June 29, 1926. 1,590,743

H. S. HANSTINE

TOY MOTION PICTURE MACHINE

Filed May 16, 1925

Fig. 1.

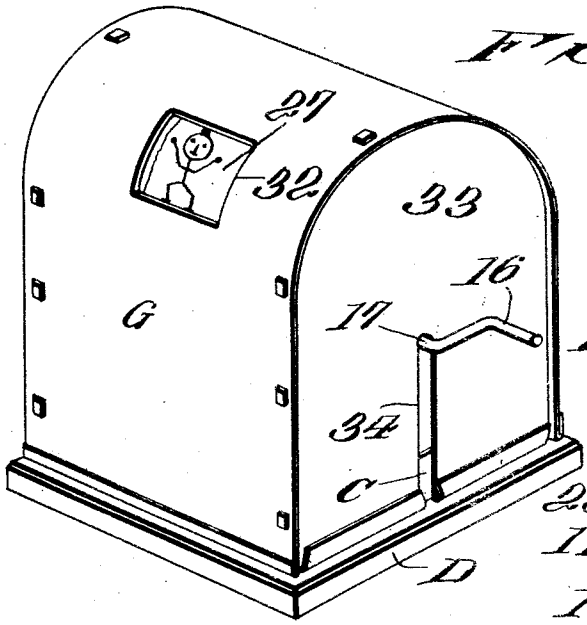


Fig. 4.

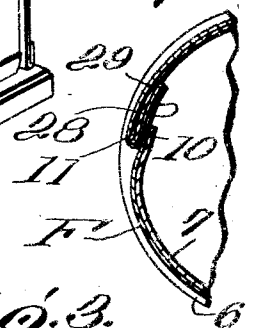


Fig. 2.

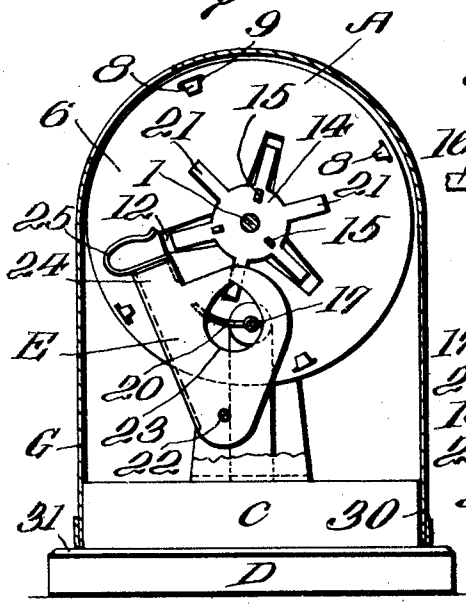
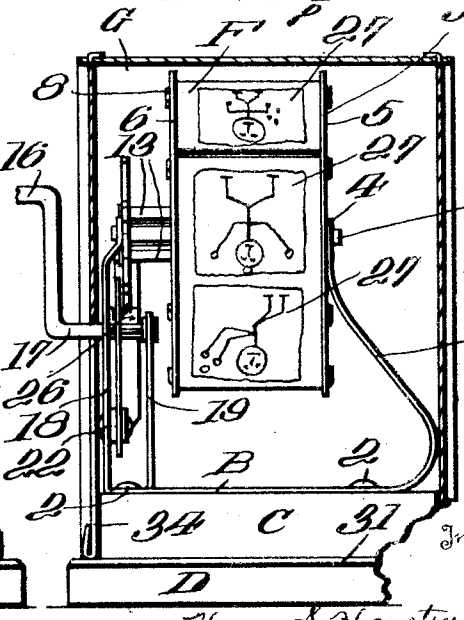


Fig. 3.



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UNITED STATES PATENT OFFICE.

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TOY MOTION-PICTURE MACHINE.

Application filed May 16, 1925. Serial No. 30,758.

This invention relates to improvements in toy motion picture machines, pertaining more particularly to a toy which is adapted to give an animated or motion picture effect to drawings, sketches, photographs or the like.

The primary object of the invention is to provide a toy for producing motion pictures or animated effects to drawings, sketches, photographs or the like.

Another object of the invention is to provide a toy of the character described in which the motion picture or animated effect is produced by a mechanism which is positive and smooth in operation and the motion picture effect is produced without any jumping or flickering of the characters being animated.

Another and further object of the invention is to produce a toy of the character described which is simple and cheap of manufacture and highly efficient in operation.

Another and further object of the invention is to produce a toy of the character described of such a construction that new drawings, sketches or photographs for use with the device can be supplied and used with minimum expense.

A still further object of the invention is to provide a novel form of drive mechanism for the drum which carries the film or pictures.

Another and further object of the invention is to provide a novel form of picture strip and a novel manner of attaching the same to the picture carrying drum.

Other further objects, novel features of construction and improved results of the invention will appear from the following description and drawings.

In the drawings—

Figure 1 is a perspective view of the toy.

Fig. 2 is an end view of the toy, the view taken from the right-hand or driving side of the device and the cover or housing being shown in vertical section.

Fig. 3 is a rear view of the toy, the cover or housing being shown in vertical section.

