A. ASTON.

MECHANICALLY OPERATED ADVERTISING DEVICE.

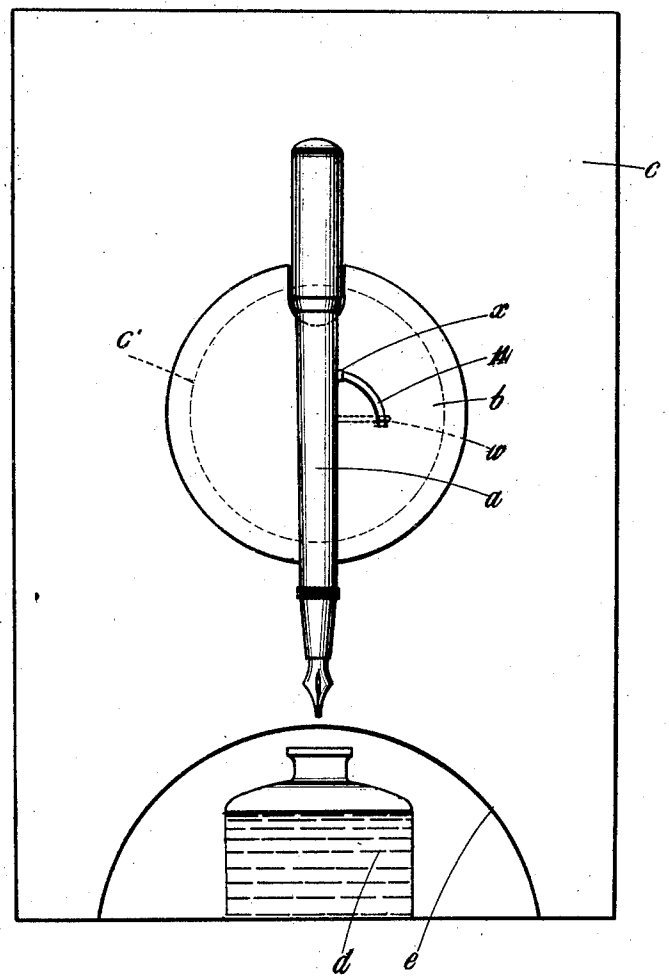
APPLICATION FILED FEB. 4, 1921.

1,381,856.

Patented June 14, 1921.

3 SHEETS—SHEET 1.

Fig. 1.



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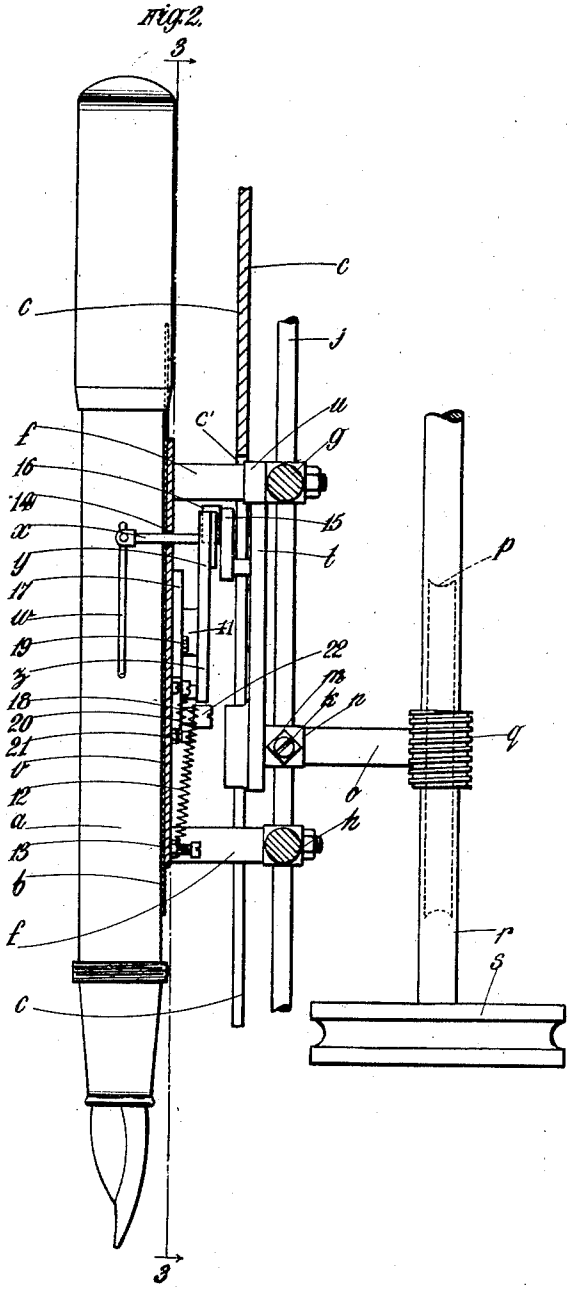
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3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 3.

