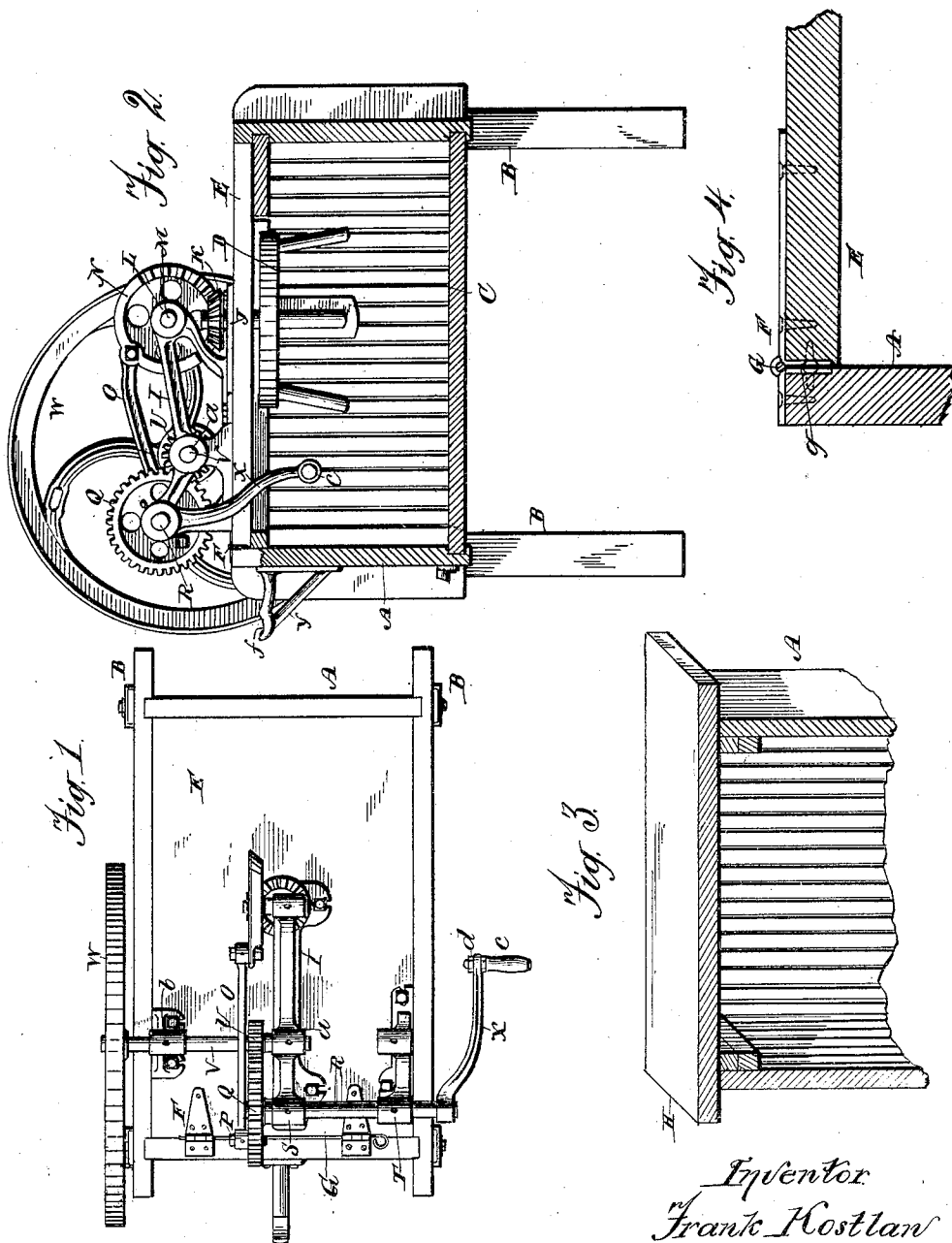


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PATENTED MAY 30, 1905.

F. KOSTLAN.  
GEARING FOR WASHING MACHINES.  
APPLICATION FILED FEB. 29, 1904.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

FRANK KOSTLAN, OF TRAER, IOWA.

