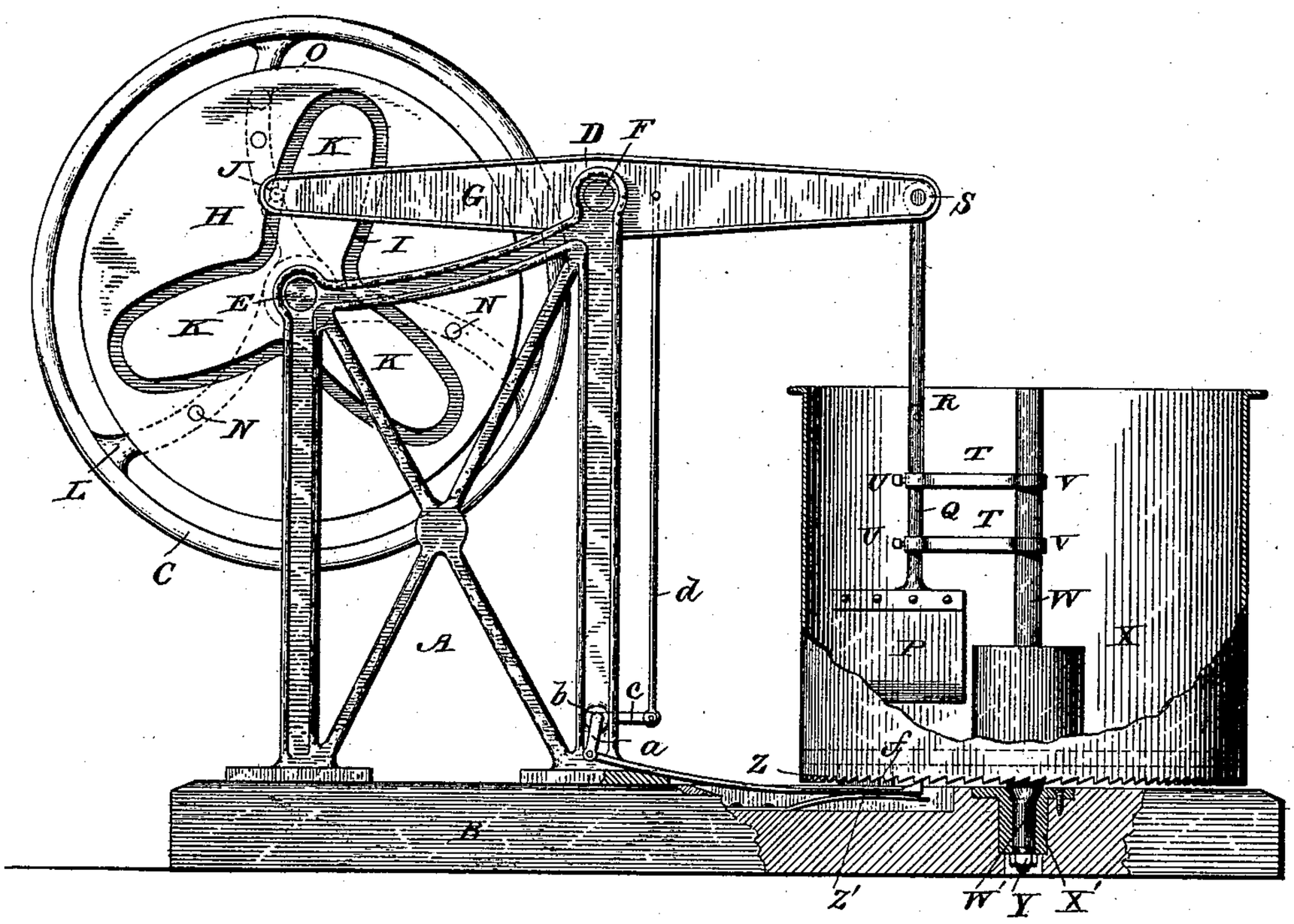
(No Model.)

F. BLOOMQVIST.

MEAT CHOPPING MACHINE.

No. 400,999. Patented Apr. 9, 1889.



Witnesses,

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UNITED STATES PATENT OFFICE.

FRANK BLOOMQVIST, OF TWO HARBORS, MINNESOTA.

MEAT-CHOPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 400,999, dated April 9, 1889.

Applicotion filed July 27, 1888. Serial No. 281,247. (No model.)

To all whom it may concern:

Be it known that I, FRANK BLOOMQVIST, a citizen of the United States, residing at Two Harbors, in the county of Lake and State of Minnesota, have invented certain new and useful Improvements in Meat-Chopping Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a meat-chopping machine in which the chopping-knife is given a rapid reciprocating movement.

