No. 649,459. Patented May 15, 1900.

F. M. JOHNSON.

APPARATUS FOR DISPLAYING ADVERTISMENTS, &c.

(Application filed Jan. 17, 1899.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.

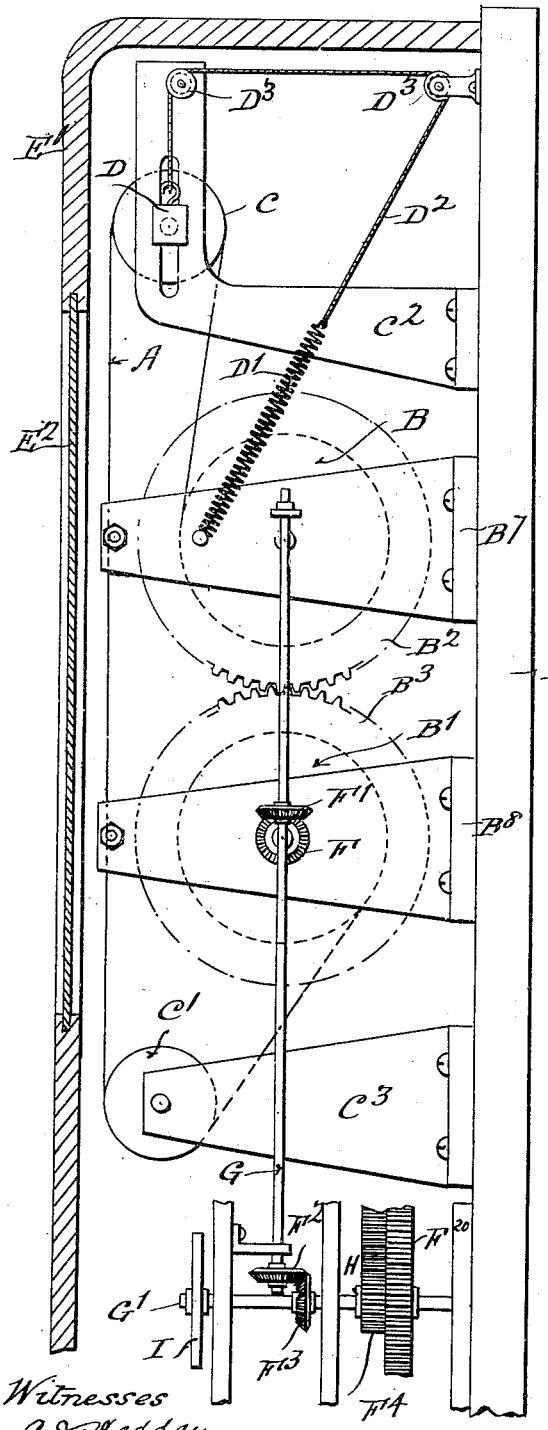
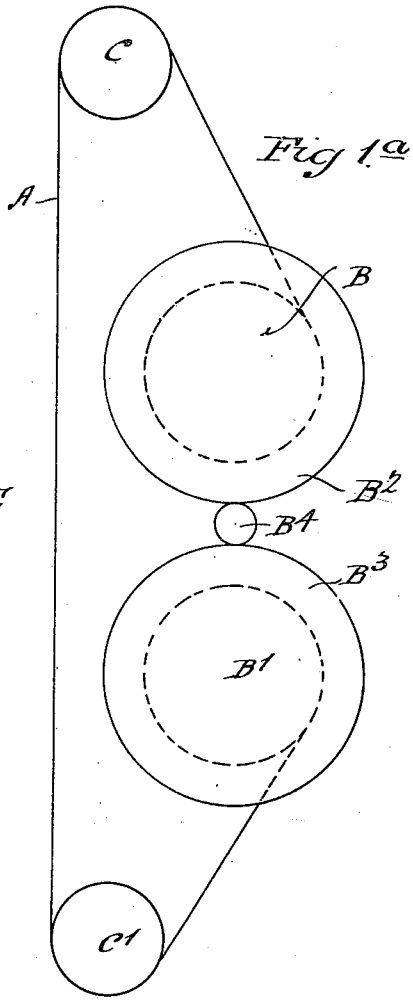


Fig 1a



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E. Brown.

