

No. 658,625.

Patented Sept. 25, 1900.

J. EICHER & H. COOPER.
CREAM RIPENING APPARATUS.

(Application filed Aug. 16, 1899. Renewed July 19, 1900.)

(No Model.)

Fig. 1.

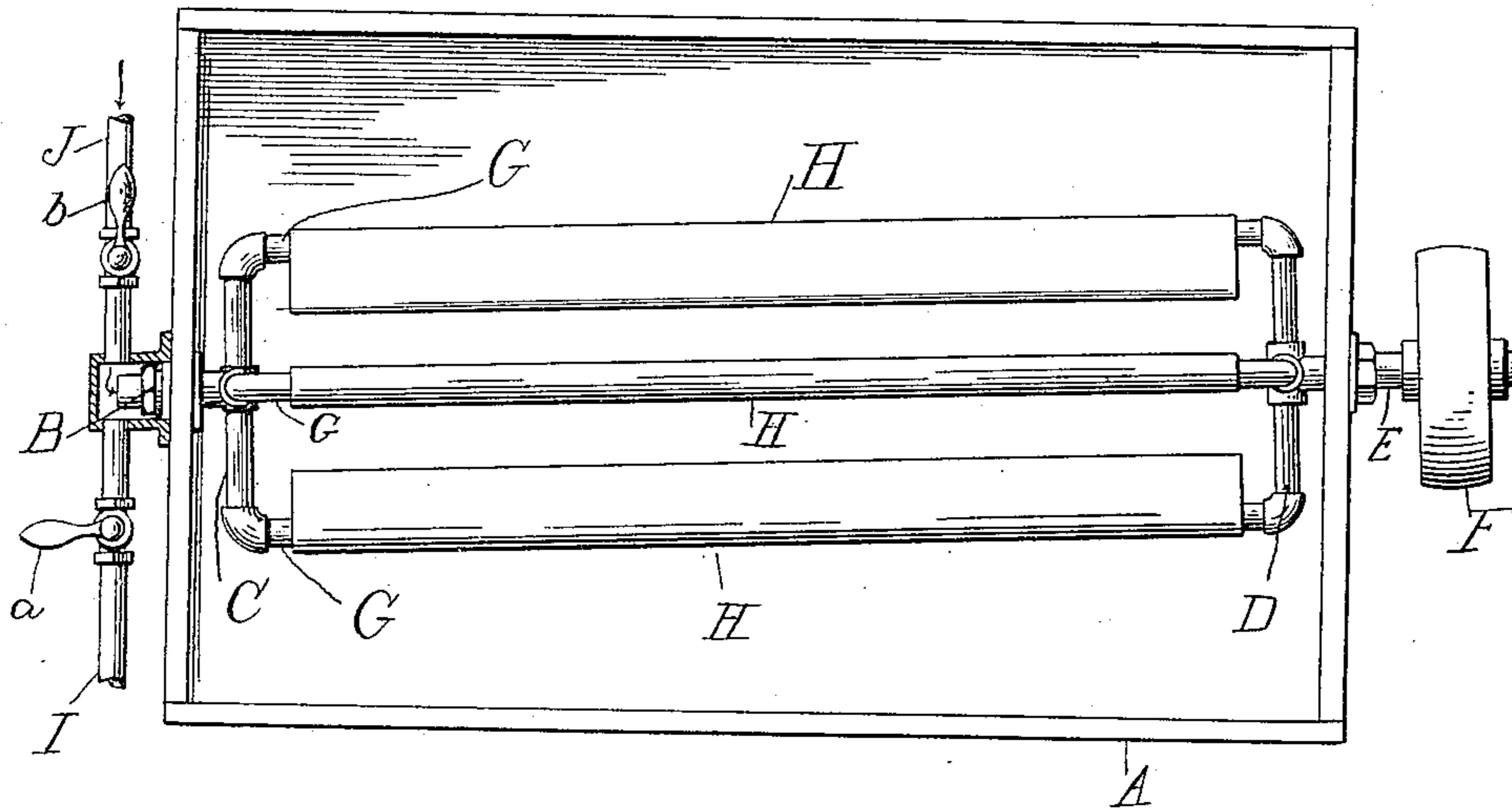
