No. 748,430. PATENTED DEC. 29, 1903.

P. S. SMITH.

# NECK GLUING MACHINE.

APPLICATION FILED AUG. 7, 1903.

NO MODEL.

Fig. 1

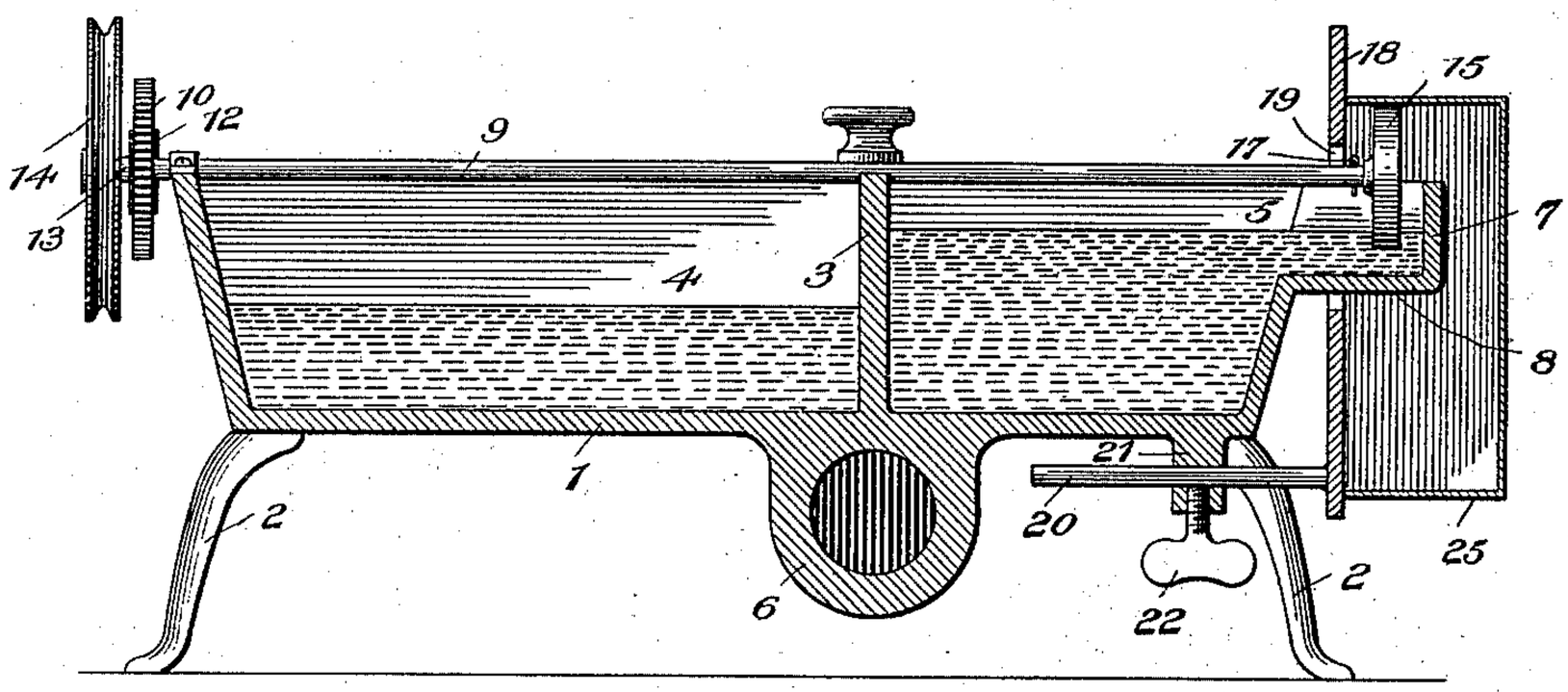



Fig. 2.

