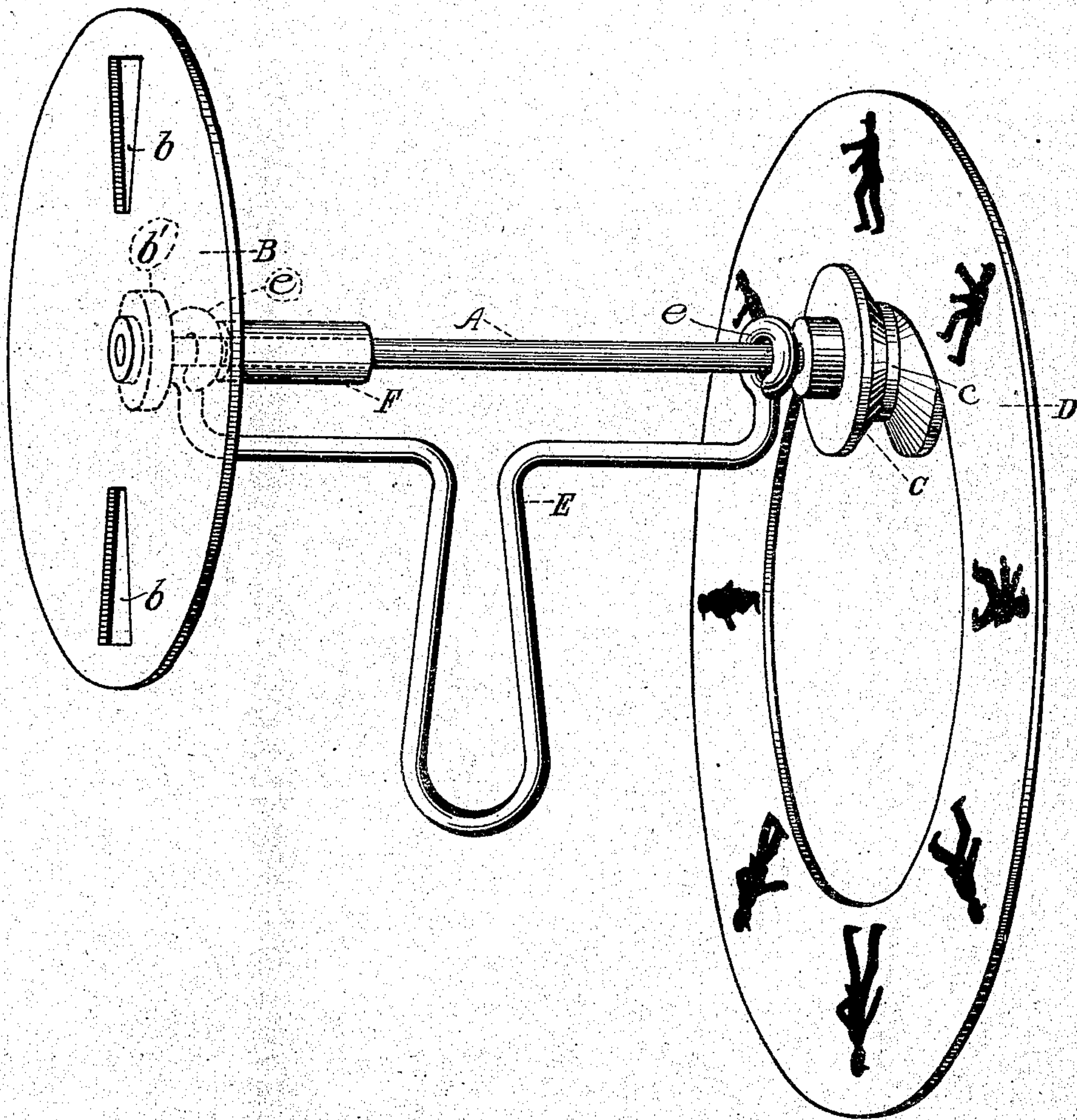


E. W. DAVIS.
MOVING PICTURE TOY.
APPLICATION FILED MAY 13, 1909.

931,184.

Patented Aug. 17, 1909.



WITNESSES
P. Musick
McClendon Young

INVENTOR
Ernest W. Davis
BY *Barton & Folk*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ERNEST W. DAVIS, OF CHICAGO, ILLINOIS.

MOVING-PICTURE TOY.

