Feb. 12, 1929. 1,701,974

L. S. GUNDERMAN

TOY

Filed July 15, 1926

FIG.1.

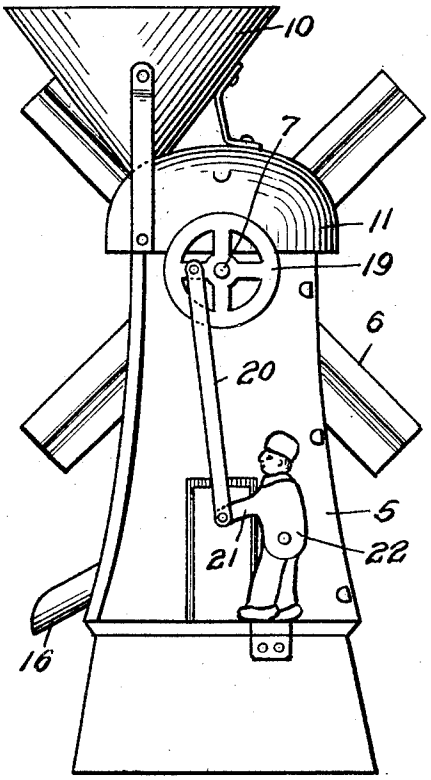


FIG.2.

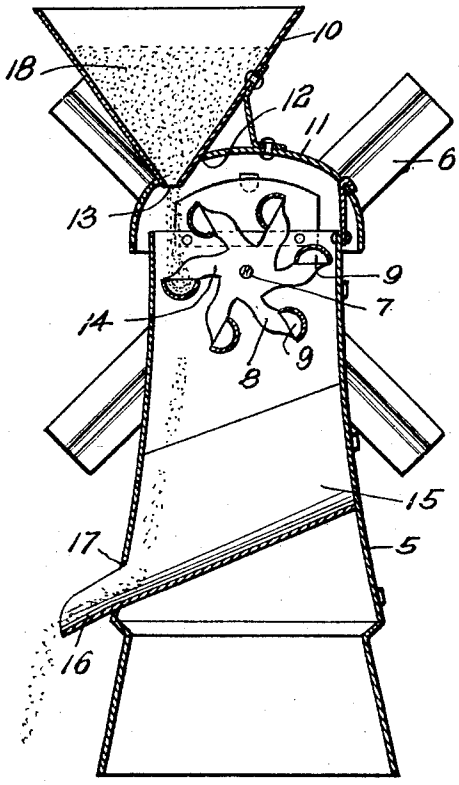


FIG.3.

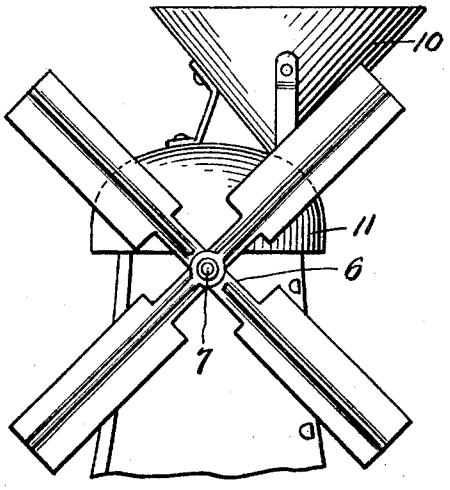
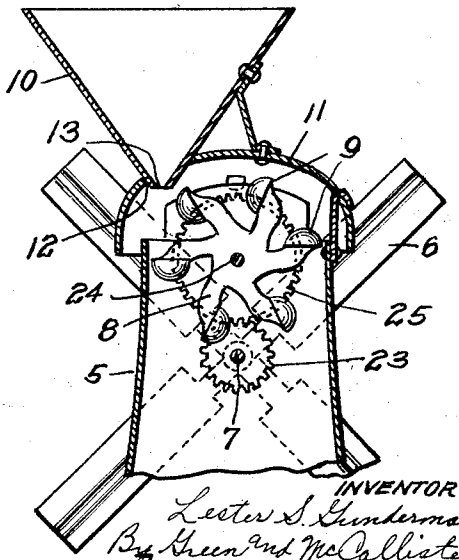


FIG.4.



WITNESSES

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UNITED STATES PATENT OFFICE.

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TOY.

Application filed July 15, 1926. Serial No. 122,613.

This invention relates to toys and more particularly to an improved form of toy windmill.

