E. W. LEGGETT.

Apparatus for Cooling and Spreading Glue.

No. 205.968. Patented July 16, 1878.

Fig. 1.

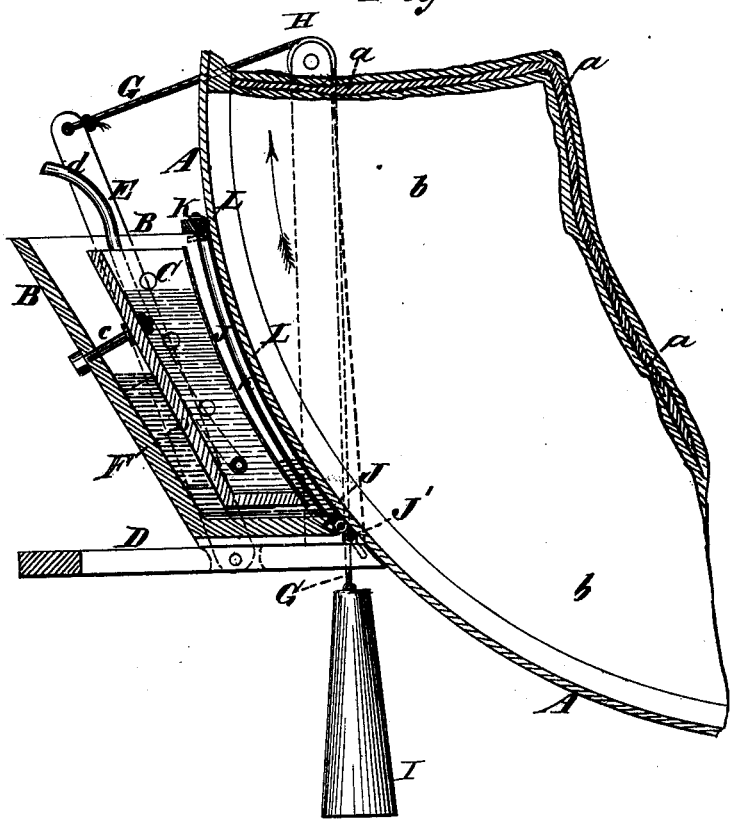
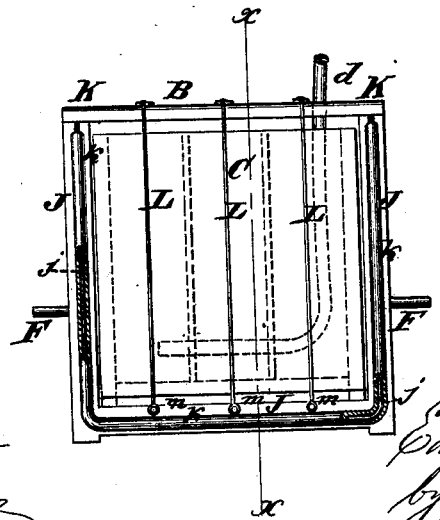


Fig. 2.



Witnesses
John Becker
Fred. Haynes

Inventor
Edward W. Leggett
by his Attorneys
Brown + Allen

UNITED STATES PATENT OFFICE.

EDWARD W. LEGGETT, OF ELIZABETHPORT, NEW JERSEY.

IMPROVEMENT IN APPARATUS FOR COOLING AND SPREADING GLUE.

Specification forming part of Letters Patent No. **205,968**, dated July 16, 1878; application filed October 24, 1877.

To all whom it may concern:

Be it known that I, EDWARD W. LEGGETT, of Elizabethport, in the county of Union and State of New Jersey, have invented an Improvement in Apparatus for Cooling and Spreading Glue; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification.

My invention is an improvement upon an apparatus for cooling and spreading glue for which Letters Patent No. 185,825, dated January 2, 1877, were granted to C. O. Garrison. In the said apparatus, upon which my invention is an improvement, the liquid glue is supplied to the perimeter of a revolving cylinder filled with ice or other refrigerating substance from a supply-trough. The glue adheres to said cooling-cylinder in a thin sheet. Underneath the said cylinder passes an endless belt or apron, upon which the drying-nets for the reception of the glue are placed. As the sheet of glue on the perimeter of the cooling-cylinder passes on the under side of said cylinder, the weight of the glue causes the sheet to peel off from the cooling-cylinder and fall, spread evenly, upon the drying-nets on the aforesaid endless aprons. In use, however, this machine has developed practical defects which it is the principal object of my invention to remove, to wit: The cooling-cylinder necessarily has a large diameter, and the effect of radiation and convection of heat from the heads is to consume a much larger amount of ice or other refrigerating material than is required to cool the glue, and consequently to entail a more frequent supply of ice or other cooling material and a larger expenditure for the same than is desirable. Again, the effect of radiation from and to the perimeter of the cooling-cylinder from and to the glue in the supply-trough is such as to more or less congeal the liquid glue in the supply-trough before the said glue can flow out of the trough. This has caused much inconvenience, and has prevented uniformity in the working of the machine on account of clots formed in the liquid glue. Still another difficulty is experienced in fitting the supply-trough sufficiently close to the cooling-cylinder to prevent the oozing through of the liquid glue and the fouling of the exterior of the apparatus.

