A STEAM ICE CREAM MANUFACTORY.

The ice cream now in general use is manufactured from a combination of milk, pure cream and gelatine, flavored with different extracts, such as vanilla, lemon, strawberry, etc., the ingredients being first mixed up together and placed in circular metal vessels or runners which revolve around inside of circular wooden tubs, the runners being surrounded by a quantity of cracked ice and rock salt. Each runner is furnished with a beater having a number of blades which revolve around on the inside, beating up the material, the ice and rock salt causing it to thicken and form itself into ice cream. Some manufacturers use eggs, corn starch, etc., and boil the ingredients before freezing. The first process is the mixing together of the ingredients. About 10 quarts of pure cream, 10 quarts of milk, and about 8 pounds of sugar (granulated) are first mixed together. If the ice cream is to be flavored with strawberry, about 6 to 8 drops of pure red coloring and ¼ pint of essence of strawberry is added. A quantity of gelatine dissolved in about a quart of warm water is then added to this, bringing the solution up to about 24 quarts in bulk. It is then run through a strainer or fine sieve into the runner. The runners are made of copper, the inside of which is coated with tin, which, after about four weeks' constant running, has to be renewed, the coating of tin being worn off by the working of the beater. The runners are about 23 inches in height and about one foot in diameter, and hold about 40 quarts. The wooden tubs in which they revolve are 2 feet 4 inches in height and are about 20 inches in diameter on the inside, leaving a space of about 4 inches for the ice around the runner. Attached to the top of the cover of the runner and perpendicular shaft of the beater, which revolves in a socket at the top of the grinding machine, are two gearing wheels, which are geared to another attached to the shafting of the machine. When the machine is in motion the beater, containing ten 1½ inch iron blades, and the runner revolve around in different directions, making about 55 revolutions per minute. As soon as the machine is set in motion, a small quantity of ice and rock salt is added, which is renewed every few moments until the tub is filled, taking in all about 25 pounds of ice. The beating operation takes about 12 minutes, the salt and ice gradually freezing the 24 quarts solution, while the gelatine swells or raises the material up to 40 quarts. The grinding operation is completed when the ice cream shows or adheres to the glass windows in the cover of the runner. The wooden tub with the runner of cream is then rolled one side and another is put in its place to pass through the same operation. The ice cream is then taken from the runners and put into cans ranging from 1 to 10 gallons each, and packed into ice and rock salt for delivery, which is ready in about two or three hours' time.

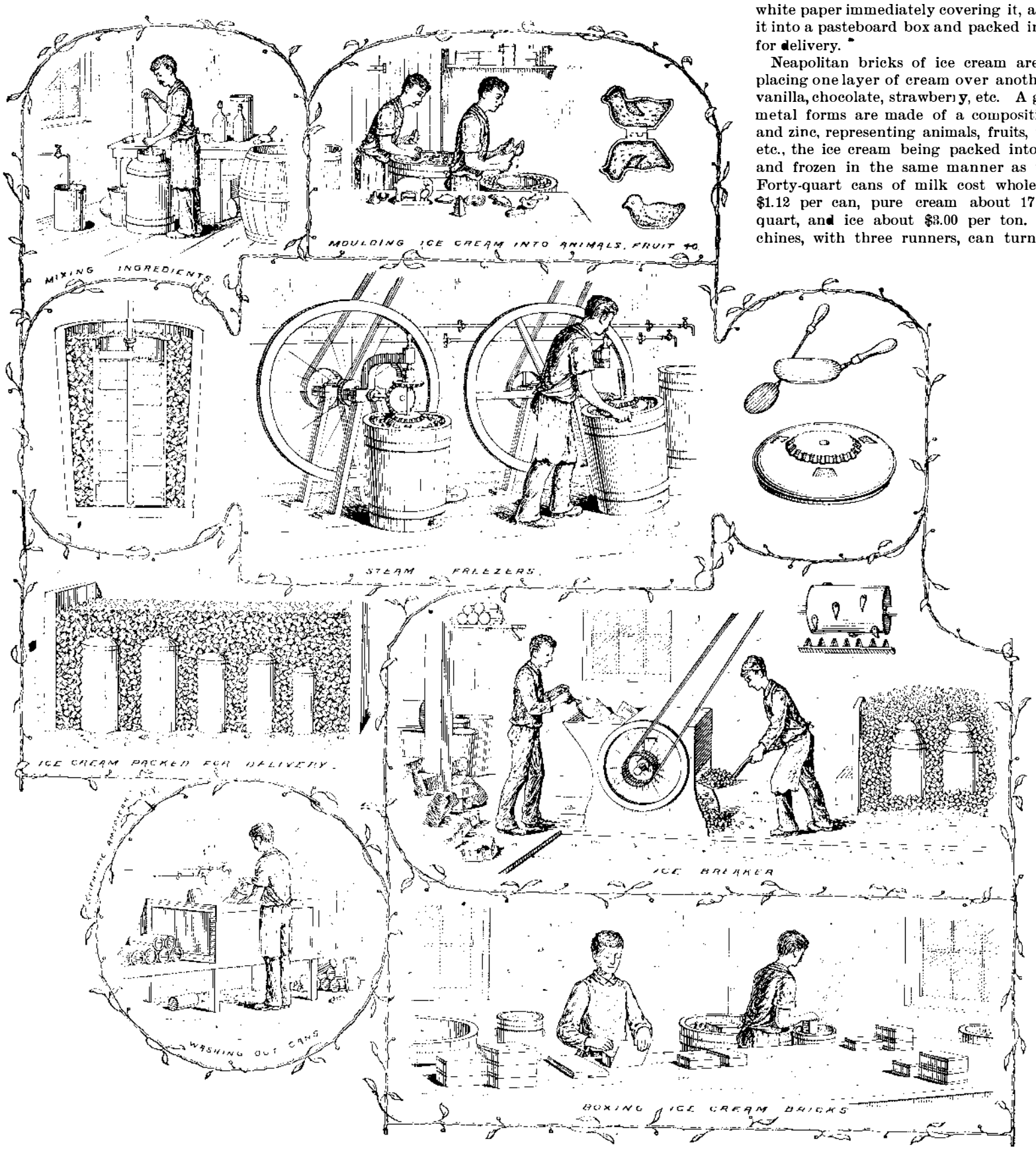
Chocolate ice cream is made by dissolving about 1¼ pounds of chocolate cakes in about one quart of hot water, which is added to the milk and cream in the same manner.

