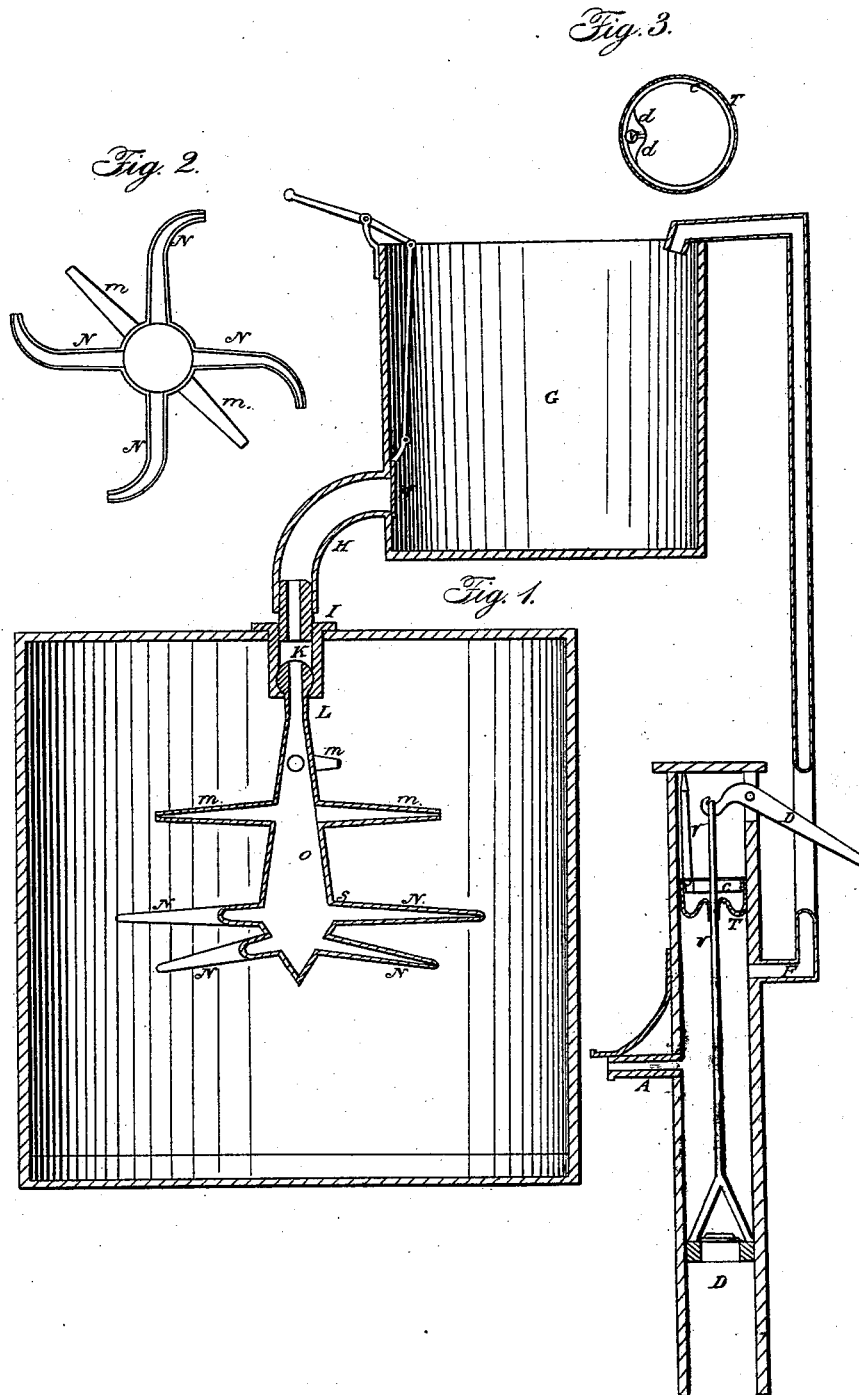


J. DUTTON.
Ice Machine.

No. 3,080.

Patented May 8, 1843.



UNITED STATES PATENT OFFICE.

JOHN DUTTON, OF ASTON, PENNSYLVANIA.

IMPROVEMENT IN ACCUMULATING ICE.

Specification forming part of Letters Patent No. 3,080, dated May 8, 1843.

To all whom it may concern:

Be it known that I, JOHN DUTTON, of Aston, in the county of Delaware and State of Pennsylvania, have invented a new and useful Method of Accumulating Ice in Ice-Houses and an Apparatus to Effect the Same, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a vertical section. Fig. 2 is a section of the revolving jet. Fig. 3 is a horizontal section of the jointed expanding ring.

