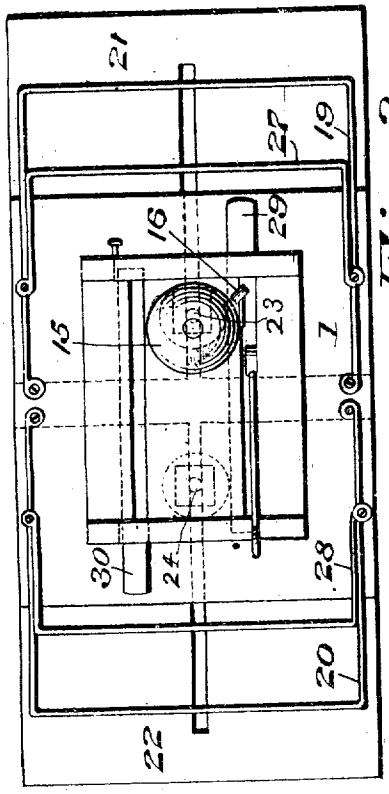

Fig. 3.

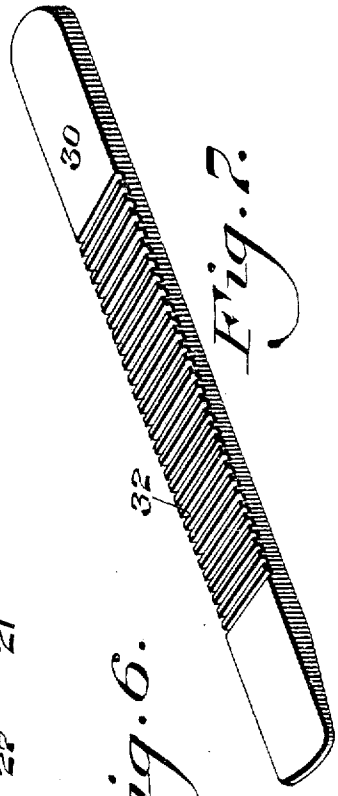

Fig. 7.

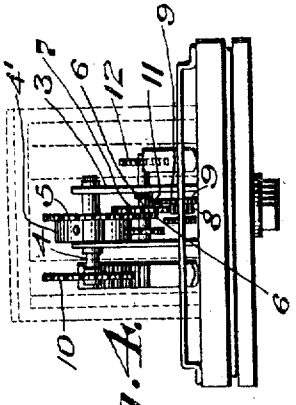

Fig. 4.

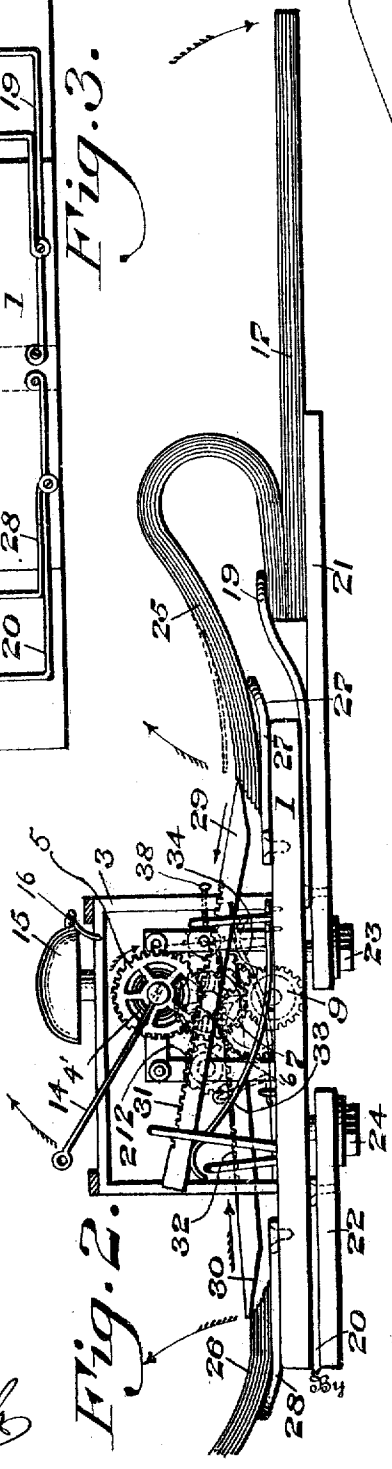

Fig. 2.

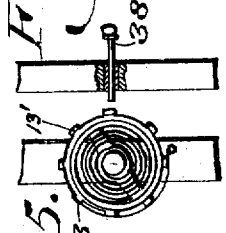

Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

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BOOK-DISPLAY LEAF-TURNER.

954,272. Specification of Letters Patent. Patented Apr. 5, 1910.

Application filed March 13, 1908. Serial No. 420,812.

To all whom it may concern:

Be it known that I, JOHN R. ELLIOTT, a citizen of the United States, residing in the city and county of Camden, State of New Jersey, have invented a new and useful Book-Display Leaf-Turner, of which the following is a specification.

The purpose of my invention is to hold books, pamphlets and other advertising matter and turn it over automatically.

A further purpose of my invention is to retain sheets or the leaves of a book in strained position such as is due to bending or gravity and gradually move the retaining device away from the sheets or leaves.