For vanilla flavoring about ½ pint of the extract is used for a can containing 40 quarts of ice cream.

The machine for breaking up ice consists of a revolving cylinder 14 inches in diameter and 20 inches in length, riveted to which are 9 conical shaped wrought iron teeth about 5 inches in length, which, when the machine is in motion, pass between a number of other teeth connected to the frame-work of the machine. The cakes of ice, which weigh about 50 pounds each, are first broken into two pieces and placed in the machine. The teeth of the revolving cylinder, which makes about 120 revolutions per minute, crash through the ice, breaking it up into small pieces at the rate of a ton in every twenty minutes.

Ice cream bricks are made by packing the cream into metal forms. These forms have a top and bottom cover. The ice cream is first put into these brick-shaped forms and a strip of paper placed between the cream and each cover, which holds them firmly in place, and then they are packed away in salt and ice and frozen for about three hours. They are then taken out and the forms dipped into a pail of warm water, which loosens the cream from the sides. The top and bottom covers, after being wiped with a cloth, are then taken off, the attendant allowing the loosened brick of cream to slip out of the form on to a strip of white paper immediately covering it, and placing it into a pasteboard box and packed in ice again for delivery.

Neapolitan bricks of ice cream are made by placing one layer of cream over another, such as vanilla, chocolate, strawberry, etc. A great many metal forms are made of a composition of lead and zinc, representing animals, fruits, vegetables, etc., the ice cream being packed into the forms and frozen in the same manner as the bricks. Forty-quart cans of milk cost wholesale about $1.12 per can, pure cream about 17 cents per quart, and ice about $3.00 per ton. Two machines, with three runners, can turn out from 1,500 to 2,000 quarts of ice cream per day. The sketches were taken from the plant of George Schmid, Jersey City, N. J.



A STEAM ICE CREAM MANUFACTORY.

Improvement in Beer.

This relates to the application of a preparation of the fruit of the carob tree (*Ceratonia siliqua*) in brewing, with the object of imparting a pleasant aroma and giving greater body to beer; also to mask the vapid, bitter flavor and render the beer better fitted for keeping and more wholesome. The fruits are treated with warm water, and are washed and dried at about 30° C. until they present a brownish color, and the juice of the fruit when the latter is broken is dark red. The dried fruits while still warm are cut into pieces and may be stored or added directly to the mash in the proportion of about 2·5 kilos to a hectoliter of ordinary beer.—*J. Pikhart, Mahrisch Schoenberg, Moravia.*