This invention consists in the construction of an apparatus in the center of the ice-house for throwing or sprinkling water from a head over the interior of the house in such quantities as to allow the same to freeze therein as fast as it is sprinkled, and in this manner to fill the house with ice without the trouble and expense of cutting and hauling it from ponds or rivers.

The apparatus consists of a suspended revolving hollow vessel or jet *o*, with hollow radiating arms *M N* for throwing the water over the interior of the ice-house and for turning the cylinder on the principle of the Barker reacting water-wheel—namely, by the discharge of the water from the head of the curved extremities of the hollow arms. The revolving vessel or jet *o* is suspended and made to revolve by connecting its upper end, which is formed with a neck and shoulder, to a metallic coupling box or chamber *K*, secured to the middle of the rising floor of the ice-house by flanges and screws. The jet *o* is gradually increased from the joint *L* to near the lower end at *s* for increasing its weight toward the lower end and thereby causing it to revolve more steadily, from which enlarged part it again contracts downward to a point at its lower extremity for directing the arms inserted in this contracted part downward.

Four or more reacting hollow radiating arms *N*, curved at their outer extremities, are inserted into the circumference of the vertical cylinder for discharging the water in such manner as to cause the cylinder to turn in a contrary direction from that at which the water issues, and also for spreading the water over the interior surface of the ice-house in thin layers. Four or more tapered tubes or pipes *m*, radiating from the vertical revolving

cylinder and communicating with the interior thereof, are inserted into said cylinder for the purpose of throwing the water against the walls of the ice-house as it escapes therefrom in small streams, regulating the size of the orifice or orifices at the extremities of said pipes, which will freeze as fast as the water touches the walls or the ice thereon. These pipes may be lengthened and their discharging-orifices increased or diminished at pleasure by tapered joints made to slip on them. The cylinder and pipes may be made of tin or other suitable metal and be bound with bands or rings, as required, to give them strength, and the cylinder may be connected to the neck by a screw-joint *L*.

The water for giving motion to the suspended cylinder and arms and at the same time spreading over the interior of the ice-house in thin sheets of fine spray and congealing into ice as fast as it spreads is received by said cylinder and pipes from a head or cistern *G*, placed above them, or from a hydrant or other source placed at a higher level, through a hose *H* or other connection attached to the neck of the screw *I* of the coupling or chamber and leading to the cistern or other place. The water may be raised to the cistern by means of a pump *B*, having an expanding and contracting valve *T*, made of leather or india-rubber, of a conical shape, having the apex placed downward and fastened to the spear *U* of the pump about fifteen inches below its connection with the lever or handle *D*, the base being expanded against the interior or sides of the bore of the pump by a jointed metallic expanding or contracting ring *C* placed about fourteen inches below the pivot of the lever or handle *D*.

The jointed ring *C* may be made of thin brass or iron, about two and one-half inches wide, having a solid thick piece *d* riveted on each end, between which the rod *V*, which is made tapering, is screwed, and passing between them and extended upward to the top of the pump. The end of the rod on which the screw is cut is turned in a corresponding screw-cavity formed on the outer ends of the aforesaid riveted pieces *d*, against which the tapered part of the rod *V* strikes when the rod *V* is screwed down. The rod *V*, being screwed down, causes the ring *C* to expand

and thus press the conical valve against the sides of the bore of the pump and holds it firmly in its proper place therein. (See Figs. 1 and 3.)

In raising the water the spout A must be corked tight and the pump, operated in the usual way by the brake or lever D depressing the lower arm of the brake, raises the water to the flexible inverted conical valve T, which compresses the water and causes it to enter the branch or conducting pipe F, and as the lifting-valve is depressed the conical valve is also brought down upon the water in the pump and forces it into the pipe F, and thus a continuous stream is kept up.

The gate *w* for letting on or shutting off the

water to or from the cylinder is placed at the mouth of the hose H.

What I claim as my invention, and which I desire to secure by Letters Patent, is—

The before-described mode of accumulating ice in an ice-house by means of a suspended revolving apparatus constructed as set forth or otherwise substantially the same in principle, in combination with a head of water for throwing the water over the interior of the ice-house, where it freezes, and over the body of ice as it accumulates.

JOHN DUTTON.

Witnesses:

M. BROOMALL,

D. I. CHAPMAN.