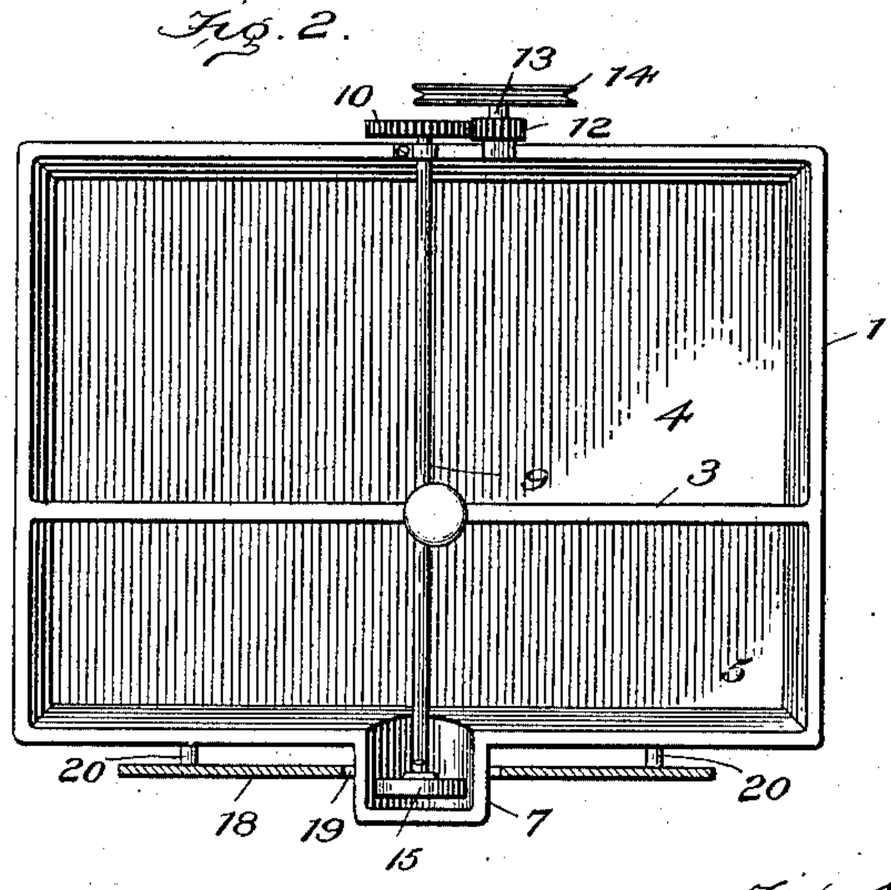



Fig. 3.

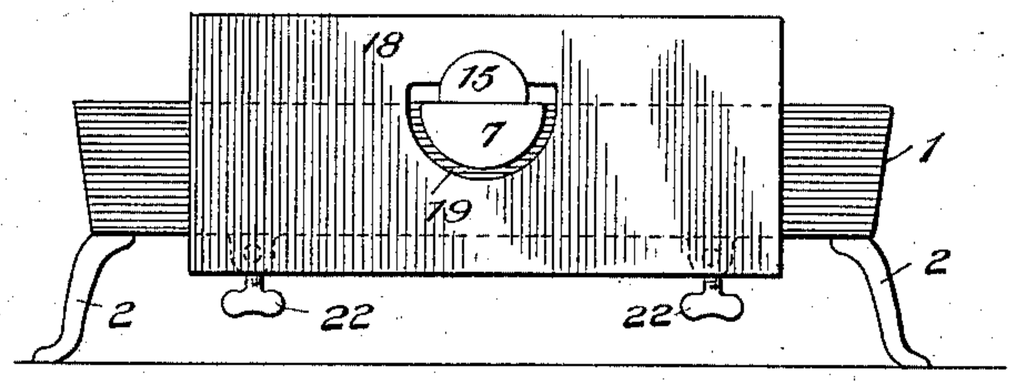
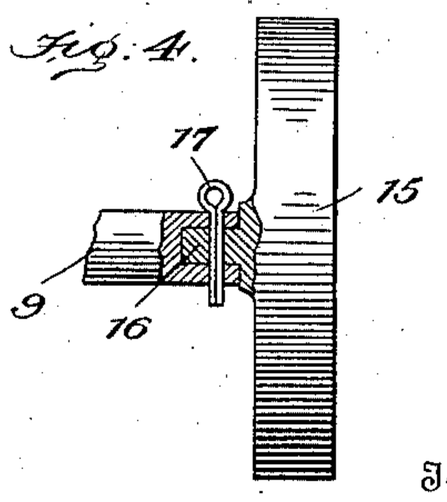



Fig. 4.