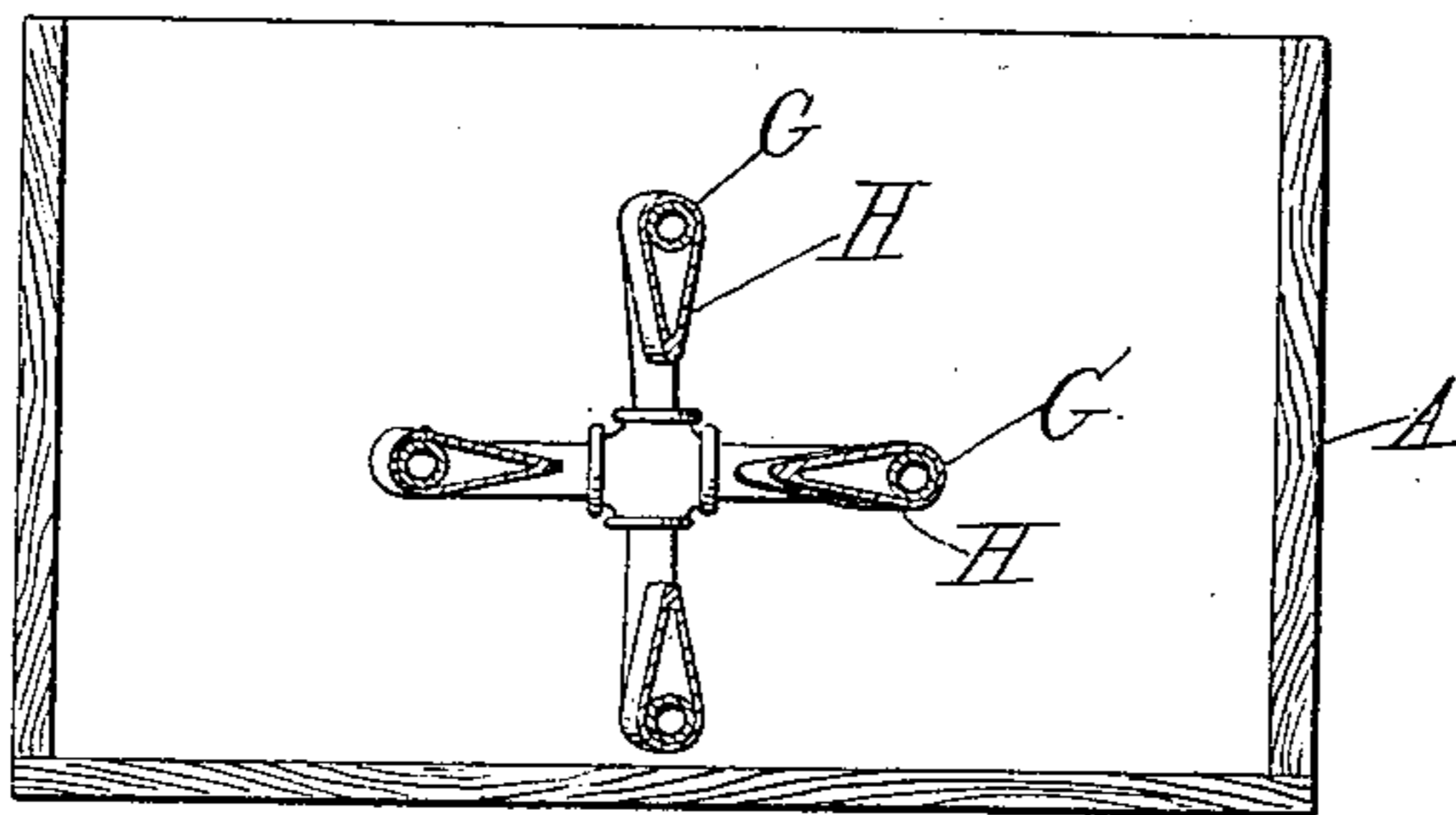


Fig. 2.



WITNESSES

James F. Duhamel
J. E. Cudde

INVENTORS

John Eicher
Harlan Cooper
per Fred Wasker
ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN EICHER AND HARLAN COOPER, OF WINFIELD, IOWA.

