

(No Model.)

G. A. BIRCH.  
CUTTER FOR CORRUGATING ICE FOR STORING.

No. 436,492.

Patented Sept. 16, 1890.

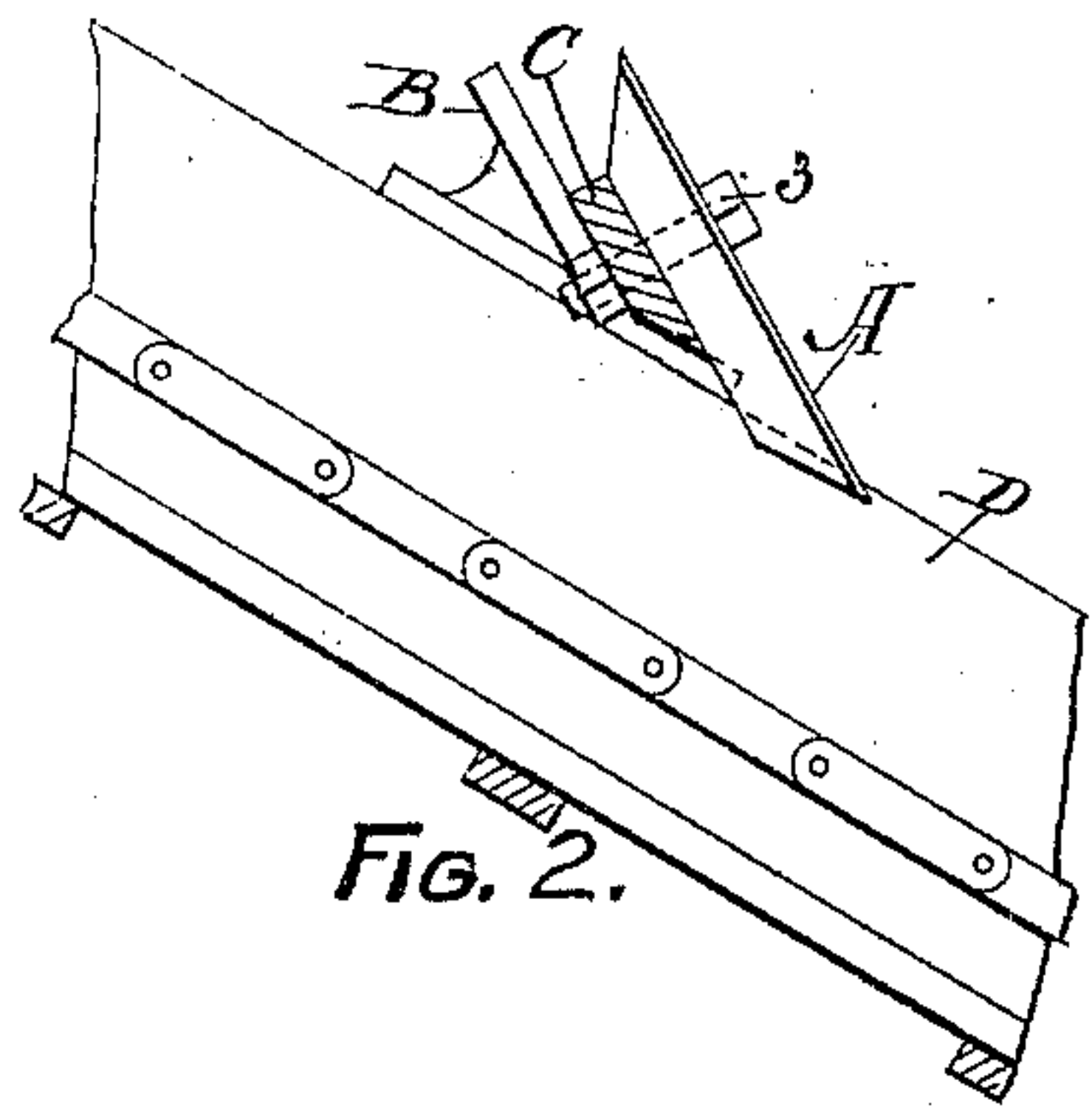


FIG. 2.