Inventor
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(No Model.) 3 Sheets—Sheet 2.

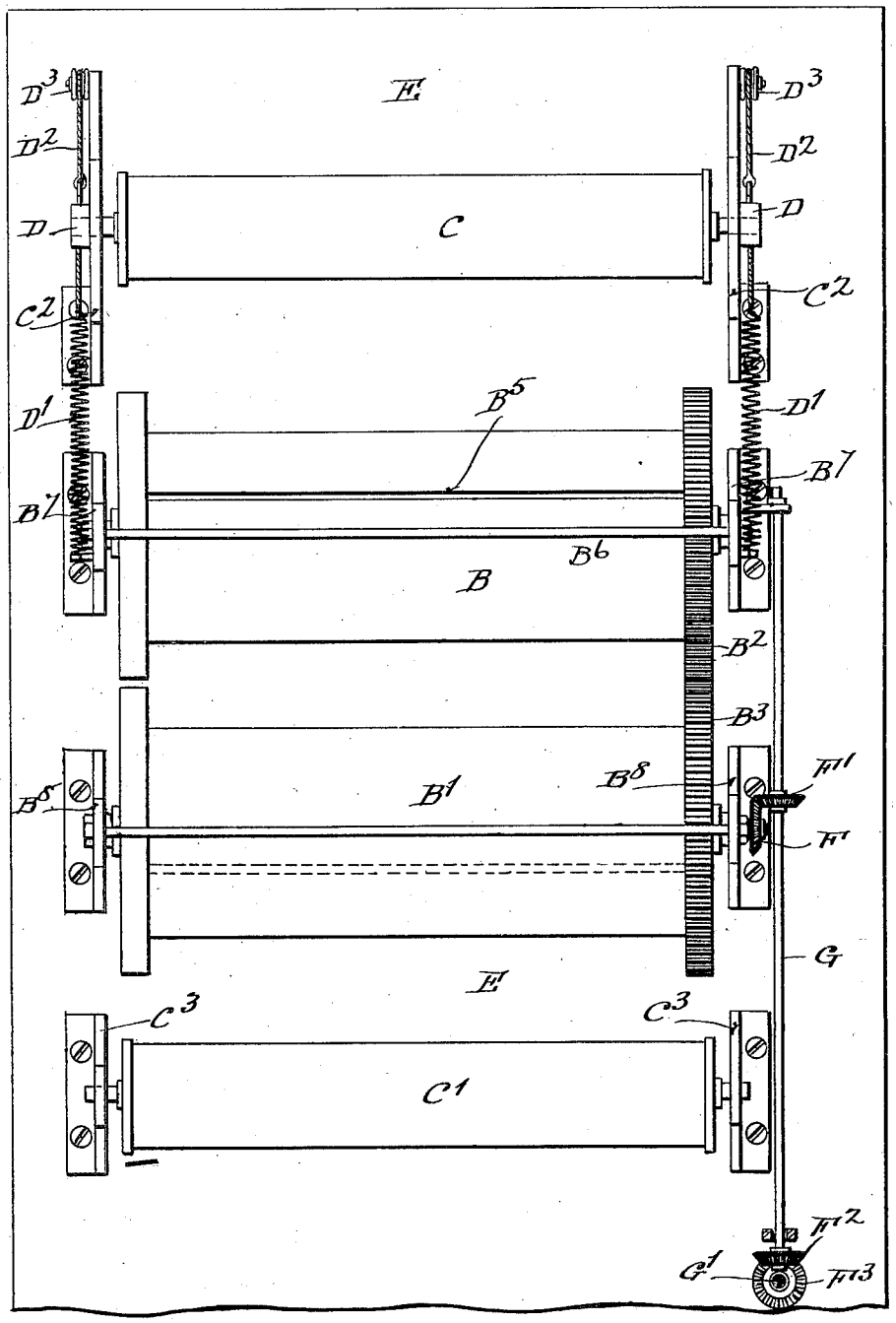

Fig 2.