CREAM-RIPENING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 658,625, dated September 25, 1900.

Application filed August 16, 1899. Renewed July 19, 1900. Serial No. 24,165. (No model.)

To all whom it may concern:

Be it known that we, JOHN EICHER and HARLAN COOPER, citizens of the United States, residing at Winfield, in the county of Henry and State of Iowa, have invented certain new and useful Improvements in Cream Ripeners and Agitators, of which the following is a specification.

Our invention relates to a cream-ripening apparatus wherein cream is prepared and made ready for the churn; and it consists, essentially, in the construction and combination of parts substantially as will be hereinafter described and claimed.

In the annexed drawings illustrating our invention, Figure 1 is a top plan view of our improved cream-ripening. Fig. 2 is a cross-section of the same.

Like letters of reference denote like parts in both figures.

A denotes a plain rectangular box, which contains the revolving reel that constitutes a chief feature or element of our improvement. This has preferably four arms; but two arms might be employed or any desired number. G G denote the four longitudinal arms of the said reel. They are hollow and are connected at one end to the couplings C C, constituting one head of the reel, and attached to a hollow shaft B, that extends through one end of tank A and forms a journal at this point on which the reel revolves, and said hollow arms G being connected at the other end to the couplings D, constituting the other head of the reel, and attached to a hollow shaft E, that extends through the other end of tank A and forms the other journal on which the said reel revolves.

H H designate flanges or vanes that are attached to the arms G G of the reel.

It is to be particularly noted that the heads of the reel are oblique with respect to the axis of the churn-body—that is to say, they are offset from the axis of tank A, as shown. Said heads are so adjusted and the vanes are so arranged that said vanes are to a small extent oblique, after the manner of the vanes of a windmill. At the front end of the tank on the hollow arm E is a pulley F, to which power is applied for the purpose of rotating the reel. At the rear end of the tank are two

pipes I and J. The pipe I is a steam-pipe, and it is fitted with a cock *a* and is connected with the rear journal B of the reel. Pipe J is a water-pipe, and it is fitted with a cock *b* and, like pipe I, is connected with the rear journal B of the reel. Thus it will be seen that by means of pipes I and J either steam or cold water may be delivered to the pipes composing the revolving reel.

When the tank A is filled with cream, if the cream needs cooling the valve *b* will be opened and cold water from a well or other receptacle will be allowed to flow from the pipe J into the hollow journal B. This water courses through the tubular arms G and passes to the other end of the tank, and is allowed to pass off and to escape through the journal E as fast as or as slow as desired. When the water starts through the arms of the reel, the machinery will be set in motion and the reel caused to revolve either to the right or to the left. This reel revolves very slowly, for otherwise it would churn the cream when it is only desired to ripen it. If the reel turns from the left to the right, the angle of the vanes will drive the central cream to the rear end of the tank, while the cream at the sides of the tank at the front end will crowd in to take the place of the cream that the reel is driving ahead of it, and thus we will have the cream forming a double circuit, passing down one side and up the other. If the reel revolves in the opposite direction, the course of the cream will obviously be reversed. Cold water continually passing through the reel keeps it cool, and by the circuit of the cream all comes in contact with the cold reel, is all cooled alike, and is properly oxygenated and ripened. If the weather is cold and the cream needs warming instead of cooling, the water-valve *b* may be closed and the steam-valve *a* opened, whereby the current of steam or hot water will be allowed to pass through the reel, and in consequence of the revolution of the latter the cream will be warmed to the desired temperature and kept thereat by means of a valve (not shown) attached at the end of the escape, so as not to allow the condensed steam in the reel to pass through so rapidly as to scald or overheat the cream.

What we claim is—

In a cream-ripening apparatus, the combination with the tank, of a revolving reel therein having hollow arms and having heads
5 which are oblique with respect to the axis of the churn-body, flanges or vanes attached to the arms of the reel, and valve-provided pipes connected to said reel for the purposes of supplying either hot or cold water or steam, as
10 may be required for heating and cooling the

contents of the tank, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN EICHER.
HARLAN COOPER.

Witnesses:

A. S. FOLGER,
B. B. LINDLY.