My invention supplies means for obviating all these defects, and also supplies means for automatically dividing the sheet of glue, as formed, into strips, in such manner that by subsequently cutting across the same as delivered upon the drying-nets the separation of the glue into pieces suitable for market is thereby effected.

Figure 1 in the drawing is a side view of a portion of the cooling-cylinder of an apparatus for cooling and spreading glue, and a vertical section through the supply-trough made on the line *x x* in Fig. 2. Fig. 2 is a view of the supply-trough, looking toward the side of the same which faces the cooling-cylinder.

A is the cooling-cylinder, which contains ice or other refrigerating material. Said cylinder is preferably made of iron, and, to prevent the loss of ice through the effect of radiation and convection to and from the heads of the same, I cover said heads with a coating, *a*, of felt or other non-conducting material, over which I place a sheathing, *b*, of wood or other suitable material.

I do not limit myself to the precise materials named for covering the heads of the cylinder, as other materials may be employed for covering which will effect the same object.

B represents the supply-trough, which, in use, contains the liquid glue to be cooled and spread into sheets. The sides of said trough which abut against the wheel have a curvature corresponding to the perimeter of the wheel.

To prevent the congelation of the liquid glue in the supply-trough, I place therein a heater, C, which is preferably a vessel containing water heated by steam admitted directly thereto by a pipe, *d*, or by means of steam passing through a pipe not terminating in the water, but imparting heat through its walls. The side of said heater C which faces the cooling-cylinder A is made of metal; but all its sides may be of metal, if preferred. Moreover, I render said heater adjustable to or from the cooling-cylinder A by means of an adjusting screw or bolt, *c*, by which means I am enabled to keep the liquid glue in the trough in the required state of liquidity without materially

interfering with the cooling action of the perimeter of the cooling-cylinder upon the thin stratum of glue lying next said cylinder.

The means I employ for preventing the oozing of the glue through the crevice between the trough B and cylinder A are as follows: To each side of the support D, upon which said trough rests, is pivoted a lever, E. Each of said levers engages one of the pins, projections, or lugs F, Fig. 2, on opposite sides of the trough B. To the upper end of each lever E is attached a cord, G, which passes over a sheave or pulley, H, attached to an upright rising from the support D. To the cord G is attached the weight I. The effect of this arrangement is to hold the trough snugly up against the cooling-cylinder; but as it is impossible to fit the trough to the cylinder so closely and accurately as to prevent some oozing of the glue through the crevice, I supply a packing, J, which consists of an elastic rubber tube, *k*, slipped over a U-shaped stiffener, *j*, preferably wire, which supports and extends said rubber tube *k*, said tube fitting said wire snugly. Said packing is placed in a shallow groove formed in the edges of the trough B which meet the cylinder A.

As a further security against the oozing of the glue at the bottom of the trough, I place across the same a straight strip of packing, J′, similarly made of elastic tubing, having a central stiffener inserted therein.

To divide the sheet of glue as formed into longitudinal strips, I attach to the upper part of the trough B a rail, K, and stretch wires or cords L, Fig. 2, (preferably cords of wire run through rubber tubing,) attached to said rail, from said rail down to eyes *m*, or other attachments in the bottom of the trough, in such manner that the middle parts of said cords draw over the cylinder A as it revolves, and cut the sheet of congealed glue into longitudinal strips.

By these means I effect a large economy in the manufacture of glue and materially improve the finished article, as I produce continuously sheets of uniform thinness, which cannot be done in the old method on account of the clots which form in the trough by the effect of the cold in the central part of the liquid glue.

I claim—

1. The combination, with the supply-trough and cylinder of an apparatus for cooling and spreading glue, of a heater placed between the cooling-cylinder and the supply-trough to prevent the chilling of the glue at a distance from said cylinder, substantially as specified.

2. The combination, with the cooling-cylinder A and supply-trough B, of the cords or wires L, for cutting the cooled sheet of glue into longitudinal strips, substantially as described.

3. The combination, with the supply-trough and cooling-cylinder, of the tubular packing J J′, extended and supported by the internal stiffener *j*, substantially as and for the purpose set forth.

4. The combination, with the cooling-cylinder A and supply-trough B, of the heater C, made adjustable relatively to said cylinder, to regulate the distance of the said heater from the cooling-cylinder, substantially as and for the purpose described.

EDWARD W. LEGGETT.

Witnesses:

FRED. HAYNES,

EDWARD B. SPERRY.