Oct. 21, 1930.

A. J. BECKER

1,779,352

POURING MACHINE

Filed Dec. 21, 1928

2 Sheets-Sheet 1

Fig. 2.

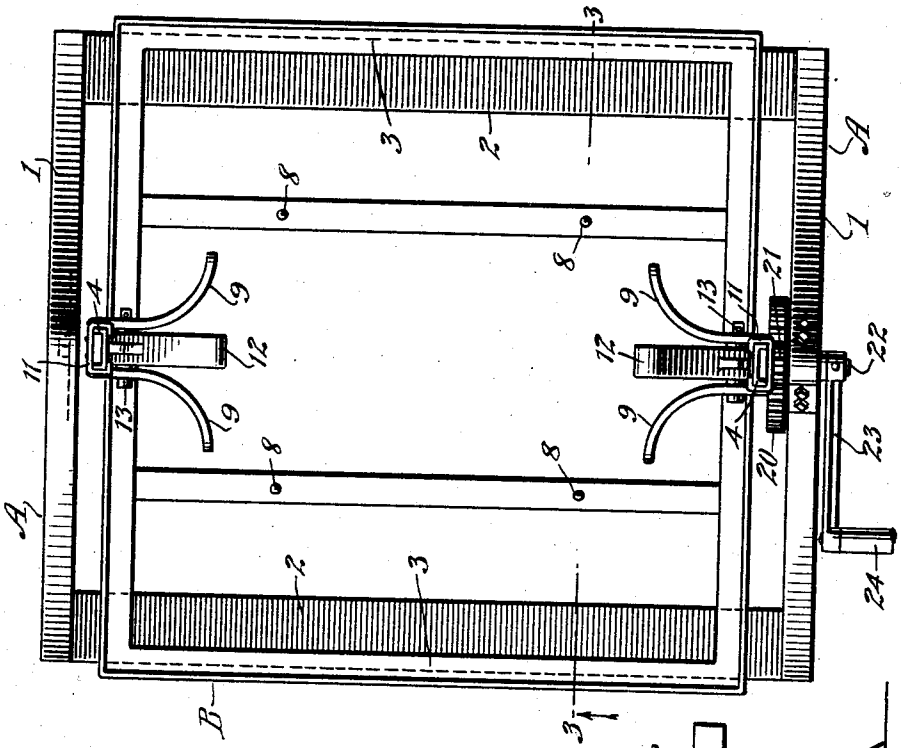
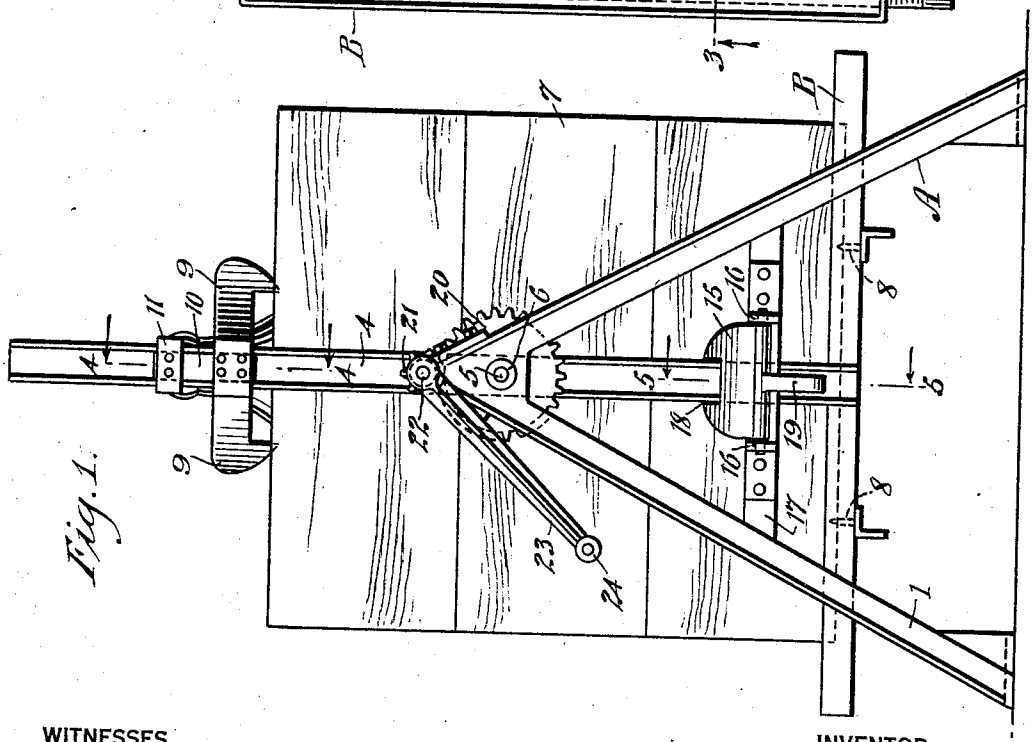


Fig. 1.