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No. 649,459. Patented May 15, 1900.

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APPARATUS FOR DISPLAYING ADVERTISMENTS, &c.

(Application filed Jan. 17, 1899.)

(No Model.) 3 Sheets—Sheet 3.

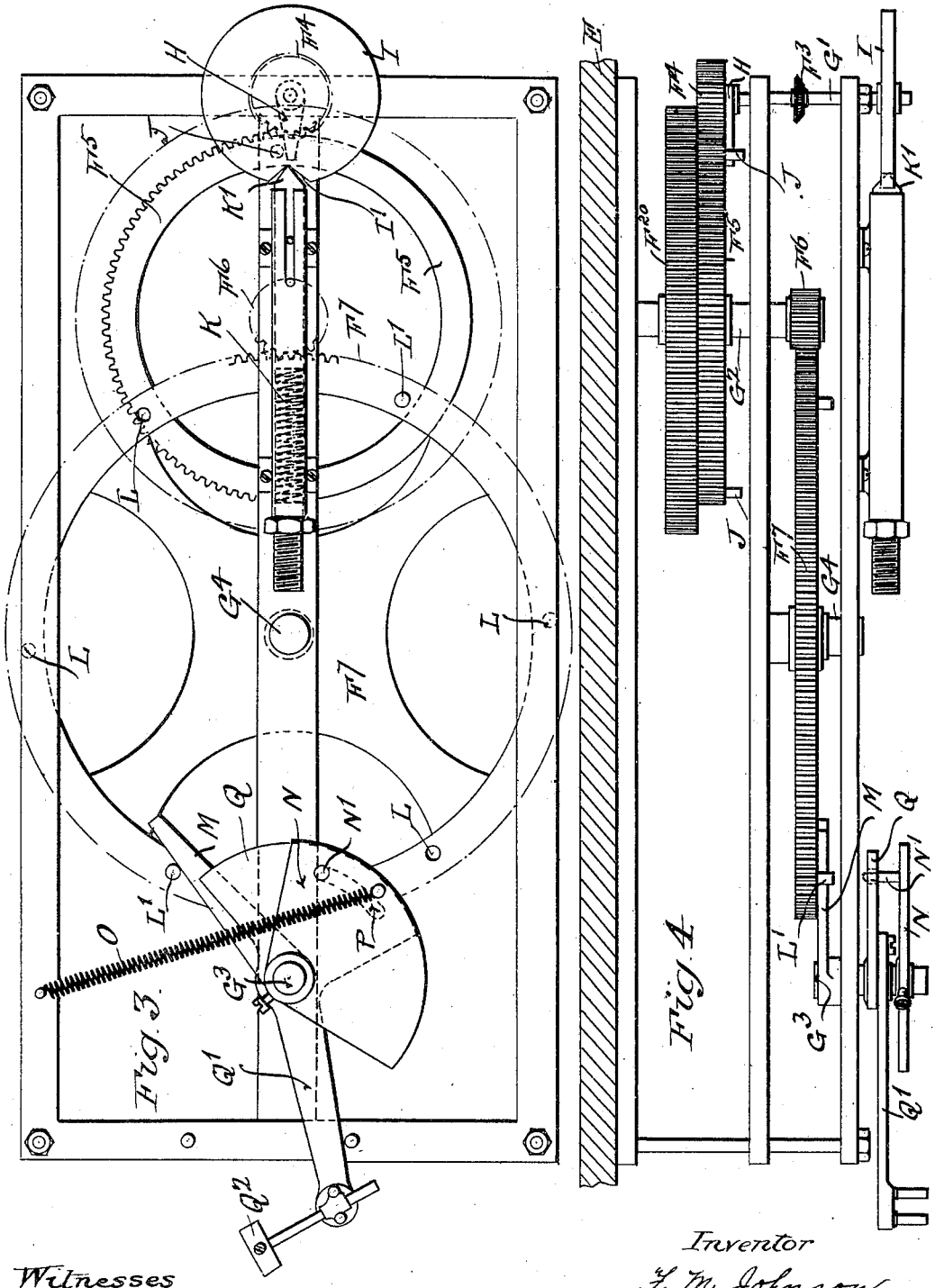

Fig. 3.

