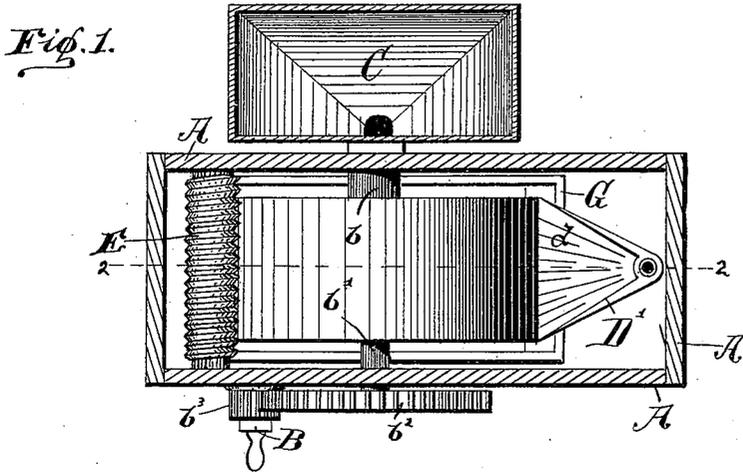


(No Model.)

L. D. RAILSBACK.  
MACHINE FOR MAKING ICE.

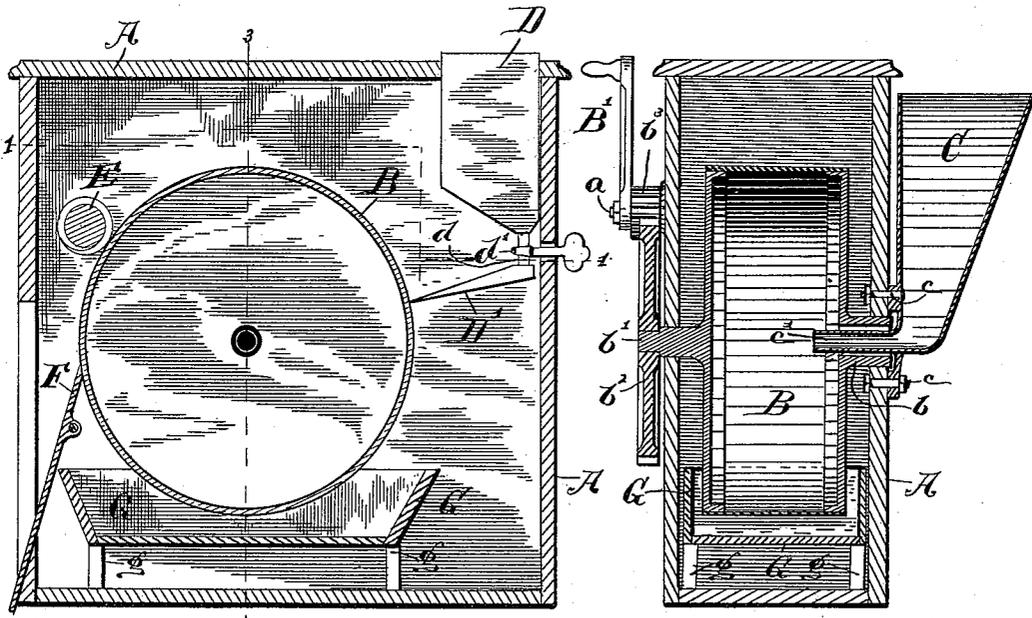
No. 402,968.

Patented May 7, 1889.

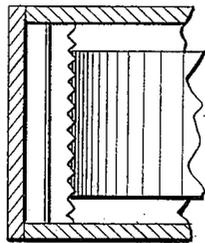


*Fig. 2.*

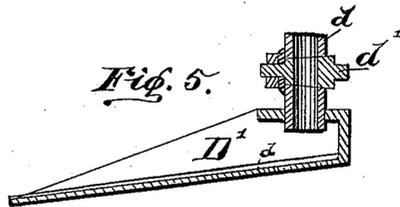
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



WITNESSES.

*C. W. H. Brown,*  
*C. D. Jenney*

INVENTOR.  
*Lafayette D. Railsback,*  
per *W. D. Bradford,*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

LAFAYETTE D. RAILSBACK, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF THREE-FOURTHS TO AUGUSTUS M. DE SOUCHET, OF SAME PLACE, AND W. IRVING WILLIAMSON AND GEORGE W. MITCHELL, OF BOWLING GREEN, MISSOURI.

## MACHINE FOR MAKING ICE.

SPECIFICATION forming part of Letters Patent No. 402,968, dated May 7, 1889.

Application filed April 6, 1889. Serial No. 306,175. (No model.)

*To all whom it may concern:*

Be it known that I, LAFAYETTE D. RAILSBACK, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Machines for Making Ice, &c., of which the following is a specification.

