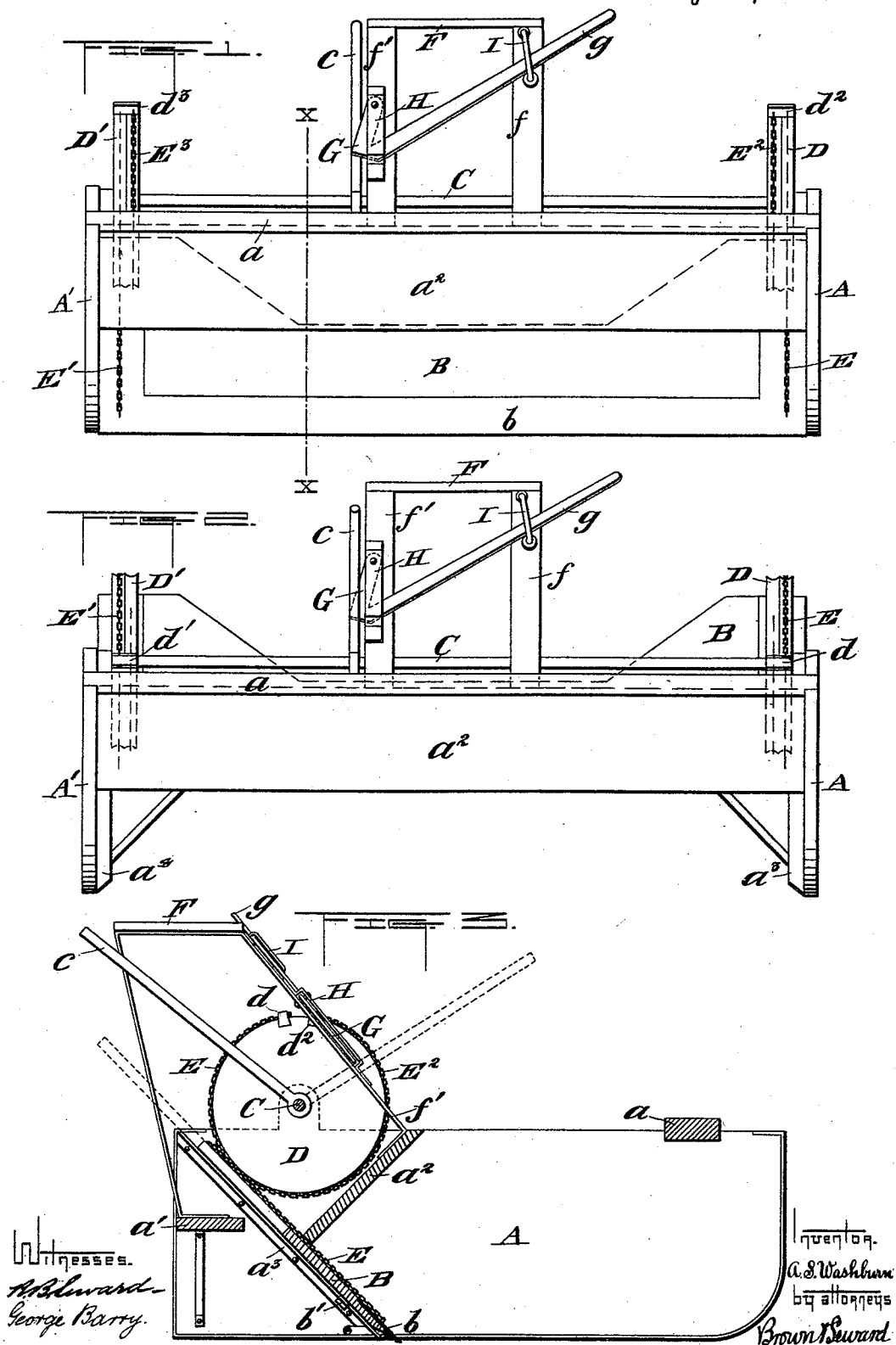


A. S. WASHBURN.
ICE SCRAPER.

Patented May 16, 1893.