An object of this invention is to provide a toy of the type set forth having an improved construction of operating means.

A further object is to provide a toy windmill of such construction and arrangement as to produce upon the beholder the impression that work such as grinding or pumping is being performed.

A still further object is to provide a device of the type set forth which will be cheap to manufacture, attractive in appearance and effective in operation.

These and other objects which will be apparent to those skilled in this particular art are attained by means of the invention illustrated in the accompanying drawings, in which Figure 1 is a view in side elevation of a toy windmill constructed in accordance with one form of this invention. Fig. 2 is a transverse sectional view through the device shown in Fig. 1. Fig. 3 is a view in elevation of the upper part of the windmill shown in Fig. 1, taken from the back thereof and Fig. 4 is a sectional view of a modified operating mechanism.

The particular embodiment of this invention which has been chosen for the purposes of illustration is shown in the form of a toy windmill having the usual rotary sail. Driving mechanism is associated with the sail for the purpose of rotating the same to give the illusion of a windmill in operation. The driving mechanism is preferably operated by means of a flowing or falling stream of material, and associated therewith is a device for collecting the material and directing the stream thereof in such a manner as to give the impression that the windmill is actually grinding or pumping.

As illustrated, the present invention includes a toy windmill formed by sheet metal walls 5 which are shaped to give the desired contour to the toy building. A sail 6 is secured to one projecting end of a sail shaft 7 rotatably mounted in opposite walls of the windmill. Within the toy building a bucket wheel 8 having radially extending buckets 9 is secured to the sail supporting shaft 7.

A funnel shaped hopper 10 is so mounted upon the roof 11 of the windmill that the constricted end thereof extends downwardly through an opening 12 formed in the roof for the purpose of receiving this portion of the hopper. When so positioned the discharge orifice 13 of the hopper is positioned in operative association to the buckets 9 of the sail driving bucket wheel 8 so that material in the hopper will flow downwardly through the outlet orifice into the adjacent bucket. The weight of this material which is retained in the bucket will rotate the wheel in the well known manner causing the sail 6 of the windmill to be rotated as though the same were being operated by a current of air. The bucket wheel is preferably formed by stamping a blank from a thin piece of sheet metal and then cutting and forming the blank in such a way as to provide radially extending arms 14 having the buckets 9 formed thereon as shown.

Below the bucket wheel the windmill is provided with a curved inclined bottom 15 forming a chute leading to a spout 16 extending outwardly through an opening 17 formed in one wall of the toy. The operating material 18 which may be of any suitable material such, for example, as sand, water or the like, is positioned in the hopper and flows downwardly through the outlet orifice 13 under the influence of gravity. In falling, the material rotates the sail driving bucket wheel 8 which in turn rotates the sail as above described. In dropping past the bucket wheel the operating material falls into the chute-like bottom 15 where it is collected and down which it flows to the spout 16 where it passes out of the toy. The effect of the material flowing out of the spout 16 in conjunction with the rotation of the sail 6 gives the beholder the impression of work, such as grinding or pumping, being actually performed.

If desired, the opposite end of the sail supporting shaft 7 may extend beyond the associated wall 5 and be provided with a crank wheel 19 connected by a connecting link 20 to the movable arm 21 of a toy figure 22 so as to give the impression of an operator.

In order to provide a structure where the sail 6 will be operated at a higher speed than is possible with the direct drive above described the sail supporting shaft may have a spur gear 23 secured thereto and the bucket wheel 8 may be mounted upon a counter-shaft 24 provided with a relatively large gear 25 in mesh with the gear 23 upon the sail shaft. Obviously such a construc-

tion will increase the speed of rotation of the sail 6 with relation to the bucket wheel.

What I claim is:

The combination in a toy windmill having side walls and a roof, of a hopper located above said roof and provided with an outlet projecting through said roof and located within said mill, a shaft rotatably mounted in said walls, a sail secured to said shaft on the outside of said walls, a bucket wheel secured to said shaft within said walls and located in operative relation to said hopper outlet so as to be rotated by material flowing from said hopper, a chute located within said walls and extending through an opening to the exterior thereof for collecting material below said wheel and delivering it to the outside of said mill, a movable figure operatively connected to said shaft so that rotation of said sail, lowering of material within said hopper, delivery of material from said chute and movement of said figure appear coordinated and corelated to the eye of an observer.

In testimony whereof, I have hereunto subscribed my name this 14th day of July, 1926.

LESTER S. GUNDERMAN.