An application (No. 49,625, filed April 16, 1889) has been made for Canadian Letters Patent on this invention.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a horizontal sectional view of a machine embodying my invention, looking downwardly from the dotted line 1 1 in Fig. 2; Fig. 2, a longitudinal vertical sectional view looking upwardly from the dotted line 2 2 in Fig. 1; Fig. 3, a transverse sectional view looking toward the left from the dotted line 3 3 in Fig. 2; Fig. 4, a detail view illustrating an alternative construction of the device for dividing the film of ice on the freezing-cylinder, and Fig. 5 a detail sectional view showing more plainly the construction where the liquid-tank and spreading-apron come together.

In said drawings the portions marked A represent the box or frame-work of the machine; B, the freezing-cylinder; C, the hopper containing the supply of the refrigerant; D, the tank containing the supply of liquid to be frozen; E, a corrugated roller for dividing the film of ice on the freezing-cylinder; F, the scraping-knife, and G a drip-pan.

The frame-work A may be of any desired construction; but I prefer to make it in the form of an ordinary box-like casing, as shown. In its sides are bearings for the trunnions of the refrigerating-cylinder, and when gearing is used (which is preferable) it carries a small stud-shaft, *a*, for the pinion at the base of the crank. It is also provided with rests *g* for the drip-pan G.

The freezing-cylinder B is of an ordinary and well-known construction. One of the trunnions, *b*, is hollow to admit the tube connected to the lower end of the hopper C, as shown most plainly in Fig. 3. Upon its other trunnion, *b'*, the crank B', by which it is

turned, may be mounted directly; but I prefer to place a gear-wheel, *b<sup>2</sup>*, upon it, with which a small pinion, *b<sup>3</sup>*, upon the hub of the crank will engage.

The hopper C is secured to the side of the casing B in any suitable manner. It is shown as provided with lugs through which bolts *c* extend. A pipe or nozzle, *c'*, extends from the lower end of this hopper through the hollow trunnion to the inside of the freezing-cylinder. In use this hopper is filled with the refrigerant agent, which may be either a mixture of ice and salt, or such other refrigerant as may be selected, from which the supply in the cylinder may be replenished. This attachment is especially useful where the machine is to be kept in use for a considerable period, as it obviates the necessity of opening the machine or tipping it upon one side to introduce the refrigerant, during which operation, of course, the use of the machine would have to be suspended.

The hopper or tank D contains the supply of liquid to be frozen. It terminates in a small pipe or tube, *d*, in which is a valve, *d'*, which is arranged just above and adapted to discharge onto an apron, D'. This apron D' is flared out as it approaches the cylinder until its width is substantially equal to that of the face of said cylinder, and its edge is brought into close proximity to the cylinder-face at a point a little above the center of said cylinder. Said apron is preferably provided with fine corrugations *d*, diverging from the point where the liquid is discharged thereon toward its edge, as indicated by the fine radiating lines in Fig. 1, and these corrugations aid in the even distribution of the liquid.

It is necessary in producing clear ice by the use of this machine that some means should be provided to break the surface of the film of ice upon the freezing-cylinder before it reaches the scraping-knife, as otherwise said film of ice is likely to adhere too closely to said cylinder to be properly removed by said scraping-knife. I have therefore provided a roller, E, having sharp corrugations, (preferably extending spirally around said roller,) and which rests upon the surface of said cylinder. The sharp edges will penetrate the film of ice, breaking it into small bits, and the

scraping-knife will remove them easily. Instead of this roller, I may use a bar or knife with a serrated edge, as shown in Fig. 4, with substantially the same result.

5 The scraping-knife F is suitably mounted so that its scraping-edge will come in close proximity to the surface of the freezing-cylinder, and the opposite edge extends to outside the machine, so as to discharge the product into whatever receptacle may be there  
10 provided.

The drip-pan G is an ordinary trough or pan arranged below the freezing-cylinder to catch whatever of the liquid or ice may drop  
15 therefrom.

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

20 1. The combination of the freezing-cylinder; the feeding-apron at one side of the cyl-

inder, and the breaking roll or knife and scraper at the other side, whereby material fed upon one side of the cylinder is frozen and delivered at the other side.

2. The combination, in a machine for making ice, ice-cream, &c., of the revolving freezing-cylinder, a tank or supply-vessel to contain the liquid to be frozen, an apron-like conduit leading from said supply-vessel to said cylinder, a crushing roll or knife for  
30 dividing the film of ice as it is frozen, and a scraper for removing said ice.

In witness whereof I have hereunto set my hand and seal at Indianapolis, Indiana, this 3d day of April, A. D. 1889.

LAFAYETTE D. RAILSBACK. [r. s]

Witnesses:

C. BRADFORD,  
W. R. BARTON.