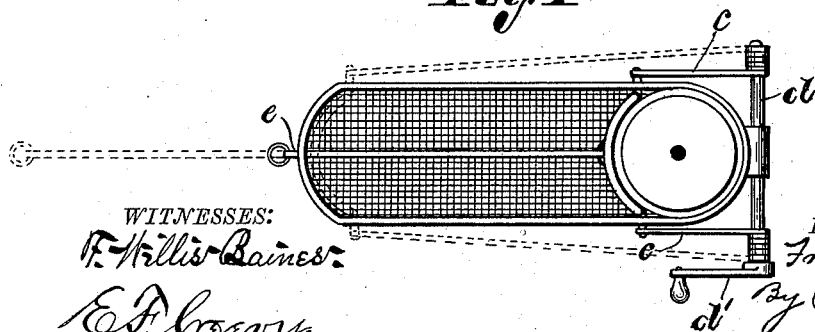
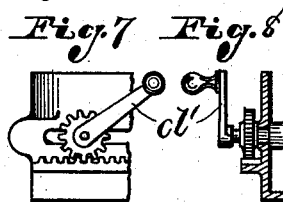


Patented June 5, 1888.



WITNESSES:  
F. Willis Baines:  
E. F. Crovy.

INVENTOR:  
Frank K. Hay.  
By *Paul A. Stump*  
Attorney.

# UNITED STATES PATENT OFFICE.

FRANK K. WAY, OF SPRINGFIELD, OHIO, ASSIGNOR TO JOHN FOOS, OF  
SAME PLACE.

## ICE-SHAVER.

SPECIFICATION forming part of Letters Patent No. 383,928, dated June 5, 1888.

Application filed April 13, 1886. Serial No. 198,761. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK K. WAY, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Ice-Shavers, of which the following is a specification.

My invention relates to that class of ice-cutting machines in which a vertical revolving cutting-cylinder is journaled in a suitable chamber and adapted to be revolved therein, in combination with a suitable reservoir or ice-receiving chamber and means for feeding the ice to and holding the same in contact with said cylinder.

It also relates in its nature to the ice-shaver shown and described by me in my application for Letters Patent, No. 198,045, filed April 7, 1886.

My invention consists in the constructions and combinations of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a sectional elevation view of a machine embodying my invention. Fig. 2 is a side elevation view of the reservoir and feeding mechanism. Fig. 3 is a plan view of the same. Fig. 4 is a plan view showing a modified form of the feeding device. Fig. 5 is a detailed view of the receptacle-holding device. Figs. 6, 7, and 8 are detailed views of a modification referred to hereinafter.

In said drawings, A represents the outer casing of the device, which is supported by legs *a*. The revolving cylinder B is journaled in one end of the main casing A, which is provided at this point, in the bottom, with a circular opening, in which the lower end of the cylinder is journaled. The cutting cylinder B is provided, in the usual way, with a series of knives or bits, which project through the periphery thereof to engage the ice. A hand-wheel, C, is connected by suitable gearing to said cylinder, which is adapted to be revolved thereby. The main casing A is extended at one side, forming a reservoir, A', which opens at one end directly to the cylinder B and at right angles thereto. This reservoir A' is provided with a cover, A<sup>2</sup>, and is adapted to receive the ice to be shaved or chipped. In either side of the reservoir A' is a slot, *b*,

through which a connection is made with a follower, D, adapted to reciprocate back and forth in said reservoir. This follower D is curved to correspond with the curvature of the cylinder, and suitable means are provided for drawing said follower back and forth in the said reservoir for the purpose of drawing the ice to the cylinder. I preferably accomplish this by means of small chains *c*, adapted to run over suitable supporting-wheels, *c'*, on the main casing.

Supported in suitable bearings under the reservoir is a small transverse shaft, *d*, provided at either end with a sprocket-wheel adapted to engage with the links of said chains *c*. This shaft *d* is provided at one end with a crank, *d'*, by which it may be revolved in either direction. The follower D is provided at either side with suitable projections to project through the slots *b*, and is connected at either side to the respective chains *c*. It will thus be seen that a revolution of the crank *d* in either direction will produce a corresponding reciprocating motion to the follower D.