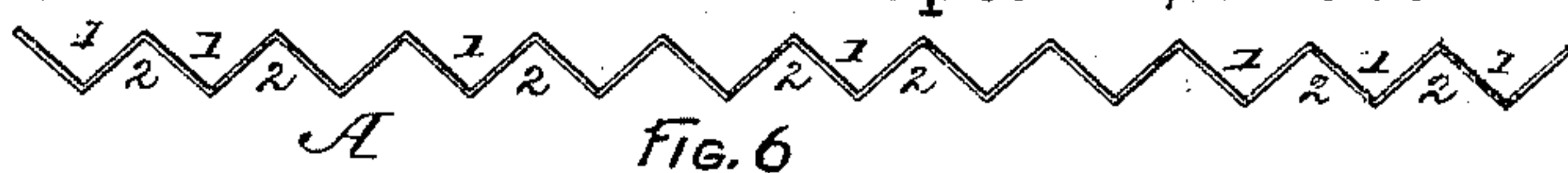


FIG. 6.



FIG. 7.

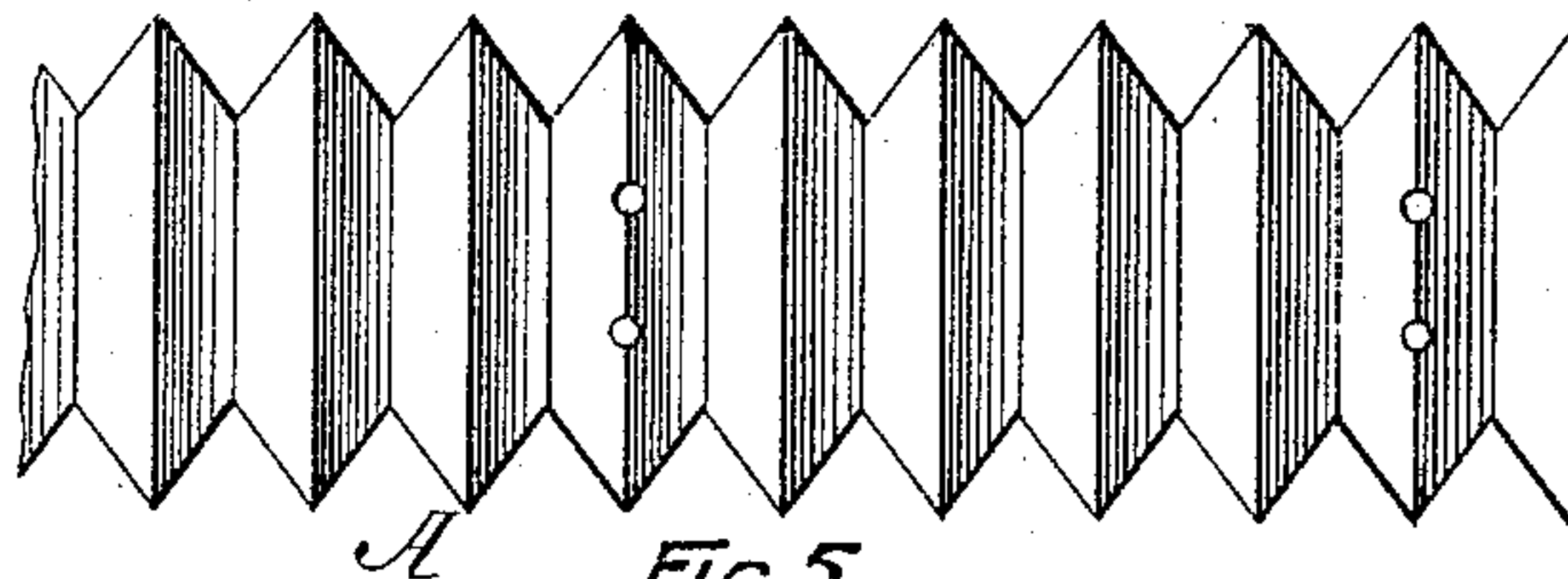


FIG. 5.