UNITED STATES PATENT OFFICE.

ARCHIBALD S. WASHBURN, OF GERMANTOWN, NEW YORK.

ICE-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 497,463, dated May 16, 1893.

Application filed November 12, 1892. Serial No. 451,771. (No model.)

To all whom it may concern:

Be it known that I, ARCHIBALD S. WASHBURN, of Germantown, in the county of Columbia, in the State of New York, have invented a new and useful Improvement in Ice-Scrapers, of which the following is a specification.

My invention relates to an improvement in ice scrapers and is used for scraping off the surface of ice or removing any snow or extraneous material before said ice is cut up into blocks for storage or use.

The object of my invention is to provide an ice scraper which shall be simple in construction and operation and which will be so constructed as to prevent the freezing up of the different operating parts. In my present machine I do away entirely with racks and pinions and ratchet mechanism for raising and lowering the scraper and holding it in its raised position and in place thereof I have provided mechanism which will not freeze up by contact with the ice and snow.

A practical embodiment of my invention is represented in the accompanying drawings in which—

Figure 1 represents a front view of my machine, the scraper being shown as down in position for use. Fig. 2 is a similar view, showing the scraper as locked in its raised position, and Fig. 3 is a longitudinal vertical section on the line x, x of Fig. 1.

In the drawings, my machine is shown as of elongated rectangular form, the side pieces A, A' being suitably spaced apart by means of cross beams a, a' and a cross board a^2 . These side pieces are provided with shoes along their edges. Inclined guides a^3, a^4 , which preferably consist of angle iron, are secured to the inside of the side pieces A, A' and extend from the top of the pieces, at or near their rear ends, downwardly and forwardly at an angle of about forty-five degrees to within close proximity of their bottom. The cross board a^2 , referred to above, extends downwardly and rearwardly to within a short distance of the guides a^3, a^4 , said cross board serving to prevent the material scraped from the ice from coming into contact with the scraper raising and lowering mechanism.

B designates the scraper which rests upon the guides a^3, a^4 and slides up and down

thereon. This scraper is provided along its bottom with a suitable scraping blade b .

The mechanism which I employ for raising and lowering the scraper is as follows:—A rotating bar C is mounted at its ends in suitable boxes on the side pieces A, A' . It is provided near its ends with chain wheels D, D' which are locked to rotate therewith. The chain wheel D is preferably provided with two lugs or projections d, d^2 upon its periphery, and the chain wheel D' is provided with two corresponding lugs or projections d', d^3 upon its periphery.

E, E' denote the chains for raising the scraper and they are secured at their upper ends to the lugs d, d' respectively and then pass partially around the chain wheels D, D' and then downwardly along the scraper B to points near its bottom or lower edge where they are secured thereto. The scraper B will ordinarily, when released in its raised position, slide down the guides a^3, a^4 to its lowered position by means of its own weight, but I provide chains E^2, E^3 for positively sliding it down if, for any reason, it would not slide down by gravity. These chains E^2, E^3 are secured to the lugs d^2, d^3 on the chain wheels D, D' and extend along the periphery of the wheels in the opposite direction from the chains E, E' and are secured to the scraper B near its upper edge or top. Two grooves are formed along the periphery of each of the chain wheels D, D' for the purpose of keeping the chains from slipping off the wheels.

To prevent any tendency of the bottom of the scraper from leaving the guides a^3, a^4 , I secure guiding pieces b' to the under side of the scraper adapted to partially embrace the said guides a^3, a^4 .

A seat F is supported by suitable front and back standards secured to the frame. The back standards are secured at their lower ends to the cross beam a' and the front standards f, f' are secured at their lower ends to the cross board a^2 .