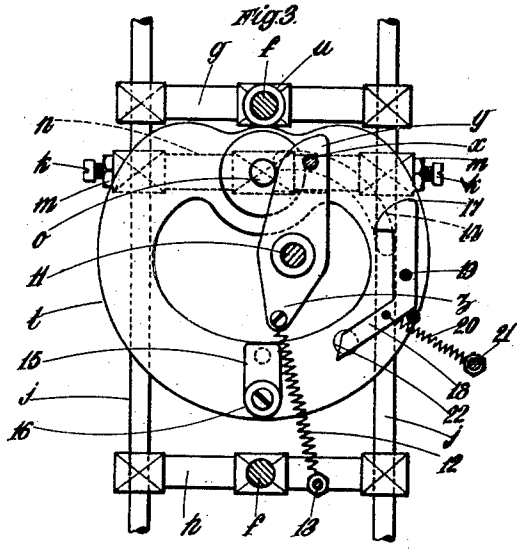
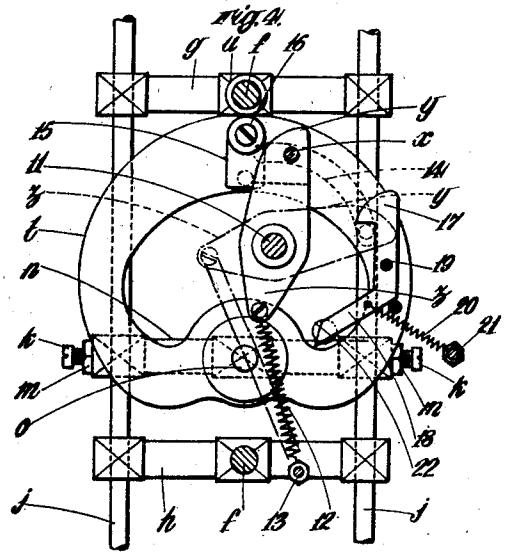


Fig. 4.



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UNITED STATES PATENT OFFICE.

ARCHER ASTON, OF LEEDS, ENGLAND, ASSIGNOR TO L. E. WATERMAN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

MECHANICALLY-OPERATED ADVERTISING DEVICE.

1,381,856. Specification of Letters Patent. Patented June 14, 1921.

Application filed February 4, 1921. Serial No. 442,468.

To all whom it may concern:

Be it known that I, ARCHER ASTON, of 25 Cliff road, Hyde Park, Leeds, in the county of York, England, a British subject, have invented certain new and useful Improvements in or Relating to Mechanically-Operated Advertising Devices, of which the following is a specification.

This invention relates to a mechanically operated advertising device and has for its primary object means for demonstrating the action of what is known as a lever-type self-filling fountain-pen. For the sake of convenience the invention will be described solely with reference to such a pen but it is to be understood that the invention may also be employed for other purposes for which the mechanical movements are suitable.

Apparatus constructed in accordance with the present invention comprises a model of a pen or other article having a lever or similar element adapted to be given a swinging movement of the kind set forth, means for raising and lowering the model and means for angularly displacing the lever thereof at predetermined points in the path of said model.

One form of the invention is illustrated in the accompanying drawings wherein Figure 1 is a front view of the apparatus, Fig. 2 is a sectional side elevation thereof on an enlarged scale, Fig. 3 is a sectional front elevation on the line 3—3, Fig. 2, parts being omitted and others partly broken away, and Fig. 4 is a view similar to Fig. 3 but showing the parts in different positions.

As shown in Fig. 1 a model *a* of a lever-type self-filling fountain pen is mounted upon a disk *b* which serves to cover an opening in the front wall *c* of a casing for the apparatus, said opening being indicated by dotted lines at *c'*, and a bottle *d* of fountain pen ink or a like receptacle is placed vertically below the model *a* for which purpose the front wall *c* may be gapped as at *e*. As shown in Figs. 2, 3 and 4 the model *a*, instead of being mounted upon the disk *b*, is in reality carried by arms *f*, *f* projecting forwardly through opening *c'* from cross bars *g*, *h* the ends of which are slidable on upright guide bars *j*, *j* and the disk *b* is in fact mounted on the model *a*. Clamped to the guide bars *j*, *j* by set screws *k*, *k* and lock nuts *m*, *m* is a cross bar *n* provided centrally with a bearing for the spindle *o* of a worm wheel *p* with which meshes a worm *q* on the spindle *r* of a pulley *s* adapted to be driven by any suitable prime mover such as clockwork mechanism, an electric motor or the like, not shown.

On the front end of the spindle *o* is eccentrically mounted a substantially heart-shaped cam *t* on the peripheral surface of which rests an anti-friction roller *u* rotatably mounted on the cross bar *g*, the construction being such that when the pulley *s* is driven the cam *t* is rotated and causes the cross bar *g*, and consequently the model *a*, disk *b* and cross bar *h*, to be raised and lowered alternately. As shown in Figs. 3 and 4 the cam *t* is symmetrical and adjacent each end of its axis of symmetry its peripheral surface is arcuate about its center of rotation so that the model *a* pauses at the top and bottom of its travel.