In filling the reservoir A' the follower D is run back to the rear end of said reservoir and the ice placed in the reservoir between the follower and the cylinder. As the cylinder B is revolved, the ice is drawn up to and forced against said cylinder by turning the hand lever or crank *d*.

In Fig. 4 I have shown the shaft *d* placed at the end of the reservoir, the chains *c*, or their equivalents, being in this case attached at one end to the projections on the follower D and at the other to the shaft *d*, on which they are adapted to be wound by turning said shaft. In this case a chain or other suitable connection, *e*, is attached to the back of the follower and extended through the rear end of the reservoir, by means of which the follower may be returned to its normal position when the ice in the reservoir is exhausted.

It is evident that the same result may be accomplished in various ways—for instance, as shown in Figs. 6, 7, and 8. The shaft *d* may be journaled in the follower D and provided at either end with a pinion adapted to engage with suitable racks on the side of said reservoir.

Instead of having the slots *b* in the side of

the reservoir, they may be placed at the top or bottom of said reservoir, or in other suitable positions, and a connection made with the follower by suitable means from the crank-shaft.

5 By this means I provide an ice-shaver the reservoir of which is adapted to be entirely closed, means being provided in said reservoir by which the ice therein may be readily drawn to the cutting-cylinder until the reservoir is ex-  
10 hausted. The ice shavings or cuttings pass through the sides of the cylinder, and are adapted to be ejected therefrom by an ejector, E, as described in a prior application filed by me.

15 Immediately below the cylinder is a receptacle-holding device, F, on which a tumbler or other receptacle may be supported. This receptacle-holding device consists, preferably, of a plate, *f*, provided with an extended arm, *f'*,  
20 bored out at one end to fit over a downwardly-projecting stud, *f*<sup>2</sup>, on the casing A, a set-screw, *f*<sup>3</sup>, being adapted to secure said plate at any desired position of adjustment on said stud, and thus provide for holding tumblers  
25 or other holding-receptacles of different sizes, as desired.

I do not in this application make any claim to the cutting mechanism and the discharge mechanism herein shown and set forth, nor do  
30 I claim the curved follower in connection with the cutting-cylinder, as these features are made the subject-matter of claims in my pending application, No. 198,045, filed September 8, 1886.

35 Having thus described my invention, I claim—

1. The combination, with the main casing having the cutting-cylinder therein, the reservoir at right angles to the axis of said cylinder,  
40 and a follower having projecting ends adapted to extend through the sides of said casing, of

the revolving shaft journaled in bearings on said casing and chains connected to said follower on either side, said chains being connected to said shaft, so that a revolution of  
45 said shaft will move said follower, substantially as and for the purpose set forth.

2. The combination, with the main casing provided with an opening in the lower side thereof and an open-ended cutting-cylinder in  
50 said casing opposite to said opening, of a projecting stud at right angles to said casing, an adjustable plate on said stud, and means for securing said plate on said stud at a greater or less distance from said casing, substantially  
55 as specified.

3. The combination, with the cutting mechanism and the reservoir in a plane at right angles to the plane of said cutting mechanism, said reservoir being provided with longitudinal  
60 openings in the sides thereof, of the traveling follower provided with projections extending through said openings, and endless chains connected to said projections and passing over supporting-wheels, and engaging with sprock-  
65 et-wheels on a revolving shaft, substantially as and for the purpose set forth.

4. The combination, with the main casing provided with an opening in the bottom and an open-ended cutting-cylinder in said casing,  
70 of a projecting stud at right angles to said casing and an adjustable plate on said stud, means for securing said plate in different positions on said stud, and a discharging mechanism in said cylinder, substantially as set forth.  
75

In testimony whereof I have hereunto set my hand this 9th day of April, A. D. 1886.

FRANK K. WAY.

Witnesses:

CHASE STEWART,  
PAUL A. STALEY.