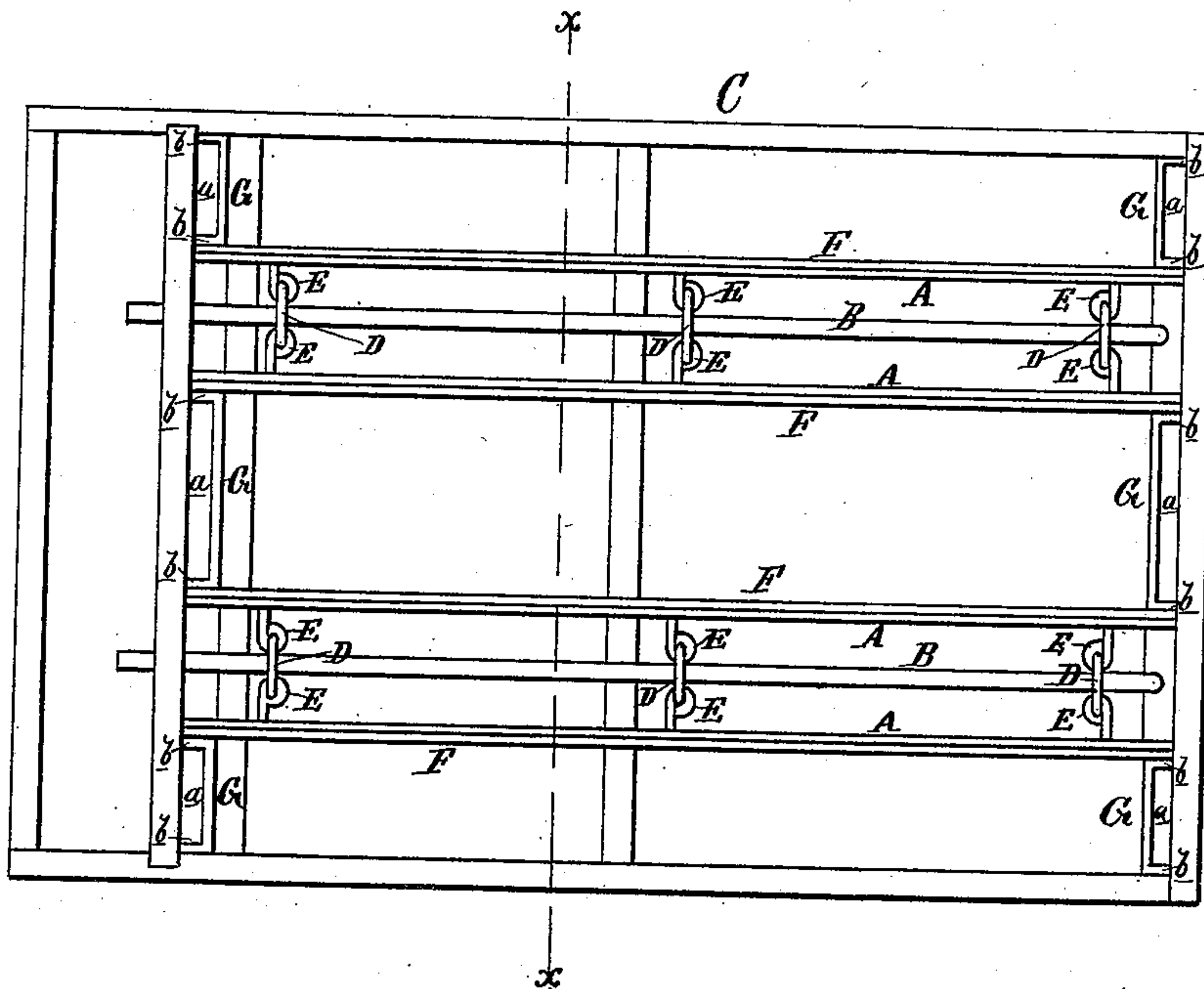
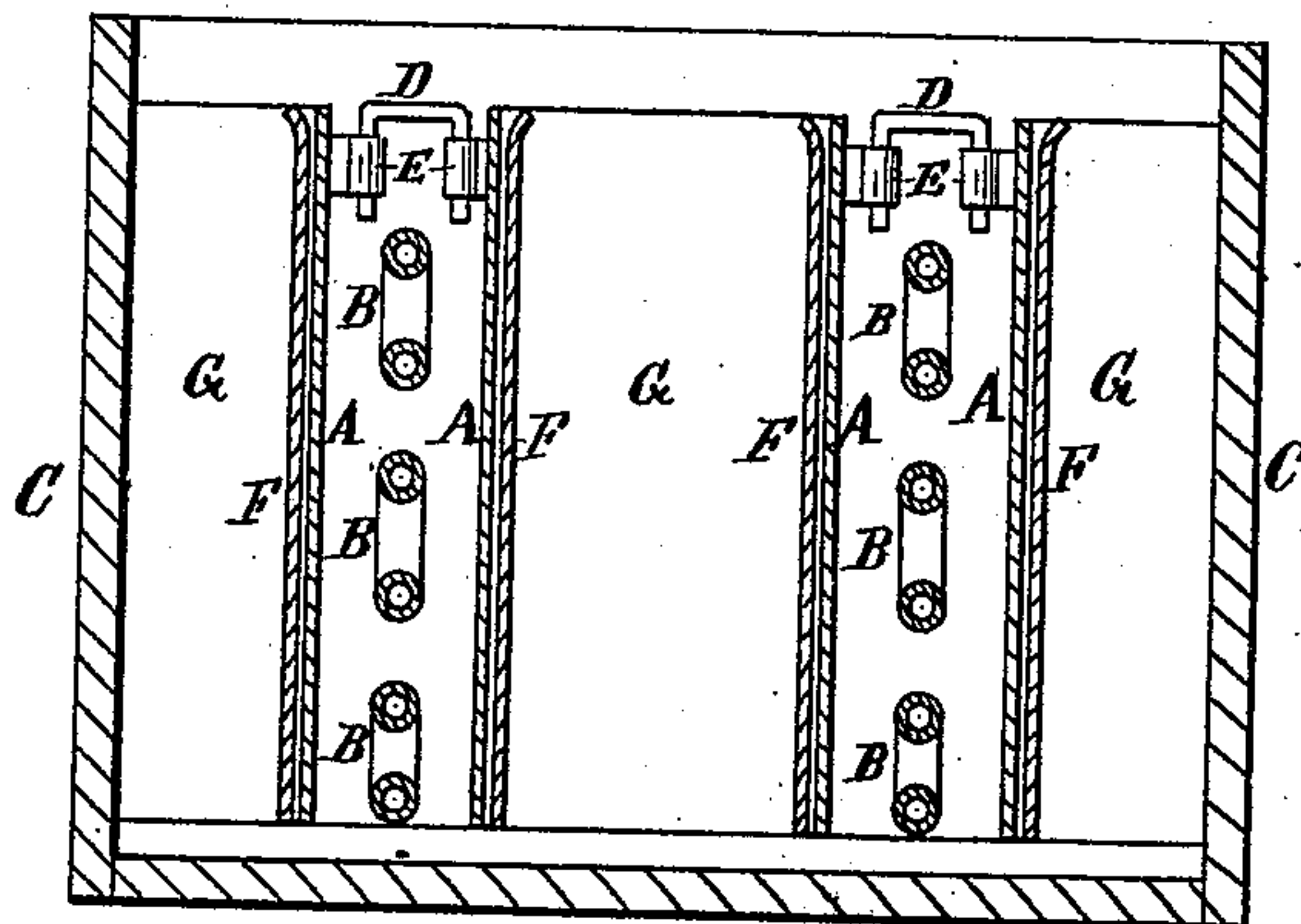