It is well known that meat-chopping machines hitherto in vogue have used a rotary meat-receptacle in which the chopping-knives are arranged to reciprocate, and that such receptacle has been rotated by means of a spring pawl-and-ratchet mechanism, while the chopping-knives have been actuated by a working-beam operated in various ways. In these old machines the complexity of mechanism and the manner in which they were arranged rendered them easily susceptible to disorder and rapid wear.

The object of my invention is to provide the bottom of the rotary receptacle with means for receiving the force of the chopping-knives to prevent undue wear and strain upon the central pivot; and a further object is to provide more cheap, simple, and effective mechanism for rotating the receptacle and accelerating the oscillations of the working-beam.

A still further object is to make the machine more compact, to enable it to be moved about from place to place with greater facility and to be built at less expense.

With these ends in view my invention consists in a working-beam actuated by a driving-wheel provided with a trefoil groove, a chopping-knife attached to a bar connected to the beam, a rotary meat-chopping receptacle, within which the knife operates, a block or seat beneath the floor of the receptacle to receive the concussion of the knife, and a bell-crank lever having one arm connected with the latter and the other arm pivoted to a spring-pawl.

My invention further consists in journaling the working-beam above the axis of the driving-wheel, whereby the beam may project and operate with facility over the wheel, all of which will be more fully described hereinafter, and pointed out in the claim.

Referring to the accompanying drawing, (which is a view in side elevation,) the reference-letter A denotes a frame or standard, which rests upon the base B. The driving-wheel C and working-beam D are journaled in the upper part of said standard at E F. The working-beam is journaled higher up upon the standard, in order to allow free play to the left arm, G, which latter engages the cam-block H by means of the trefoil groove I and pin J. This trefoil groove forms a tri-cam, K, the arms of which radiate from the axis of the driving-wheel C. The cam-block H is secured to the spokes L of the driving-wheel C by means of pins or rivets N, and the driving-wheel is operated by a hand-crank, O.

The chopping-knife P is rigidly secured to the lower section, Q, of a jointed bar, R, pivoted to and depending from the right free arm, S, of the working-beam. This lower section, Q, of the knife-bar is provided with a pair of laterally-extending guide-rods, T, rigidly secured thereto by set-screws U, or by any suitable means. The outer ends of these bars are provided with eyes V, which loosely embrace the central shaft, W, and slide up and down thereon as the knife and bar are reciprocated. The shaft W also forms the axis of the rotary receptacle X, within which the chopping-knife is located and operates. The lower end, W′, of the shaft W extends through the bottom of the receptacle and is journaled in the box X′. Said box is countersunk in the base B, and the lower extremity of the shaft extends through the box a short distance and is threaded to receive the nut Y, which securely locks the shaft in place, and also serves as a brake to regulate the freedom with which the receptacle rotates.

The mechanism for rotating the meat-receptacle consists of a continuous annular ratchet, Z, upon the lower edge thereof. A spring-pawl, Z′, engages this ratchet, and is reciprocated by means of bell-crank lever *a*, fulcrumed in the lower part of the main frame B at *b*. The opposite arm, *c*, of this lever is connected with the outer free arm, S, of the working-beam by means of vertical connecting-rod *d*. In order to prevent the meat-re-

ceptacle from undue lateral strain by the percussion of the chopping-knife, the base is provided with a seat, *f*, upon which the bottom of the receptacle rests to receive the shock given by the knife.

The preferred manner of constructing my device having been set forth, I will now proceed to describe its operation.

The main driving-wheel C is rotated by means of the crank O, and during its movement the pin J travels in the trefoil groove I, which forms the tri-cam K, and each complete revolution of the wheel will cause the working-beam, and hence the knife, to make three reciprocations. Each reciprocation of the working-beam causes an equal number in the spring-pawl through the medium of the vertical connecting-rod and the bell-crank lever. Thus it will be observed that as the chopping-knife operates the meat-receptacle will be rotated simultaneously and in unison with the rapidity of the crank-wheel.

It is evident that many small changes which might suggest themselves to a skilled mechanic could be resorted to without departing from the spirit and scope of my invention. Therefore I do not confine myself to the exact construction herein shown.

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

In the herein-described meat-chopping machine, the combination of the frame, the trefoil wheel journaled thereto, the working-beam, also journaled to said frame, a pin secured to said working-beam and traveling in said trefoil, a bell-crank lever pivoted at the base of the frame, a rod connecting the bell-crank lever and the working-beam, a spring-pawl connected to said bell-crank lever and engaging the ratchet around the lower periphery of the meat-receptacle, a jointed rod connected to said working-beam and provided with a reciprocating knife, the upright shaft and guides, and a seat located beneath the floor of the meat-receptacle, all arranged and adapted to operate in the manner and for the purpose substantially as described.

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

FRANK BLOOMQVIST.

Witnesses:
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