Fig. 4.

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UNITED STATES PATENT OFFICE.

FRANK MIHILL JOHNSON, OF LONDON, ENGLAND.

APPARATUS FOR DISPLAYING ADVERTISEMENTS, &c.

SPECIFICATION forming part of Letters Patent No. 649,459, dated May 15, 1900.

Application filed January 17, 1899. Serial No. 702,484. (No model.)

To all whom it may concern:

Be it known that I, FRANK MIHILL JOHNSON, a subject of the Queen of Great Britain, residing at London, England, have invented a certain new Apparatus for Displaying Advertisements, Goods, and for other Purposes, of which the following is a specification.

This invention consists of a new or improved apparatus for displaying advertisements, goods, and for other purposes.

In the accompanying drawings, Figure 1 is a side elevation, partly broken away. Fig. 1ª illustrates a modification. Fig. 2 is a front elevation with parts removed. Fig. 3 is a front elevation, and Fig. 4 a plan, of part of the gearing and reversing mechanism.

A band A of transparent membrane or open web to which the advertisements or goods can be attached or on which the advertisements may be printed is driven intermittently, so as to display the advertisements or goods one by one. The band is wound on two driven rollers B B′, preferably of relatively-large diameter. The two rollers B B′ are positively coupled or geared together by gear-wheels B^2 B^3, Fig. 1, or B^2 B^3 B^4, Fig. 1ª, so as to rotate at same speed. From these two rollers B B′, which are preferably in the middle of the machine, the band A is led off over two guide-rollers C C′ in such a manner that the band A is wound off one geared roller B and onto the other, B′. One of the guide-rollers C′ revolves in fixed bearings, the other, C, moving in sliding bearings D, so as to take up the slack caused by the differential diameters on the geared rollers B B′.

The sliding bearings D are operated by a spring D′, cord D^2 being led over pulleys D^3, as shown in Fig. 1. Any other convenient means may also be employed.

On each of the geared rollers B B′ is a recess B^5 and a packing-piece B^6, fitting into it similar to the arrangement for holding the web on a mangling-machine to its rollers for the purpose of securing the band A to the geared rollers B B′. The geared rollers B B′ are supported by bearing-brackets B^7 B^8, secured to the base-board E. The pinion B^4 when used can be carried by similar brackets. The bearings C^2 C^3 for the guide-rollers C C′ are also secured to the base-board E.

On the axle of the geared roller B′ is fastened a bevel-wheel F. This is driven by another bevel-wheel F′ on a vertical shaft G, operated by gearing to be hereinafter described.

The base-board E is secured to the wall or other fixture to which the machine is fastened.

The mechanism is inclosed in a case E′, in which is the window or glass-opening E^2, through which the objects on the band A can be seen. The position of the band A is so adjusted that each advertisement or other object to be displayed comes opposite to the window E^2 in the case E′.

The gearing for operating the above-mentioned vertical shaft G consists of the following: The vertical shaft G has on its end a bevel-wheel F^2, which is operated by another bevel-wheel F^3 on a horizontal shaft G′. This shaft G′ is driven by a pinion F^4. On the pinion is a wiper H, Figs. 3 and 4, extending beyond the radius of the pitch-circle of the pinion F^4. This pinion F^4 is driven by a large gear-wheel F^5, having only a portion of the rim with teeth. At either end of the geared portion of F^5 a pin J projects so as to gear with the wiper H.

In order to provide for the proper registration of the band A and also to insure that the geared segment F^5 shall always engage correctly with the pinion F^4, a cam-plate I is provided on the same shaft G′ as the pinion F^4.

