

S. M. HOPKINS.
CHURN.

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957,608.

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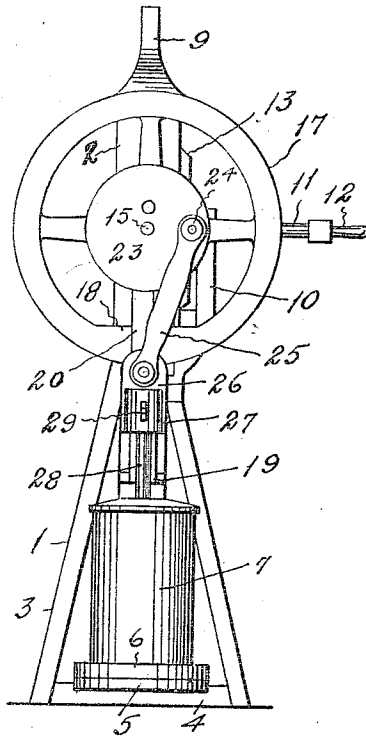


Fig. 1.

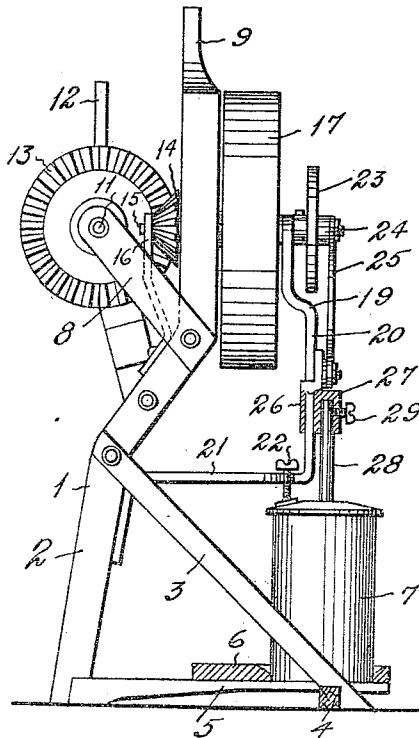


Fig. 2.

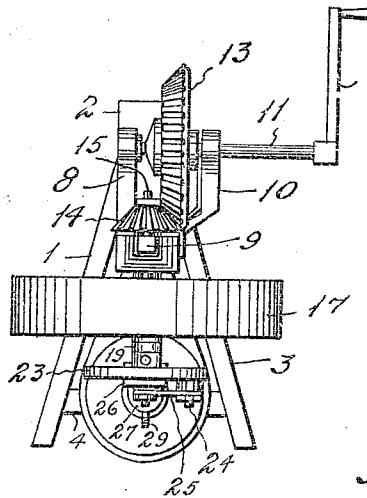


Fig. 3.

WITNESSES:

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CHURN.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SAMUEL M. HOPKINS, citizen of the United States, residing at Emhouse, in the county of Navarro and State of Texas, have invented certain new and useful Improvements in Churns, of which the following is a specification.

This invention relates to churns and particularly to that class employing a reciprocating dasher and rotary operating means.

The object of the invention is to provide a novel churn frame, means for holding the churn receptacle, and mechanism for operating the churn dasher.

Finally the object of the invention is to provide a device of the character described that will be strong, durable, efficient, and simple and comparatively inexpensive to construct, also one in which the several parts will not be likely to get out of working order.

With the above and other objects in view, the invention has relation to certain novel features of construction and operation, an example of which is described in the following specification and illustrated in the accompanying drawings, wherein:

Figure 1 is a front elevation, Fig. 2 is a side elevation with the platform in section, and Fig. 3 is a plan view.

In the drawings the numeral 1, designates a frame comprising an upright rear post 2 from the central portion of which legs 3 incline downward and forward and diverge from each other. The lower ends of the legs are tied together by a horizontal brace 4 which supports between the legs, the forward end of a platform 5 set into the lower end of the post at its rear. The platform is suitably shaped at its forward end to support a churn receptacle 7 which is held in position on the platform by a guard ring 6 shaped to permit the bottom of the receptacle to be freely placed on the platform.