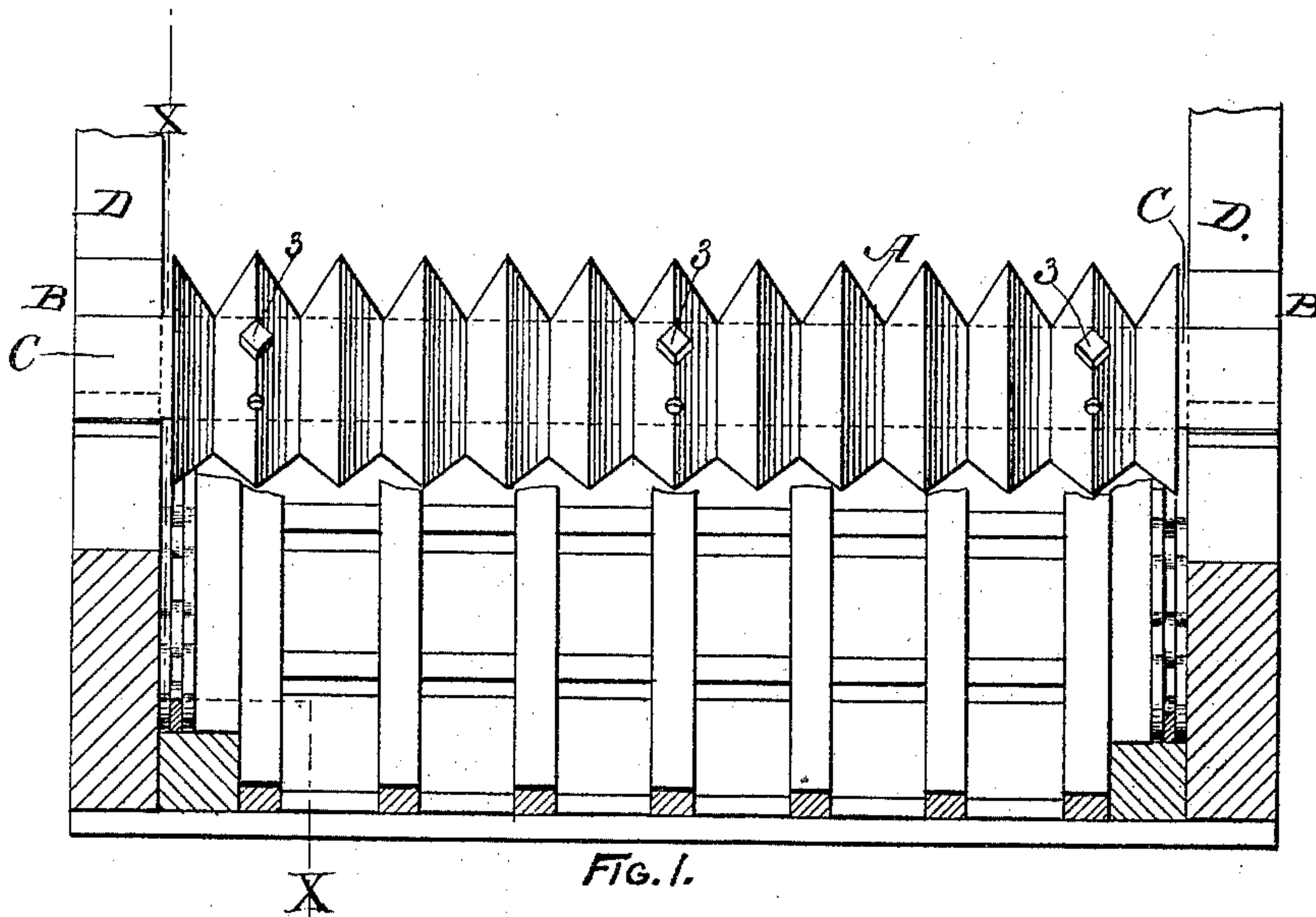


FIG. 1.