Fig. 4 is a fragmentary vertical sectional view through the drum and the film, showing the novel manner in which the film is attached to the drum.

Referring now to the drawings, it will be seen that the invention comprises broadly a base upon which is mounted a drum which carries the film or strip of drawings or the like. This drum is suitably supported above the base and adapted to be rotated by means of a suitable driving mechanism actuated by a handle.

Enclosing the drum and its driving mechanism is a housing which is provided with an opening below which the strip of drawings pass in a manner to give a motion picture or animated effect.

Describing the invention in more detail, it will be seen that the drum A is supported on the shaft 1, which is mounted in the approximately U-shaped bracket B, which is in turn fastened by suitable screws or the like 2, to the elevated base portion C of the base D. The bracket B has one of its sides curved, as at 3 to form, in effect, a spring which bears constantly, as at 4, against the side 5 of the drum A and acts as a brake upon the drum to prevent the same from running too freely.

Referring to the drum A, it will be seen that the same is hollow, comprising two circular disks 5 and 6, which form its sides, while the bottom or face of the drum is composed of a piece of resilient metal 7, which has at its edges a series of lugs 8, which pass through the openings 9, adjacent the peripheral edges of the drum sides 5 and 6. These lugs 8, when bent down, as appears in Fig. 2 of the drawings, hold the drum sides in separated position a distance equal to the width of the drum bottom or face 7.

By reference to Fig. 4 of the drawing, it will be seen that the ends 10 and 11, of the strip 7 which forms the bottom or face of the drum, overlap and are in separated relation one to the other. The purpose of this construction will be hereinafter described.

The drum A is provided at its right side with a hub which is formed by cutting in the drum side 6 a series of openings 12, and bending these cut portions 13 outwardly at right angles, as clearly appears in Fig. 3 of the drawings. Mounted upon the outer end of the drum is a gear 14, which is held in place by a series of lugs 15, which are an integral part of the hub arms 13, and penetrate the central portion of the gear to be bent down to clamp the gear in place, as clearly appears in Fig. 2 of the drawing. It will be seen that the shaft 1 extends centrally through the drum hub and the gear 14.

To rotate the drum there is provided a

handle 16, which has a horizontal shaft portion 17, which is supported in the vertical arm 18 of the U-shaped bracket, and has its inner end supported in a supplemental bracket 19, which is in separated parallel relation to the bracket arm 18. Suitably fastened to the horizontal shaft portion 17, of the crank and positioned intermediate its supporting brackets, is a propeller blade 20, which is slightly curved and of a suitable length to engage the teeth 21 of the drum gear 14.

Pivotally supported as at 22 to the inner side of the bracket arm 18, there is a stop and lock member E, provided centrally with a cam or elliptically-shaped opening 23, which surrounds the shaft portion of the crank handle. This stop or lock member is further provided with an upwardly extending portion 24 which terminates in a U-shaped catch or bracket 25.

By reference to Figs. 2 and 3 of the drawings, it will be seen that the propeller blade 20 is provided with a slot 26 in its end and that this slot is adapted to engage the edge of the cam or elliptical-shaped opening 23, of the stop or lock member. Due to the fact that the opening is of a cam or elliptical shape, it will be seen that upon rotation of the crank handle and its propeller blade, that the stop or lock member E will be rocked upon its pivotal support 22, thereby causing the U-shaped clip 25 to be moved to and away from the gear 14. In Fig. 2 of the drawing, it will be seen that the clip 25 is in a position remote to the gear. Upon a complete revolution of the shaft 17, the drum will be rotated the distance between two of its teeth and as the propeller blade passes out of engagement with one of the gear teeth, the U-shaped member 25 will be moved inwardly to engage and lock the next gear tooth behind that one which has been acted upon by the propelling or driving blade and thereby lock the drum against further rotation, rocking, jumping or vibrating.

The picture strip or film is designated at F, and comprises a strip of material of a width equal to the width of the drum face 7. This strip carries a series of films, drawings, photographs or the like, as designated at 27. The picture strip or film is of a length greater than the circumference of the drum, the excess length of the strip being the blank ends 28 and 29, as appears in Fig. 4 of the drawings. Referring further to this figure of the drawings, it will be seen that the strip is held in place upon the drum by bending the extending end 29 of the strip backwardly upon itself and then inserting this backwardly bent portion 29 between the ends 10 and 11 of the drum face 7. The strip is then carried around the drum face and the blank end-portion 28 of the strip inserted between the ends 10 and 11 of the drum face 7. By making the distance between the ends 10 and 11 of the drum face 7 the proper amount, it will be seen that the strip ends will frictionally engage each other and be tightly and firmly held in place upon the drum, but at the same time they can be readily withdrawn for removing the strip and replacing the same with a strip carrying different drawings or characters.

Completely enclosing the entire mechanism, with the exception of the crank or handle 16, there is provided a housing G, the lower edges of which frictionally engage the raised base portion C, as at 30, and rest upon the upper face 31 of the base D. Properly positioned in the front of the housing G, to register with the pictures or characters of the film or strip F is an opening 32. The end 33 of the housing is provided with an elongated slot 34, for the passage of the shaft portion 17 of the crank handle.