The chain wheels D, D' are rotated and the scraper B thereby raised or lowered by means of a lever c , secured to the rotating bar C in position to be operated by a person upon the seat F . This lever is inclined rearwardly when the scraper is down, and the scraper is raised as the lever is swung forwardly. The

lever *c* is locked in its forward position by means of a locking catch which acts by gravity. The catch is denoted by *G* and is pivoted at its upper end between the front seat support *f'* and a suitable casing *H* secured thereto. The bottom or nose of the catch is held normally out so as to engage the lever *c* by means of an arm *g* secured to the catch. The arm *g* extends transversely across the front of the supports *f, f'* and up into a position where it can be easily reached by a person upon the seat *F*. The movement of the arm *g* of the catch is limited by means of a keeper *I* upon the front support *f*. An upward movement of the arm *g* withdraws the catch *G* from the path of the lever *c*.

The operation is as follows:—Supposing that the scraper *B* is in its lowered position and it is desired to allow the scraped ice, snow, &c., which have accumulated between the scraper and the cross board *a*² to escape from the machine, the person upon the seat would grasp the lever *c* and swing it forwardly past the gravity locking catch *G* which would immediately drop back into position to engage the lever and lock it in its forward position. This forward movement of the lever *c* would rotate the chain wheels *D, D'*, wind the raising chains *E, E'* thereon and simultaneously unwind the lowering chains *E*², *E*³, causing the scraper to be slid backwardly and upwardly along the guides *a*³, *a*⁴. This raising of the scraper allows the scraped material to pass under the scraper and escape. After the scraped material has escaped and the operator wishes to lower the scraper into its lowered position again, he grasps the arm *g* and raises it, thereby withdrawing the catch *G* from engagement with the lever *c*. If there is no obstruction upon the guides *a*³, *a*⁴, the weight of the scraper will cause it to descend causing the chain wheels to rotate in a reversedirection, the chains *E, E'* to unwind and the chains *E*², *E*³ to wind and the lever *c* to resume its normal upward position. If the scraper will not descend by its own weight, the operator may positively cause it to descend by forcing the lever *c* rearwardly. The chain wheels *D, D'* and the chains thereon wound in opposite directions tend to hold the scraper

firmly upon the guides *a*³, *a*⁴, thereby doing away with grooved guides which are liable to get clogged and frozen up so as to prevent the sliding of the scraper.

It will be seen that the parts of my machine, as above described, are very simple and are not likely to freeze up and clog the working of the machine which has heretofore been common in ice scraping machines.

It is understood that slight changes might be resorted to in the construction and arrangement of the several parts without departing from the spirit and scope of my invention.

What I claim is—

1. In combination, a frame the side pieces having inclined guides thereon, a scraper sliding upon said guides, a rotating bar mounted in said frame, chain wheels locked to rotate with the bar, and serving to hold the scraper seated on the guides chains connecting the chain wheels to the scraper and a lever secured to the rotating bar for sliding the scraper by means of the wheels and chains, substantially as set forth.

2. In combination, a frame, a scraper sliding within the frame, a rotating bar mounted in the frame and having chain wheels thereon, in position to hold the scraper seated chains for connecting the wheels to the scraper, a lever for raising the scraper and a catch for locking the lever and thereby the scraper when the scraper is in its raised position, substantially as set forth.

3. In combination, a frame, inclined guides secured to the frame, a scraper sliding upon said guides, chain wheels mounted in the frame, chains connecting the wheels and scraper, a seat upon suitable standards secured to the frame, a lever for operating the scraper, a gravity catch pivoted upon one of the seat standards in position to engage the scraper operating lever when it is swung into position to raise the scraper, and an arm upon the catch for withdrawing the catch from engagement with the lever when it is desired to lower the scraper, substantially as set forth.

ARCHIBALD S. WASHBURN.

Witnesses:

WILLIAM B. PLATNER,
CLAUDIUS R. HOVER.