A further purpose of my invention is to operate the retaining mechanism for leaves under tension continuously by motor means, such as clock work, so as to release the leaves one at a time.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

Figure 1 represents a top plan view of a structure embodying my invention, parts being removed. Fig. 2 represents a broken side elevation of the structure of Fig. 1. Fig. 3 represents a top plan view of the form of invention which I have illustrated without the books. Fig. 4 represents the structure shown in Fig. 3 in end elevation, parts being shown in dotted lines. Fig. 5, is an elevation of a portion of the clock mechanism shown. Fig. 6 is a broken elevation of a stop made use of by me. Fig. 7 is a perspective view of one of the leaf-engaging fingers used in my mechanism. Fig. 8 represents a modification in broken side elevation. Fig. 9 is a detail perspective view of the escapement and stop mechanism.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings: 1 designates a frame or base of any suitable material, upon which I mount a motor 2 of any desired form. In this particular instance I have selected clock work mechanism having frame 3, main shaft 4 and initial gear 5. I illustrate this conventionally, merely showing a train of gears to which I have applied reference numerals 6, 7, 8 and 9, without attempting to set out the exact train in detail as any suitable train of clock gearing will answer for this illustration. I have extended the end of the main shaft to support a gear 10 and the shaft 11 to support gear 12, the gears 10 and 12 performing special feeding function as hereinafter brought out. I make use of any suitable hair spring 13 and escapement wheel and arm 13′ and 13″ to slow the clock work mechanically to a desired degree and to stop it when desired by engagement of a pin with the escapement wheel.

The requirements of the mechanism which I have illustrated do not necessitate much movement of the clock-work and I have, therefore, made use of a winding lever 14, directly attachable at any desired point to the shaft 4, in order that the main spring 4′ may be wound a portion of a turn by movement of the lever 14.

I have illustrated a bell 15 and clapper 16 conveniently placed to be operated by lever 14 in its movement, in order to illustrate that alarm may be given when the mechanism reaches any suitable position as when it is sufficiently run down to have released the leaves held, as hereinafter stated, or to require attention for any other reason.

I place books 17 and 18 in proximity to the base and hold them in any suitable manner as by spring arms 19 and 20 upon extensions 21 and 22, held to the base by bolts 23 and 24, so that the book shall be retained with the ends of the pages parallel to the ends of my base 1. The sheets or the leaves of the book are then flexed from the body of the book, presenting a portion as shown so bent as to rest upon arms 27 and 28 and to be held against said arms by means of the spring pressed fingers 29 and 30, portions of whose surface, as at 31 and 32, are formed of ratchet character to engage with suitable gearing. In this case I cause these ratchet faces to be engaged by gears 10 and 12 so that the fingers will be fed in the proper direction by movement of the clock mechanism.

The arms 29 and 30 are downwardly directed at the ends to engage with the parts 25 and 26 of the book by means of springs 33 and 34, which press the opposite ends of these fingers upwardly at points beyond the pivots provided for these fingers by their engagement with the gears 10 and 12. It will thus be seen that the fingers 29 and 30 can be drawn to the position shown in Fig. 2 by winding the clock-work mechanism through movement of lever 14 in a di-

rection opposite to that of the arrow and that there will be a constant gradual movement of the lever 14 in the direction of the arrow, during the running of the clock with a retraction of the fingers in the direction of the arrows as shown and release of the leaves as the fingers are withdrawn from contact therewith. This inward retraction of the fingers results in the release of the leaves a few, preferably one, at a time, with consequent closing of these leaves, presenting different subjects matter to the view. This continues until the clock-work runs down or is stopped as by pin 38.

I recognize that other motor mechanism than clock-work could be made use of and that the retracting, retaining fingers may be variously formed to perform the functions required. I further recognize that the form of the base and support for the book may be conveniently varied with part of the advantage from my invention.

In the form shown in Fig. 8, I have illustrated the mechanism as applied to a stiff-backed book. The mechanism is the same as that illustrated in my other figures except that I have passed one cover of the book 35, between the spring 19 and the extension 21, retracting this spring 19 to position shown if desirable. The back 35 is thus clamped in effect between the base and extension, and the cover 36 is held to the extension by any suitable means as by clamp 37. This retention of stiff covers of the book brings the book within the control of my operating mechanism so as to make it possible to operate the body of the book in substantially the same manner as a book with a flexible cover. It will be seen that clamp 19 may still be used for the purpose illustrated in Fig. 2, notwithstanding that the stiff covers of the book are held as in Fig. 8, the cover 35 in that case departing from the position illustrated and assuming a position at a slight angle to the extension 21 when the body of the book is held as seen in Fig. 2. It will be evident that the structure shown may be used vertically, as in the illustration of wall paper, maps and similar objects, one end only being made use of in such case.

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

1. In a device of the character described, a continually movable motor, retractable fingers moved longitudinally thereof by said motor, and means for holding the fingers in contact with the leaves.

2. In a device of the character described, a frame, a clamp retaining a book with its back toward said frame, a motor and a longitudinally movable finger controlled by said motor and engaging the leaves of the book.

3. In a device of the character described, a frame, a motor thereon, a retaining clamp, a finger extending from said motor, a spring for causing pressure of the finger against the leaves and means for withdrawing the finger longitudinally from the leaves.

4. In a device of the character described, a frame, a clamp upon said frame, a motor, a finger movable longitudinally by movement of said motor and means for pressing the finger toward the frame.

5. In a device of the character described, a frame, a motor mounted upon said frame, controlling mechanism for said motor, a finger, means for supporting a book and means for retracting said finger longitudinally from engaging said book.

6. In a book leaf turner, a frame, a clamp for the book, a finger engaging the leaves of the book, and means for continuously and automatically moving the finger in the direction of its length.

7. In a device of the character described, a frame, a clamp in proximity to said frame, a finger, means for pressing the finger toward the frame, and means for causing movement of said finger in the direction of its length.

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Witnesses:
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C. D. MCVAY.