Near its upper end the post 2 is inclined forward and supports a rearwardly extending and upwardly inclined bearing arm 8. From the inclined portion of the post extends vertically and terminates in a handle 9. A bearing member 10 is secured to the inclined portion of the post and extends upward in line with the upper end of the arm 8. The member and the arm support a horizontal operating shaft 11 which extends beyond the member and has its projecting end shaped to receive a crank handle 12 or other operating means. A bevel gear 13 is fixed

on the shaft between the arm and the bearing member and meshes with a bevel pinion 14 fixed on a shaft 15 extending through the post 2 at right angles to the shaft 11. The rear end of the shaft 15 is supported and the pinion confined thereon, by a bracket 16 secured at its lower end to the post as shown in Fig. 2. On the forward end of the shaft 15 which projects forward from the post, a suitable balance wheel 17 is fixed. This wheel is caused to assume a predetermined position when stopping by a weight 18 placed at the intersection of one of its spokes and its rim. The forward end of the shaft 15 is supported by the upper end of a vertical guide standard 19 which is off-set forward to form a slide-way 20. The lower portion of the standard is bent rearward at substantially right angles as indicated at 21 and secured to the post 2. The forward end of the portion 21 extends a short distance over the churn receptacle 7 and by means of a wing screw 22 passed down through the said portion and engaging with the receptacle, the latter is held in position on the platform 5.

The balance wheel 17 is confined between the post and the standard 19 on the shaft 15, while on the said shaft in front of the standard, a disk plate 23 is secured, the off-set slide-way 20 extending under the disk. The disk is provided with a wrist pin 24 having pivotal connection with the upper end of a link 25. At its lower end the link has pivotal connection with a slide block 26 mounted to slide on the slide-way 20. The block is provided with a boss 27 open from its under side to receive the upper end of the churn dasher 28, which is removably held in the boss by a set screw 29. The disk 23 may be provided with openings at various distances from its center with which the wrist pin may be engaged and the length of the stroke of the dasher thus varied.

It is obvious that by turning the crank handle 12 and rotating the gear 13 motion is imparted to the shaft 15 and the disk, which by means of the wrist pin, link and block converts the rotary motion into reciprocating motion which is imparted to the churn dasher. By means of the weight 18, the balance wheel is caused to come to rest with the link 25 at one side of the center and thus preventing the wheel stopping on "dead center." It is obvious that after the

parts are well in motion, the balance wheel by its momentum, will assist in the rotation of the shaft 15 and the operation of the churn dasher thereby relieving the operator from a portion of the exertion which would be otherwise required.

The operator in manipulating the churn grasps the handle 9 with one hand and the crank handle 12 with the other hand. It will be noted that the frame is substantial, yet simple in construction, while the platform and ring 6 provide an efficient and convenient means for supporting the churn receptacle.

What I claim is:

1. In a churn, a frame, an operating shaft supported on the frame, a bevel gear mounted on the shaft, a drive shaft supported on the frame at right angles to the operating shaft, a bevel pinion fixed on the drive shaft and meshing with the gear, a balance wheel fixed on the drive shaft, a disk fixed on the drive shaft, a wrist pin mounted on the disk, a standard supporting one end of the drive shaft and provided with a vertical slide-way, a portion of the standard bent and secured to the frame, means associated with the bent portion of the standard for holding a churn receptacle in place, a platform carried by the frame for supporting the churn receptacle, means for retaining the churn receptacle on the platform, a slide block mounted on the slide-way of the standard, means for fastening a churn dasher to the block, and link connecting the block and the wrist pin.

2. In a churn, a frame comprising, a vertical post having an inclined portion and a vertical portion, a bearing arm extending from the inclined portion of the post, a bearing member extending from the oppo-

site side of the inclined portion, an operating shaft supported by the arm and the member, a bevel gear fixed on the shaft between the arm and the member, a drive shaft extending through the vertical portion of the post, a bevel pinion fixed on the drive shaft on one side of the post and meshing with the gear, a balance wheel mounted on the drive shaft on the opposite side of the post, an off-set standard engaging the drive shaft adjacent the balance wheel, a slide-way formed on the standard, a disk mounted on the drive shaft beyond the standard and over the slide-way, a slide block mounted on the slide-way, a link connection between the block and the disk, means for fastening the block to a reciprocating churn dasher, legs extending forward from the post of the frame, and a churn receptacle platform supported between the legs.

3. In a churn, a frame, a bevel gear operating mechanism supported on the frame, a balance wheel associated with the gear mechanism, means on the balance wheel for causing it to come to rest in a predetermined position, and a dasher reciprocating mechanism connected with the gear mechanism including, a disk, a slide block arranged to be fastened to a churn dasher, and a connection between the disk and the block.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL M. ^{his} × HOPKINS.
mark

Witnesses:

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W. C. BRISTOW.