

(No Model.)

K. UPTON.

# METHOD OF MANUFACTURING GLUE.

No. 338,374.

Patented Mar. 23, 1886.

*Fig: 1.*

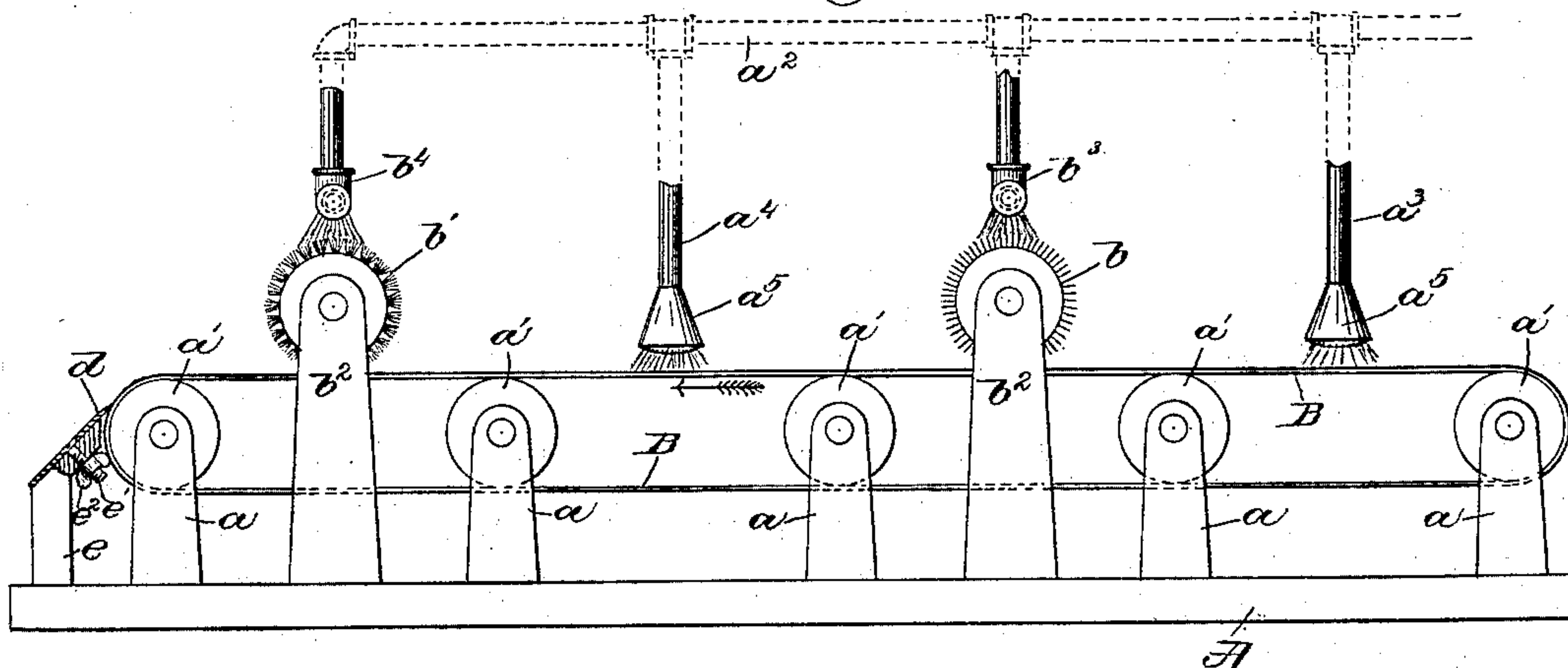
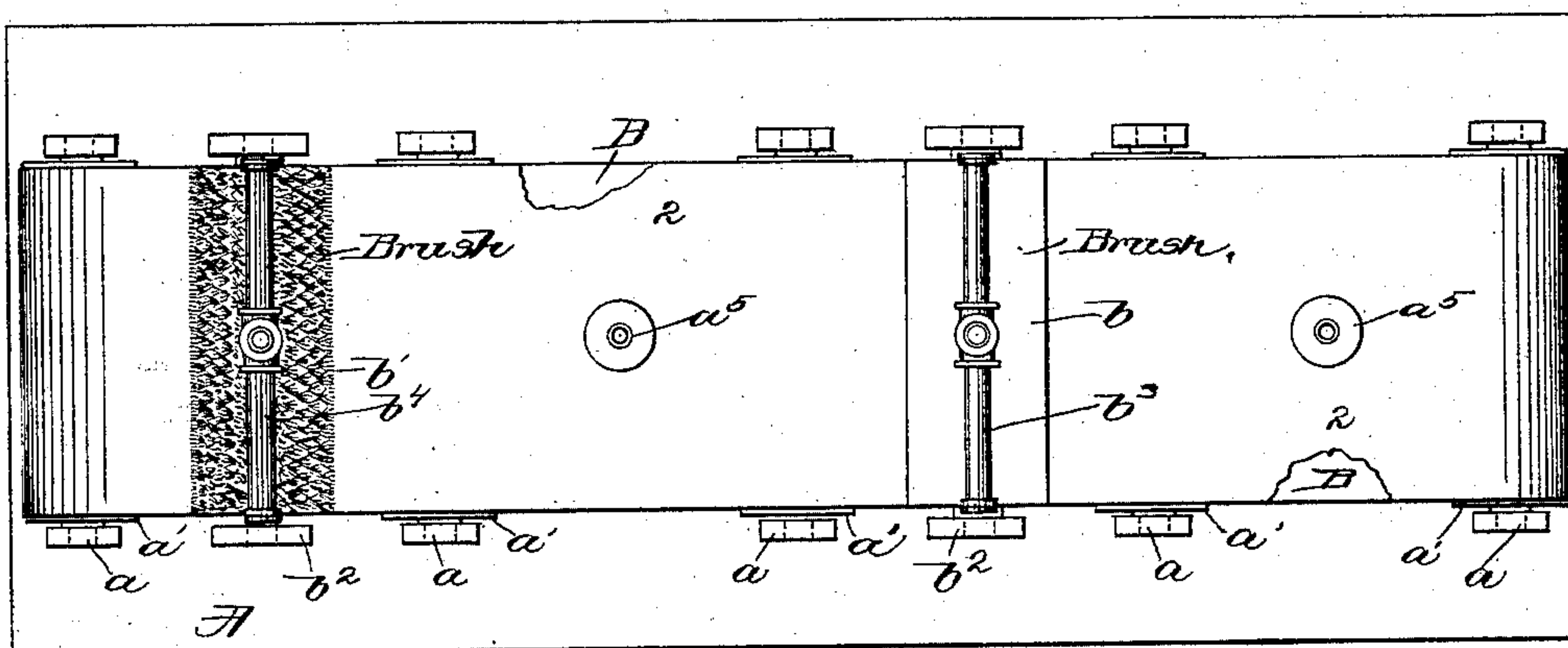