No. 931,184.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed May 13, 1909. Serial No. 495,702.

To all whom it may concern:

Be it known that I, ERNEST W. DAVIS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Moving-Picture Toys, of which the following is a full, clear, concise, and exact description.

My invention relates to a toy for producing moving pictures or similar effects due to the persistence of visual impressions. Its object is to provide a toy which is of simple construction, which can be manufactured at a low cost, which can be packed within small compass, and which can be readily assembled or disassembled.

My invention comprises a rotary shutter or disk provided with one or more slits, and a movable band having pictures or other representations thereon which, during the rotation of said shutter, are caused to move successively into position to be viewed through the slits in said shutter. In its preferred embodiment my invention comprises, more specifically, a rotatable, horizontal shaft upon one end of which is detachably secured a disk having one or more radial slits and upon the other end of which is secured a pulley or similar device for imparting travel to the picture-containing band, said band preferably being in the form of a flat ring or annulus provided with pictures or other representations upon one or both faces thereof.

The several features of my invention may be more readily understood by reference to the accompanying drawing, which is a perspective view of the preferred embodiment of my invention.

The rotatable, horizontal shaft A has a disk B mounted upon one end thereof to rotate with said shaft. The disk B may be made of pasteboard or other suitable material, and is provided preferably with two diametrically opposed radial slits, *b*, *b*. The disk B is provided with a hub *b*¹ secured to the disk in any suitable manner, and having an opening for receiving the end of the shaft A, said shaft having a tight fit in said opening in the hub *b*¹, thereby providing for the ready assembly of the disk B upon the end of the shaft or for the disassembling of the same.

A pulley C, of wood or other suitable material, is detachably secured upon one end of the shaft A. Said pulley is preferably pro-

vided with a circumferential groove *c* for receiving the band D. Said groove serves to properly align said band, that is to maintain it in approximately parallel relation to the disk or shutter B. The side walls of the groove *c* are preferably conical shaped, thus providing a V-shaped groove which tends to prevent the band from falling off of the pulley. The band D is preferably in the form of a flat ring or annulus adapted to be placed over the pulley C and to depend therefrom. Said band D is preferably made of cardboard or other somewhat stiff material. The weight of the annulus D will cause the same to bear with sufficient friction upon the pulley C at the point of contact of said annulus with said pulley to cause the rotation of the pulley C to drive the band D in the direction of rotation of the shaft A. Obviously, however, some other form of drive may be substituted for such friction drive. The band D is provided throughout its length or circumference with a plurality of representations, as for example, a figure in a series of successive attitudes. The figures on the disk D are so spaced apart that each time a slit passes the line of vision the next succeeding figure of the series has been advanced into position to be viewed. Thus where the disk B is provided with two diametrically opposed slits and the annulus D with eight figures or series of figures, as shown, the annulus will be advanced one-eighth of its circumferential length for each half-rotation of the disk B, and will have made one complete revolution when said disk shall have rotated four times. Since the vision is interrupted by the space between the slits *b*, the figures upon the disk D, viewed through the slits *b*, appear as moving pictures, as will be readily understood.

A short length of rubber tube F is preferably placed about the shaft A to provide a convenient means by which the operator can rotate said shaft by drawing his finger transversely over the surface of the tube F.

The shaft A is preferably supported near its ends in bearings *e*, *e*, in the ends of a handle E. Said handle may be, as shown, formed of a single piece of wire bent upon itself near its middle portion to form a portion to be grasped by the hands and having its two ends extending as projecting prongs at the ends of which the bearings *e* *e* are provided.

In the drawing the toy is shown assem-

bled and ready for operation. It is obvious that the annulus D can readily be lifted off of the pulley C, and reversed with respect thereto in order to show another series of
 5 pictures upon the other face of the annulus; or that one annulus can be quickly and readily substituted for another.

From the preceding description it will be seen that the shaft A, disk B, pulley C, band
 10 D, and handle E can readily be separated, and when so separated can be packed in a small space. The parts can be reassembled with equal readiness and rapidity.