WITNESSES

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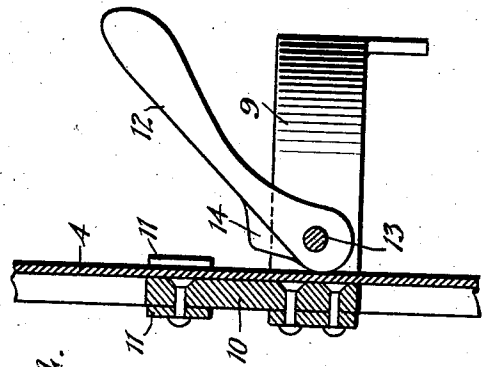


Fig. 4.

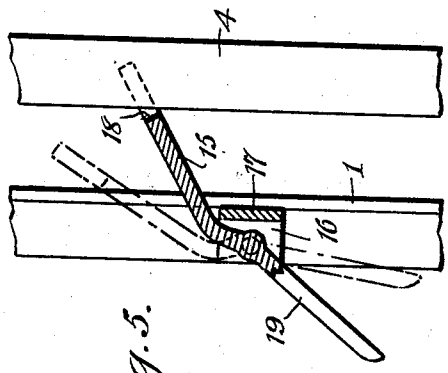


Fig. 5.

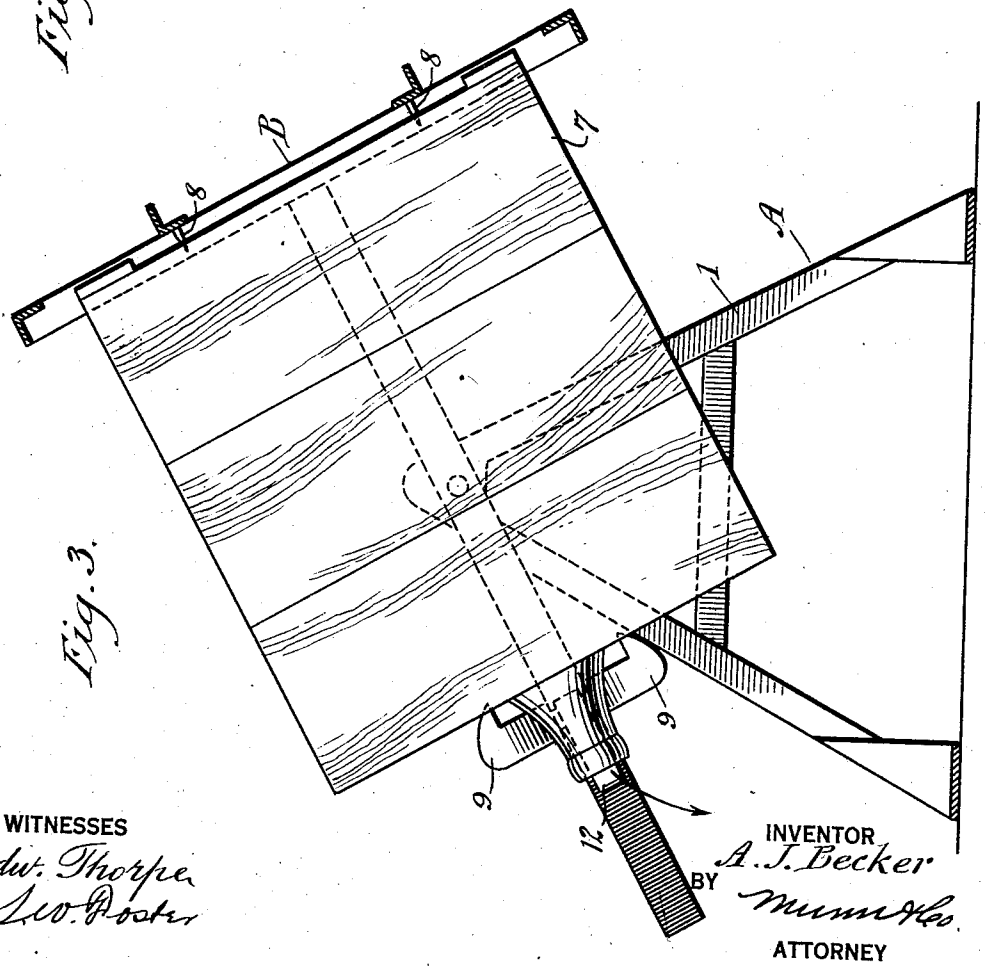


Fig. 3.