Fig: 2.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## METHOD OF MANUFACTURING GLUE.

SPECIFICATION forming part of Letters Patent No. 338,374, dated March 23, 1886.

Application filed November 23, 1885. Serial No. 183,621. (No model.)

*To all whom it may concern:*

Be it known that I, KING UPTON, of Salem, county of Essex, State of Massachusetts, have invented an Improvement in Method of Manufacturing Glue, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention relates to an improvement in the art or method of manufacturing glue, whereby the same may be rapidly dried.

As heretofore manufactured, the hot liquid glue is run into molds of suitable shape and size, where it is partially cooled, and thereafter the mass of glue is cut into comparatively thin layers, which are placed on slats or tables to dry. By this slow drying process the outside of the layer of glue becomes concreted, thus forming a skin or coating, leaving the middle part in a gelatinous state, and, the air being excluded by the concretion, the surface or outside is much harder than the center of the said layer.

In accordance with my invention commercial glue is formed by the successive applications, upon a suitable receiving-surface, of liquid glue in the form of a spray or as a succession of films or thin layers, the receiving-surface being preferably on an endless belt.

In the apparatus herein shown, and by which to practice my invention, the glue is applied by means of a series of spraying devices or brushes, the said spraying devices and brushes being placed at such a distance apart as to allow one layer to become partially dried before the next layer is applied. A knife or other suitable scraper, preferably placed at one end of the apparatus and touching the endless belt, serves to remove the resultant layer of glue from the said belt, the said layer being preferably dried by heated air directed against it, the receiving-surface being preferably placed in a drying apartment.

Figure 1, in side elevation, represents a sufficient portion of an apparatus to enable my invention to be understood; and Fig. 2, a plan view of Fig. 1, the thin sheet-metal protecting surface applied to the receiving surface or belt being broken out to show the belt under it.

The base A of the frame-work supports a series of uprights,  $a$ , forming bearings for a series of rollers,  $a'$ , over and by means of which is revolved the receiving-surface (herein shown

as an endless belt, B, of india-rubber or other suitable material,) upon which hot liquid glue is applied in a series of successive layers, as will now be described.

In practice the belt may be protected or coated by means of a very thin layer of steel or metal, made flexible, the metal being preferably nickel-plated to obviate rust.

The hot liquid glue, forced through a supply-pipe,  $a^2$ , (shown in dotted lines, Fig. 1,) by means of a suitable pump, (not shown,) is applied to the endless belt B by means of pipes  $a^3$   $a^4$ , connected to the supply-pipe  $a^2$ , each of the pipes  $a^3$   $a^4$  being provided with a sprayer,  $a^5$ , which distributes the glue over that portion of the belt passing beneath it. The liquid glue is also applied to the endless belt by means of brushes  $b$   $b'$ , which are herein shown as supported in standards  $b^2$ ; secured to the base A, the said brushes being herein shown as receiving liquid glue from perforated pipes  $b^3$   $b^4$ , also connected to the supply-pipe  $a^2$ , the brushes being of soft material and applying a thin coat or layer of glue to that layer applied by the preceding sprayer. The layer of glue resultant from the successive layers applied by the successive sprayers and brushes, being quickly dried on account of its thinness, is removed from the belt B by a knife or scraper,  $d$ , (herein shown as secured to an upright,  $e$ , by a countersunk bolt,  $e'$ , provided with a nut,  $e^2$ ,) the said knife or scraper having its edge sufficiently near the belt B to remove the dried layer of glue as the belt is revolved past the said knife. The resultant layer may have heated air directed against it to more quickly dry the same, or the temperature of the room may be maintained sufficiently high to accomplish the same result.

The arrow, Fig. 1, shows the direction of rotation of the belt or receiving-surface. The speed of the receiving-surface and the distance apart of the sprayers and brushes is such as to enable each thin spray or film of glue to be partially or nearly dried before the next spray or film is applied.

The receiving-surface is composed of the belt B (see Fig. 2) and the surface 2, which may be of metal, as stated; but the thin metal may be omitted.

I claim—

1. The herein-described improvement in the art or method of manufacturing glue, which

consists in applying the hot liquid glue upon a receiving-surface in successive thin layers, substantially as described.

2. The herein-described improvement in the  
5 art or method of manufacturing glue, which consists in applying the hot glue in a liquid state to a receiving-bed in successive thin layers, whereby each layer becomes partially dried before the next successive layer is applied, and

removing the resultant layer from the receiving-bed, substantially as described. 10

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

KING UPTON.

Witnesses:

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GEO. H. CROWELL.