Mounted on the arms *f*, *f* is a plate *v* (Fig. 1), which serves to carry pivot pins and as an anchorage for springs as hereinafter set forth. The lever *w* of the model *a* is rigidly connected by a bar *x* with one arm *y* of a lever *y*, *z* which is pivoted on a pivot pin 11 mounted on the plate *v* coaxially with the pivot of the lever *w* the other arm *z* of the lever *y*, *z* having secured thereto one end of a tension spring 12 the other end of which is anchored by a screw 13 to the plate *v*, the bar *x* passing through an arcuate slot 14 in the disk *b* and plate *v* and the spring 12 tending normally to hold the lever *w* in its closed position as shown in Fig. 2. On the face of the cam *t* and substantially on the greater radius of its axis of symmetry is mounted a lug 15 carrying a tripping piece in the form of an antifriction roller 16 adapted to engage a curved face on the arm *y* of the lever *y*, *z* so as, during the revolution of said cam, to rock the lever *y*, *z* about its pivot 11 through an angle of about 90° after which the eccentricity of the cam and the lowering of the plate *v* and consequently the lever *y*, *z* causes the antifriction roller 16 to disengage from said arm. Before such disengagement takes place, however, the bar *x* is engaged by the hooked end 17 of a detent lever 17, 18 pivoted on a pivot pin 19 carried by the plate *v*, the arm 18 of said lever being acted upon by a tension spring 20 one end of which is attached to said arm

18 while its other end is anchored to a screw 21 on the plate *v*. The arm 18 of the lever 17, 18 has a pin 22 mounted thereon so as to project into the path of the antifriction roller 16 so that when said pin 22 is engaged by the antifriction roller 16 the lever 17, 18 is rocked about its pivot 19 against the action of its spring 20 so as to disengage its hooked end 17 from the bar *x* and release the lever *y*, *z* to the action of its spring 12, thus causing the lever *w* to be restored to its normal position.

Fig. 3 shows the operative parts in the positions they occupy when the model *a* is in its lowermost position and after the lever *w* has been restored to its normal position and Fig. 4 shows the operative parts in the positions they occupy when the model *a* is in its highest position and just before the arm *y* of the lever *y*, *z* is engaged by the antifriction roller 16, said lever being shown in dot and dash lines in the position it occupies when the bar *x* is engaged by the hooked end 17 of the lever 17, 18.

In use the model being in its highest position and the operative parts being in the positions shown in Fig. 4 and the prime mover being started the cam *t* is revolved about its axis *o* and the model remains stationary, the antifriction roller 16 engages the arm *y* of the lever *y*, *z* and rocks the latter through substantially 90° until the bar *x* is engaged by the hooked end 17 of the lever 17, 18 the lever *w* being thus rocked through substantially 90°, to deflate the rubber bag in the model *a* and held in said position. Continued rotation of the cam *t* permits the cross bar *g*, and consequently the model *a*, to be lowered the antifriction roller *u* resting on the periphery of said cam, until the model *a* dips into the receptacle *d*. The engagement of the antifriction roller 16 with the pin 22 on the arm 18 of the lever 17, 18 disengages the hooked end 17 of the latter from the bar *x* and permits the lever *w* to be restored to its normal position as above set forth the model *a* thus sucking up ink from the receptacle *d*. During this action the antifriction roller *u* is resting on a portion of the periphery of the cam *t* which is of constant radius so that the model *a* remains stationary. Continued rotation of the cam *t* raises the cross bar *g* and consequently the model *a* until the latter is at its highest position in which it again remains stationary. The subsequent engagement of the antifriction roller 16 with the arm *y* of the lever *y*, *z* deflates the bag of the model and expels the ink therefrom and so on.

In this manner the ease and simplicity with which a pen of the kind mentioned may be refilled is efficiently demonstrated.

I claim:—

1. A mechanically operated advertising device for the purposes set forth comprising a model mounted for vertical reciprocating movement, a lever thereon, means for raising and lowering said model and means for angularly displacing the lever on said model at predetermined points in the path of said reciprocating movement of the model, substantially as described.

2. A mechanically operated advertising device of the class described, comprising a model having a cross bar and a lever, a cam adapted to act upon said cross bar, a tripping piece on said cam, a lever adapted to engage (a) the lever connected with the lever on the model and (b) a detent lever adapted to hold the first mentioned lever, substantially as set forth.

3. A mechanically operated device of the indicated character including means to support a model of the type having an element to be swung, means to impart a reciprocating movement to said support, and means to cause a swinging movement to be imparted to said element in the same plane as the plane of movement of said support.

4. A mechanically operated device of the indicated character including means to support a model of the type having an element to be swung, said device including means to bodily move the support, and means to cause swinging movement of the said element of the model during the bodily movement of the latter and in a plane corresponding with the plane of movement of said support.

5. A mechanically operated device of the indicated character including means to support a model of the type having an element to be swung, means to bodily move the support, and relatively movable means adapted to be connected with the lever of the model and actuate the same during the bodily movement in a direction corresponding with the path of movement of the support.

6. A mechanically operated device of the indicated character including means to support a model of the type having an element to be swung in a vertical plane, means to give bodily reciprocating movement to said support, an actuating lever having means adapted to connect it with the element of the model, a cam to trip said actuating lever during said bodily movement and swing it in a plane corresponding with the path of movement of the support, and spring means to restore the actuating lever.

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