A. J. ZILKER.  
Apparatus for the Manufacture of Ice.  
No. 230,102. Patented July 13, 1880.

*Fig. 1.*



*Fig. 2.*



WITNESSES:

*Henry N. Miller*  
*C. Sedgwick*

INVENTOR:

*A. J. Zilker*

BY

*Wm. H. Co.*

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

ANDREW J. ZILKER, OF AUSTIN, TEXAS.

## APPARATUS FOR THE MANUFACTURE OF ICE.

SPECIFICATION forming part of Letters Patent No. 230,102, dated July 13, 1880.

Application filed November 13, 1879.

*To all whom it may concern:*

Be it known that I, ANDREW J. ZILKER, of Austin, in the county of Travis and State of Texas, have invented a new and Improved Apparatus for the Manufacture of Ice, of which the following is a specification.

Figure 1 is a plan of the device. Fig. 2 is a sectional elevation on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of the invention is to provide means by which artificial ice may be detached in unbroken blocks, as hereinafter described.

In operating with the apparatus it has been found that it is difficult to detach the ice from the stationary metal sheets without breaking the ice and thereby diminishing its commercial value.

In the drawings, A A represent metallic sheets, set on either side of the coils of pipe B in the tank C, that contains only fresh water, the said sheets A A being held in position by the yokes D D, that engage in the ears E E, or by any other convenient device, and these parts, hereinbefore described, are like those shown and described in my application for a patent allowed September 8, 1879.

In my present improvement the metallic sheets F F are set outside of the sheets A A, and in contact with them, and are held in place by the bent end sheets, G G, at their ends, which sheets G G, with edges bent so as to form flanges *b*, also serve to prevent the ice

from forming against the ends of the tank C and form spaces *a* for the admission of steam. 35

When the ice is formed between the sheets F F by the circulation of ammonia gas or other agent passing through the coils or pipes B, steam is introduced into the spaces between the sheets G G and the ends of the tank C, 40 whereby the sheets G G may be loosened from the ice and removed, and the sheets F F can then easily be withdrawn from the tank C with the blocks of ice adhering to them, and on being exposed to the air the sheets F F 45 soon loosen from the ice, and can be returned, together with the sheets G G, to the tank C.

Should the sheets F and A freeze together in the operation of ice-making they may be readily separated from each other by wedges. 50

It will be seen that by this simple device of double sheets or removable sheets it becomes a simple matter to obtain large and unbroken blocks of ice from tanks in which ice is artificially made. 55

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

The removable metallic sheets F G, in combination with the stationary sheets A, substantially as and for the purpose described. 60

ANDREW J. ZILKER.

Witnesses:

J. S. CROZIER,  
W. F. WRIGHT.