Operation: From the foregoing description, it is believed that the operation of the toy will be understood. This operation is very simple. To produce the motion picture or animated cartoon, the drum is rotated by turning the handle 16. With each revolution of the handle 16, the drum is revolved a distance equal to the distance between two of the drum gear teeth. As the propeller blade moves out of engagement with its gear tooth, the lock or stop bracket 25 moves into engagement with a gear tooth and thereby prevents the picture or film from jumping or vibrating.

With this construction, it is possible to revolve the drum very rapidly, yet at the same time stop the characters positively in front of the housing opening 32, where it can be viewed.

Due to the manner of attaching the film or picture strip, it is possible to furnish cheaply any number of films for use with the toy. Furthermore, these films can be easily and rapidly placed upon and taken from the drum.

It will be readily understood that departures from the specific invention herein shown and described can be made without departing from the spirit of the invention as defined in the claims.

Such modification might, for instance, be the provision of a motor to rotate the drum rather than the crank handle, or the substitution of wooden parts for those now shown and described as being made of metal.

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

1. A device for animating pictures or the like, comprising a rotatable drum carrying a strip of pictures, means to rotate the drum intermittently, means to lock the drum after

each movement thereof, and said locking means being pivotally mounted and actuated intermittently by the drum driving means for intermittently locking the drum against movement.

2. A device for animating pictures or the like, comprising a drum carrying a strip of pictures, a gear for said drum, driving means having intermittent engagement with the drum gear for intermittently moving the drum, means to lock the drum after each movement thereof, said locking means intermittently actuated by the drum driving means to have intermittent engagement with one of the teeth of the drum gear for locking the drum against rotation.

3. A device for animating pictures or the like, comprising a rotatable drum carrying a strip of pictures, means to rotate the drum intermittently, means to lock the drum after each movement thereof, and said locking means actuated by the drum driving means.

4. A device for animating pictures or the like, comprising a drum carrying a strip of pictures, a gear for said drum, driving means for said drum for intermittently moving the same, said driving means having engagement with one of the drum gear teeth, means for locking the drum after each movement thereof, said locking means in engagement with one of said drum gear teeth and being actuated by the drum driving means.

5. A device for animating pictures or the like, comprising a rotatable drum carrying a strip of pictures, a gear for said drum, driving means having intermittent engagement with said gear for intermittently moving the drum, means for locking the drum after each movement thereof, said locking means being pivotally mounted and having a cam-shaped opening in engagement with the drum driving means and a U-shaped member adapted to receive one of the drum gear teeth, and said locking means moved intermittently towards and away from the drum gear by reason of its engagement with the drum driving means, whereby the U-shaped member of the locking means intermittently engages one of the teeth of the drum gear to lock the drum aginst rotation.

6. A device for animating pictures or the like, comprising a rotatable drum provided with an opening in its face, a picture strip carried by said drum and fastened thereto frictionally, said frictional engagement being between the ends of the strip and the drum face opening, means to rotate the drum intermittently, and a cover having a display opening under which said strip is adapted to be intermittently moved.

7. A device for animating pictures or the like, comprising a rotatable drum provided with an opening in its face, a picture strip carried by said drum face and fastened thereto by having its ends in frictional engagement with said drum face opening, means to rotate the drum intermittently, means to lock the drum after each movement thereof, and a cover having a display opening under which said strip is adapted to be intermittently moved.

8. A device for animating pictures or the like, comprising a rotatable drum carrying a strip of pictures, a gear for said drum, means for intermittently engaging one of said gear teeth for intermittently moving the drum, means operated by the gear driving member for intermittently engaging one of said gear teeth for locking the drum after each movement thereof, and a cover under which said strip is adapted to be intermittently moved.

9. A device for animating pictures or the like, comprising a rotatable drum, means for intermittently moving the same, said drum adapted to carry a strip of pictures, said picture strip being frictionally retained upon said drum, a cover having a display opening under which said strip is adapted to be intermittently moved, and a locking member intermittently actuated by the drum moving means for intermittently locking the drum against movement, whereby the pictures on the drum picture strip are intermittently stopped and held still below the cover opening.

10. A device for animating pictures or the like, comprising a rotatable drum, a hub for said drum formed by cutting a series of openings in the drum side and bending said cut portions outwardly at right angles, a gear carred by the outer ends of said hub portion, means for intermittently engaging said gear for intermittently rotating the drum, means for intermittently engaging said gear for locking the drum after each movement thereof, said locking means actuated by the drum driving means, a strip of pictures removably carried by said drum, and a cover having a display opening under which said strip is adapted to be intermittently moved.

11. A device for animating pictures or the like, comprising a drum having an opening in its face, means for intermittently moving said drum, a picture strip having blank ends, one of said ends adapted to be bent backwardly upon itself and inserted through said drum face opening, the opposite blank end of the strip adapted to be inserted within said drum face opening beneath the other picture strip end, and a cover having a display opening under which said strip is adapted to be intermittently moved.

In testimony whereof I hereunto affix my signature.

HARRY S. HANSTINE.