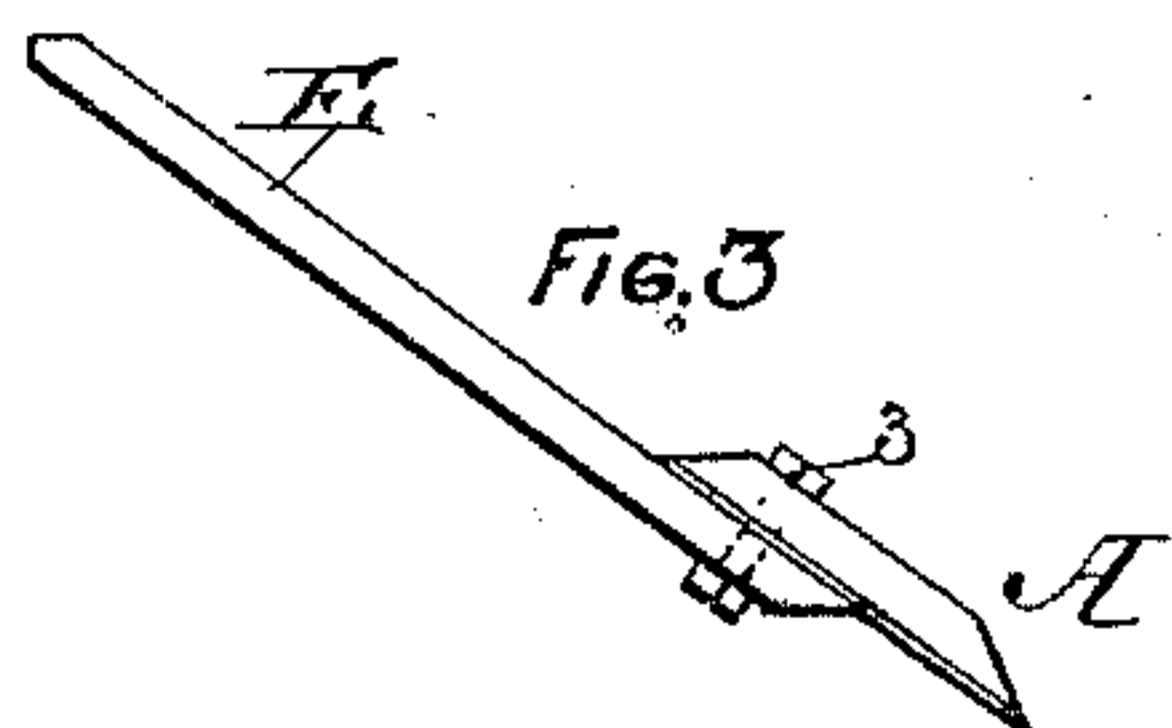


FIG. 3.

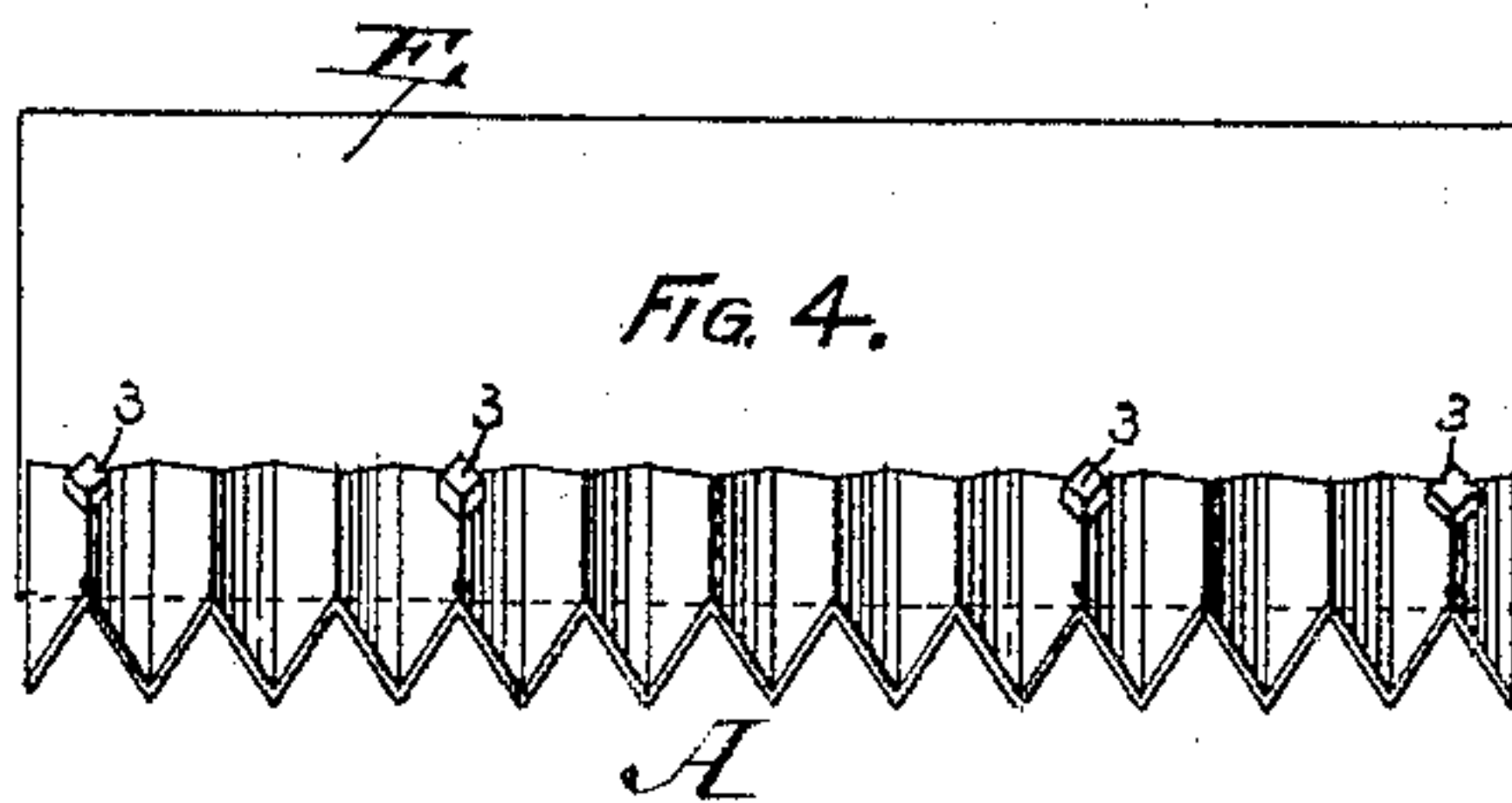


FIG. 4.