Into a notch I′ in the cam-plate I a jack-in-the-box spring K forces the plunger K′. The plunger K′ is carried in a housing fastened on part of the machine-framing. The angle of the notch I′ is such as to allow of the cam-plate I forcing the plunger K′ out when the cam I is mechanically driven; but the spring-pressure is sufficient to prevent overriding. The gearing should be so arranged that the cam-plate I revolves a definite number of times; otherwise there would be a series of notches around the cam-plate I. On the same shaft G^2 as the mutilated gear F^5 is a pinion F^6, gearing with a large wheel F^7 on an idle shaft G^4. A number of holes L equal to the maximum number of separate advertisements to be shown are made in the large wheel F^7 at equal distances apart. Into these holes L one or more pins L′ may be screwed. These pins L′ engage with a lever M on a rock-shaft

G^3. This rock-shaft G^3 has on its outer end a plate N with a pin N′. The strong spring O holds the plate N one side or other of a center line passing through the axis of shaft G^3 and the stationary fixed point of attachment of the spring O. The pin N′ engages in a slot P of a slotted lever Q, pivoted loose on the rock-shaft G^3. The length of the slot P is such that the plate N does not commence to move the lever Q until the spring O has passed the aforesaid center line. Hence the movement of the lever Q is definite and depends on the plate N, its prime mover being the spring O and not the pin L′ on the wheel F^7.

The object of the above arrangement is to insure the positive reversal of the band A when it is at the end of its travel. The arm Q′ of the lever Q can work any reversing arrangement, preferably the switch Q^2 of an electric motor.

The motor, which serves as prime mover to the band A, as well as to wheel F^7, can be geared in any convenient manner to the mutilated gear F^5—for example, by driving the spur-wheel F^{20} on the same shaft as wheel F^5. An alternative method of operating the band A would be to dispense with the mutilated gear F^5 and to drive the cam-shaft G′ off a second motor thrown into gear by a constant-running motor and out of gear by the action of the plunger K′.

I claim as my invention—

1. In means for displaying a series of advertisements intermittently the combination of a rotary pinion a wheel part of the circumference of which is adapted to engage said pinion, said part being an arc of a circle which is substantially a multiple of the circumference of the pinion, means for uniformly rotating said wheel, a cam connected to said pinion to revolve equally therewith, said cam having a recess, formed with inwardly-sloped faces in its circumference, and a bolt adapted to have resilient engagement with said recess after each period of rotation to control the exact completion of a full rotation of said cam and pinion in each said period.

2. In means for displaying a series of advertisements intermittently, the combination of a rotary pinion, a wheel part of the circumference of which is adapted to engage said pinion, said part being an arc of a circle which is substantially a multiple of the circumference of the pinion, means for uniformly rotating said wheel, pins on said wheel at the extremities of its operative arc, a cam connected axially to said pinion, said cam having in its circumference a recess formed with inwardly-sloped faces, a bolt adapted to have resilient engagement with said recess after each period of rotation and a wiper on said pinion extending substantially in the direction of the notch and adapted to be engaged by the pins of the wheel for restarting the pinion without shock after each period of rest.

3. In apparatus for intermittently displaying a series of advertisements and reversing the display, the combination of a rotary pinion, a mutilated gear-wheel adapted to periodically revolve said pinion, gear for revolving said mutilated gear-wheel comprising a wheel F^7 having around it holes L spaced from one another for a distance equivalent to one revolution of the mutilated gear-wheel, pins adapted to be fixed in said holes, means for driving said wheel F^7 a reversing-gear for said driving means, and a trip mechanism for suddenly operating said reversing-gear comprising a lever in the path of said pins and adapted to be tripped on said lever being moved from either direction to a central position by a pin of wheel F^7.

In witness whereof I have signed this specification in the presence of two witnesses.

FRANK MIHILL JOHNSON.

Witnesses:
E. B. CROCKFORD,
WM. CROCKFORD.