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UNITED STATES PATENT OFFICE

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POURING MACHINE

Application filed December 21, 1928. Serial No. 327,592.

This invention relates to pouring machines and more particularly to machines for supporting and tilting a carboy therefrom.

An object of the invention is to provide a pouring machine in which the carboy is securely held so that it cannot possibly slip or move other than the tilting imparted by the operator.

A further obpject is to provide a machine of this character with an improved arrangement of gear transmission whereby a minimum of power is necessary to impart a slow and accurate tilting movement to the carboy, and which permits the carboy to return to an upright locked position when the tilting means is released.

A further object is to provide an improved clamp held by an eccentric or cam in locked position, so as to secure the carboy positively in position.

A further object is to provide an improved foot-controlled, automatically operated locking device which locks the carboy in upright position either with the neck of the bottle at the top or with the parts completely reversed for complete drainage of the bottle or carboy.

My invention embodies many features of novelty and advantage, some of which may be enumerated as follows:

The carboy can be tilted though an adjustment angle within the smallest fraction or degree so that the liquid from the carboy can be poured as slowly or as rapidly as desired.

The machine is easy to operate, accurate in pouring, prevents danger to the operator, and can be manufactured and sold at a reasonably low price.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts, which will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings—

Figure 1 is a view in side elevation of my improved pouring machine, showing the carboy in upright position;

Figure 2 is a top plan view of Figure 1;

Figure 3 is a view in section on the line 3—3 of Figure 1, with the exception of the carboy which is shown in elevation and is tilted at an angle;

Figure 4 is an enlarged fragmentary view in longitudinal section on the line 4—4 of Figure 1;

Figure 5 is an enlarged fragmentary view in section on the line 5—5 of Figure 1.

My improved pouring machine comprises two main parts, namely, a base A and a swing or cradle B.

The base A comprises a pair of inverted V-shaped standards 1, 1, spaced apart and connected at the lower extremities of these standards by feet or bars 2.

The swing or cradle B comprises an open-work platform 3, to which upright bars 4 are rigidly secured. The base A and the swing or cradle B are both preferably constructed of angle bars of any suitable form which is a convenient and, I believe, a superior manner of constructing the machine.

No attempt is made to illustrate specifically the exact assemblage of the parts and the manner of connection as it is well within the scope of the invention to form these parts in any way desired, of course bearing in mind the essential features thereof which constitute the invention.

The uprights 4 above described are provided with outwardly projecting studs 5 which have pivotal mounting in bearings 6 at the upper ends of the standards 1, and it will be noted that these pivots are so located that the platform 3 has an elevation from the ground sufficient to enable it to swing entirely throughout the arc of a circle, if desired. In other words, there is no limit to the swinging movement of the swing or cradle B so that the carboy 7 secured on the cradle can be tilted to any angle or completely reversed in position whereby the carboy will be upside down for complete drainage.

To prevent accidental slipping or sliding movement of the carboy 7 on the platform 3 I preferably provide upwardly projecting pins 8 on the platform 3 which embed themselves in the bottom of the carboy due to the weight of the carboy thereon. I also provide improved clamping means engaging the upper portion of the carboy, as illustrated gen-

erally in Figures 1, 2 and 3 and specifically in Figure 4 of the drawings.

This clamping means comprises laterally flared or curved hooks 9, 9 at opposite sides of the machine which are fixed to blocks 10 movable against the outer faces of the uprights 4 between the flanges of said uprights 4, it being understood that in the preferred construction these uprights 4 constitute channels.

The blocks 10 have transversely extending plates 11 at the front and rear of the uprights so as to couple the parts together but permit a free, sliding movement of the blocks and their clamping members vertically of the uprights.

Eccentric levers 12 are pivotally secured to the clamping members 9, as shown at 13, and engage the inner faces of the uprights, so that these eccentric levers automatically lock the clamps in their engagement with the carboy.