## GEARING FOR WASHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 791,033, dated May 30, 1905.

Application filed February 29, 1904. Serial No. 195,952.

*To all whom it may concern:*

Be it known that I, FRANK KOSTLAN, a citizen of the United States, residing at Traer, in the county of Tama and State of Iowa, have invented certain new and useful Improvements in Gearing for Washing-Machines, of which the following is a specification.

The object of this invention is to produce a simple and efficient washing-machine, the construction being such as to give a reciprocating rotatory motion to the beater with a continuous rotary motion of the crank or drive wheel and the mechanism being so mounted and arranged as to give convenient access to the wash-tub or tank, as will more fully appear in the description and claim following.

In the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of a washing-machine embodying my invention. Fig. 2 is a side elevation of the same, the tank being in section. Fig. 3 is a fragmentary view showing the washing mechanism removed and a detachable table-top put in place thereof on top of the tank. Fig. 4 is a section through one of the hinges of the tank-top on which the washing mechanism is mounted, showing a special form of hinge.

In the drawings, A is the tub or tank, in this case shown rectangular and attached to supporting-legs B. The inner sides of the tub are fluted at C, so as to give some rubbing action to the clothes as they are agitated by the beater D. The axis of the beater passes through the tank-cover E, hinged at one end to the tank by hinges F, provided with a detachable pivot G, so that the cover may be either tipped back to give access to the interior of the tub or entirely removed at will. In the latter case the tub may be used as a table by placing on top a portable cover H, as shown in Fig. 3.

The mechanism that actuates the beater is mounted on the cover E and is described as follows: I is a casting screwed to the cover E and provided at one end with a bearing J for the beater-spindle, which has a bevel-pinion K. Above this is another bearing L for a short shaft M, carrying a mutilated

bevel-gear N, meshing with the pinion. This bevel-gear is coupled by a connecting-rod O with the crank P of a spur-gear Q, mounted on a shaft R, journaled in bearings S and T, the former being on the casting above referred to. Meshing with this gear is a pinion U on a shaft V, journaled in bearings a and b, the former being a part of the casting I. At the outer end of the shaft is a fly-wheel W, adapted to give momentum to the beater. To the outer end of the other shaft R is attached a crank X. The handle of this crank c is made detachable by means of a nut d and may be attached directly to the fly-wheel, in which case the machine operates more easily, but of course more slowly, as the fly-wheel runs much faster than the gear which actuates the beater. For ordinary use the machine is arranged as shown, in which case the fly-wheel and its pinion are mere idlers, but by their speed and weight impart a desirable momentum to the rotating mechanism, as above mentioned.

It is to be noted that the radius of the crank on the spur-gear is less than that on the bevel-gear. Consequently the latter does not revolve, but has a reciprocating rotatory movement, which in turn is imparted to the beater, but in greater degree, as the beater-pinion is smaller than the bevel-gear. Provision is made for shifting the crank-wrist on the spur-gear by providing the latter with holes e of greater or less radius, and by this means the machine is adjusted to the character of the work or the strength of the operator.

To the end of the tank to which is hinged the cover is secured a bracket Y, which forms a support for the cover and its attachments when tipped back. In this case the bearing S rests on the bracket, which has a depression at f therefor.

As the hinges are subjected to considerable strain when the cover is elevated, they are in practice made with wings g, bent at right angles to the body of the hinge, and the hinge is then attached on a side and edge of each part, the tank and cover, as shown in Fig. 4. This construction greatly strengthens the hinge connection and prevents splitting

of the wood near the edge, as would be apt to take place if hinges of ordinary form were used.

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

The herein-described driving mechanism for a washing-machine, comprising a bevel-pinion for the beater-spindle, a bevel-gear meshing therewith, and provided with a wrist-pin, a spur-gear provided with a wrist-pin at shorter radius than that on the bevel-gear, a connecting-rod for said wrists, a spur-pinion meshing with the spur-gear, shafts

for said bevel-gears and spur-gear and pinion, a trussed bearing-block for all said shafts in a single casting, separate, lateral bearings a crank attached to the gear-shaft, and a fly-wheel adapted for the attachment of a crank attached to the spur-gear shaft, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK KOSTLAN.

Witnesses:

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