It is obvious that by using an annular
 15 band for carrying the figures any desired circumferential length thereof can be obtained without any increased elevation of the figures above the axis of rotation of the disk B. This is an important feature of my
 20 invention, since there is less strain upon the eyes when the figures are slightly below the level of the slits through which they are viewed. It is evident that if the annular band D were mounted concentrically of the
 25 shaft A, the disk would have to be considerably enlarged or else the circumferential slits b would be below the figures on the band D. Furthermore, my invention provides simple means by which the band D
 30 and the figures thereon are given a relative motion with respect to the slits in the disk B, thus enabling the operator to rapidly rotate the disk and at the same time to impart a slower revolution to the band D, the
 35 movement of the band having, however, a definite ratio to the movement of the slits which are provided in the disk B.

I claim:

1. In a moving picture toy, the combina-
 40 tion with a rotary shutter having one or more slits therein, of a band having a series of pictures thereon, and means for producing a movement of said band relative to said shutter to bring said pictures successively in
 45 the line of vision when said pictures are viewed through said slits.

2. In a moving picture toy, the combina-
 50 tion with a disk having one or more slits therein, of an annular band provided with a series of pictures thereon, said band being eccentrically disposed with respect to said disk, and means for imparting rotary motion to said disk and band.

3. In a moving picture toy, the combina-
 55 tion with a rotary shaft, of a disk mounted upon one end of said shaft to rotate therewith, said disk being provided with one or more slits, a band having a series of pictures thereon, and mechanism carried by said ro-
 60 tary shaft for imparting a motion to said band across the line of vision when said figures are viewed through said slits.

4. In a moving picture toy, the combina-
 65 tion with a horizontally disposed rotary shaft, of a disk mounted upon one end of

said shaft to rotate therewith, said disk being provided with one or more radial slits, and an annular band supported from the opposite end of said shaft, said band having a series of pictures thereon, and said band be-
 70 ing driven from shaft to bring said pictures successively in the line of vision, when said figures are viewed through said slits in the disk.

5. In a moving picture toy, the combina-
 75 tion with a horizontally disposed rotary shaft, of a disk mounted upon one end of said shaft to rotate therewith, said disk being provided with one or more radial slits, a pulley secured to the opposite end of said
 80 shaft, and an annular band placed over said pulley and depending therefrom, said band having a series of pictures thereon.

6. In a moving picture toy, the combina-
 85 tion with a horizontally disposed rotary shaft, of a disk mounted upon one end of said shaft to rotate therewith, said disk being provided with one or more radial slits, a circumferentially grooved pulley mounted upon the opposite end of said shaft, and an
 90 annular band supported in said groove and depending from said pulley, said band being thereby adapted to be revolved at a comparatively slow rate of speed by the rotation of
 95 said shaft.

7. In a moving picture toy, the combina-
 100 tion with a rotary shaft, of a handle having forks provided with bearings for said shaft, a disk mounted on one end of said shaft to rotate therewith, said disk being provided with one or more radial slits therein, a pulley
 105 affixed to the other end of said shaft, and an annular band placed over said pulley and depending therefrom, said band having a series of pictures thereon.

8. In a moving picture toy, the combina-
 110 tion with a rotary disk having one or more slits therein, of an annular band having a series of pictures thereon, and means for rotating said disk and revolving said band in the same direction at different rates of speed, and thereby to bring said pictures succes-
 115 sively in the line of the vision when said pictures are viewed through said slits.

9. In a moving picture toy, the combina-
 120 tion with a handle consisting of a single piece of wire bent upon itself at its middle portion to provide a portion to be grasped by hand and having its two ends forming projecting prongs having bearings at the ends thereof, of a rotary shaft journaled in said
 125 bearings, a rubber tube inclosing a portion of said shaft and providing a friction producing surface by which said shaft may be rotated, a disk mounted on one end of said shaft, said disk being provided with slits therein, a pulley mounted upon the other end of said shaft, and an annular band depend-
 130 ing from said pulley, said band being provided with a series of pictures thereon.

10. In a moving picture toy, the combination with a handle consisting of a single piece of wire bent upon itself at its middle portion to provide a portion to be grasped
5 by hand and having its two ends forming projecting prongs having bearings at the ends thereof, of a rotary shaft journaled in said bearings, a disk mounted on one end of said shaft, said disk being provided with
10 slits therein, a circumferentially grooved pulley mounted upon the other end of said

shaft, and an annular band resting in said groove and depending from said pulley, said band being provided with a series of pictures thereon.

In witness whereof, I hereunto subscribe my name this 12th day of May, A. D. 1909.

15

ERNEST W. DAVIS.

Witnesses:

GEORGE E. FOLK,
McCLELLAND YOUNG.