Enlargements 14 are preferably provided on the levers 12 to prevent them from swinging too far in one direction, so that they will automatically grip and hold the clamps 9 even although a careless workman fails to force the free end of the lever downward.

In placing the carboy on the cradle, the clamping members 9 are moved upwardly and then allowed to drop so that they will engage the top of the carboy, and the eccentric lever 12 will operate to hold the clamps 9 in firm engagement with the carboy and clamp the carboy down on the platform 3, with the pins 8 projecting into the bottom of the carboy, so that there will be no possibility of accidental slipping or otherwise independent movement of the carboy relative to the cradle.

At one side of the pouring machine I provide an automatic lock 15 which comprises a plate pivotally mounted between brackets 16 on a crossbar 17 of one of the standards 1. This plate 15 has curved edges extending from the ends of the plate to a recess 18 in the plate adapted to receive the upright 4 and lock the same against pivotal movement.

A foot lever 19 projects from the plate 15 and may be moved by the foot of the operator to swing the plate 15 on its pivot and release the upright 4 to allow the cradle to be tilted, as clearly indicated in Figure 5 of the drawings.

It is to be understood of course that the plate 15 by reason of its weight and force of gravity tends always to move inwardly so that when a carboy is tilted and returned to upright position it will be automatically locked by the plate 15 so that it cannot swing. Furthermore, this lock functions to secure the platform and carboy in completely reversed position to drain the carboy.

To manually tilt the cradle and the carboy I provide a large gear wheel 20 on the stud 5 at one end of the machine which is fixed to turn with the stud. This gear wheel 20 is driven by a pinion 21 mounted on a short shaft 22 at the upper extremity of the standard 1, and a crank arm 23 is secured to this short shaft 20 and has a handle 24 at one end so that it may be readily grasped and turned to impart a tilting movement to the cradle and carboy.

The invention is of course not limited to the exact ratio between the pinion 21 and the gear 20, but it is desirable that the number of teeth on the pinion be appreciably less than the number of teeth on the gear wheel so that a minimum of power is necessary to tilt the cradle and also slow motion is imparted thereto which is capable of complete control and insures accuracy.

When the pouring operation is over it is simply necessary to release the crank arm 23 when the cradle and carboy will slowly swing back to an upright position due to the fact that the carboy and cradle are heavier below the pivot point than they are above the same, but this return swinging movement is checked by the proportion of the gears so that there will be no sudden swing to the cradle and carboy, and when the cradle reaches an upright position the lock 15 will function to engage the upright 4 and securely hold the cradle against movement until released by the operator's foot pressing downwardly upon the lever 19.

In the handling of carboys containing dangerous chemicals it is of extreme importance to provide against any possibility of splashing of the liquid, and in my pouring machine I have provided mechanism which not only functions properly with this end in view but is designed to prevent such accidents even though the machine is operated by careless operators. In other words, the features of my improved machine are not only mechanically perfect for proper operation but are in the nature of safety devices which not only protect the operator and prevent waste of valuable chemicals but result in reducing the insurance rates of those employing the machine.

Various changes and alterations might be made in the general form of the parts described without departing from my invention and hence I do not limit myself to the precise details set forth but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

I claim:

1. A pouring machine, comprising a base and a cradle, means pivotally connecting the cradle with the base, means for clamping a carboy on the cradle, a gear wheel fixed to turn with the pivot of the cradle, a pinion on the base meshing with the gear wheel, a crank arm fixed to turn with the pinion and adapted to be manually operated to tilt the cradle and carboy and by reason of the dif-

ferences in diameter between the pinion and the gear wheel to permit the tilting to be slowly and accurately performed and resistance offered to the return swinging movement of the cradle, a lock on the base automatically functioning to engage the cradle and secure the same in upright position, said lock including a recessed plate pivotally connected to the base and having curved or cam faces whereby a fixed part on the cradle moves into locking engagement with the recess, and a foot lever connected to the locking plate.

2. A pouring machine, comprising a base and a cradle, said cradle consisting of a platform and a pair of uprights pivotally connected intermediate their ends to standards on the base, a gear wheel fixed to turn with the pivot of the cradle, a pinion supported on the base and meshing with the gear wheel, a crank arm fixed to turn with the pinion, and a lock movable on the base and adapted to engage one of the uprights of the cradle to secure the cradle in upright position, said lock having cam faces, whereby the cradle will swing into locked position from either direction.

ALLEN J. BECKER.