Witnesses:

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# UNITED STATES PATENT OFFICE.

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## CUTTER FOR CORRUGATING ICE FOR STORING.

SPECIFICATION forming part of Letters Patent No. 436,492, dated September 16, 1890.

Application filed November 22, 1889. Serial No. 331,194. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE A. BIRCH, of East Greenbush, in the county of Rensselaer and State of New York, have invented new and useful Improvements in Cutters for Corrugating the Surface of Ice for Storing, of which the following is a specification.

My invention relates to improvements in cutters for corrugating ice, either before or after the same has been separated into cakes suitable for storing; and the object of my invention is to provide a simple and effective form of such cutters, which can be used on the face-board of a snow-scraper to corrugate the surface of the ice in an ice-field before it is removed from the water wherein it was formed, or for use on the cutter-head of an ice-planer on an elevator, for the purpose of corrugating the surface of the cakes of ice while they are being moved upwardly on the inclined ways of the elevator for the purpose of storing. This purpose I attain by the means illustrated in the accompanying drawings, which are herein referred to and form part of this specification, and in which—

Figure 1 is a front elevation of a cutter-head provided with my cutters and attached to the ways of an ice-elevator. Fig. 2 is a vertical section of the same at the line X X. Fig. 3 is a side elevation of a face-board for a snow-scraper provided with my cutters. Fig. 4 is a front elevation of the same, the last two named figures being drawn on a reduced scale. Fig. 5 is a plan view of part of the cutter shown in Figs. 1 and 2. Fig. 6 is an edge view of the cutter shown in Fig. 1 detached from the cutter-head, and Fig. 7 is an edge view of a modified form of said cutter.

As represented in the drawings, A designates my cutter or corrugator, which can either be cast of steel in the required form, or it can be made of sheet metal bent into the corrugated form shown in the drawings or in a form that is equivalent thereto, whereby the alternate angles 1 and 2, as shown in Fig. 6, are formed. Said cutter is then beveled at one or both edges to produce a cutting-edge thereon. Preferably the beveling is made at both edges, so that the cutter can be reversed when it has become dull on one of its edges. When said cutter is to be used for corrugating cakes of ice on an ice-elevator, it should be fixed upon the cutter-head-with one of its beveled edges placed downward, so that its angle will be

nearly parallel to the inclination of the string-pieces or ways of said elevator. By this means the sharp points of the cutter will be first brought into contact with a cake of ice that is being moved upwardly on said elevator, and the cutting-edge of the cutter will plane out grooves in the upper surface of the cake of ice, so as to leave the latter reduced to a uniform thickness, with its upper surface corrugated in manner corresponding to the form of the cutting-edge of said cutter. When this cutter is used on the face-board of a snow-scraper for corrugating the ice before it is removed from the water wherein it has been formed, it is secured thereto in such position that a beveled edge will form nearly a right angle to the surface of the ice, the position of said cutter being shown in Fig. 3; but, when preferred, said cutter can be used with its opposite face to the face-board.

B is a cutter-head having a cross-bar C, to which the cutter A is secured by bolts 3 or other suitable means. The face of said cross-bar forms an acute angle to the inclination of the string-pieces D of the ice-elevator, so as to bring the pointed portion of the cutting-edge of said cutter in advance of the other part of said cutting-edge; but it should be understood that said cutter-head and the ice-elevator do not form any part of my invention, and either of the said two parts may be changed or made of a different form when preferred.

E is the face-board of an ordinary snow-scraper, which forms no part of this present invention, but is shown for the purpose of illustrating the manner of applying my cutter to this class of tools.

The form of the corrugations produced by my cutters will conform to the lower edge of the cutter, and will be substantially the same as the angular indentations in said lower edge.

What I claim as my invention is—

A cutter for corrugating ice, made of a plate or sheet of metal with corresponding corrugations formed in its opposite faces, the edge of said cutter being beveled backward to form a cutting-edge thereon, as and for the purpose herein specified.

GEORGE A. BIRCH.

Witnesses:

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