Witnesses

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No. 748,430. Patented December 29, 1903.

# UNITED STATES PATENT OFFICE.

PHILIP S. SMITH, OF PHILADELPHIA, PENNSYLVANIA.

## NECK-GLUING MACHINE.

SPECIFICATION forming part of Letters Patent No. 748,430, dated December 29, 1903.

Application filed August 7, 1903. Serial No. 168,599. (No model.)

*To all whom it may concern:*

Be it known that I, PHILIP S. SMITH, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Neck-Gluing Machines, of which the following is a specification.

My present invention relates to a machine for applying a stripe of glue to the interior walls of paper boxes prior to the application of the necks therein and is known in the art as a "neck-gluing" machine.

In the manufacture of a certain class of paper or veneer boxes a strip or band of comparatively stout material is pasted to the inner walls of the box in such manner that the edge of the said strip or band will project above the top of the box, and thus constitute a support or retainer for the box-cover. This inserted strip or band is known as the "neck."

Heretofore and prior to my present invention it has been the practice to either apply glue to one surface of the neck prior to its insertion in the box or to apply the glue directly to the inner walls of the box, the glue in both cases according to the old method being applied with a brush by hand. This method is not only slow, tedious, and costly, but it is difficult to apply the glue by hand with a brush in a uniform and straight manner, and this is most important in order to prevent the glue from spreading out beyond the edges of the neck, which is very undesirable, as it would detract materially from the appearance of the finished box.

The purpose of this invention then is to provide a machine for applying a stripe or band of glue to the inner walls of a box in a straight, even, and uniform manner.

Briefly and generally stated, the invention comprises a glue-tank, preferably divided into two compartments, from one of which a relatively small glue trough or pan projects, and a glue-applying device, such as a disk or roller, rotatably mounted in said trough and in the glue therein, with means for rotating said glue-applying device, whereby when a box is placed over the same and rotated so that the inner walls thereof will be acted upon by the said device a uniform and even stripe or band of glue will be imparted to the said box-walls.

The invention contemplates, further, an adjustable abutment plate or gage constructed and arranged to support the box, so that the band or stripe of glue may be applied at any desired point from the edge of the box.

The invention has in view other objects and purposes, which will be clearly defined in the accompanying specification.

In order to enable others to understand, make, and use my said invention, I will now proceed to describe the same in detail, reference being had for this purpose to the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of the machine, showing a box thereon in the position it occupies during the gluing operation. Fig. 2 is a top plan view of the machine. Fig. 3 is a view looking at the front end of the machine, and Fig. 4 is an enlarged detail view of one of the glue-applying disks or rollers.

Similar reference-numerals indicate corresponding parts throughout the several views.

The reference-numeral 1 designates a glue-tank supported upon legs 2 and provided with a longitudinal partition 3, dividing the said tank into two glue-compartments 4 5. The tank is heated by means of a steam or other pipe 6, as usual in devices of this type. Projecting outward from and communicating with the compartment 5 is a trough or pan 7, the bottom 8 of which is elevated above the bottom of the main tank. It will be seen that the said trough or pan is relatively small as compared with the tank proper, the purpose of which will be hereinafter explained.

The reference-numeral 9 designates a rotary shaft journaled in suitable bearings at one end of the tank and in the partition 3, the said shaft having a gear 10 mounted upon one end thereof, which gear meshes with a smaller gear 12, mounted upon a stub-shaft 13, which latter is driven by means of a grooved pulley 14 through the medium of a belt. (Not shown.) The opposite end of the shaft 9 terminates above the trough or pan 7, and upon said end is removably mounted a glue-applying disk or roller 15. In order that the said disk or roller may be readily removed

and a roller of a different width substituted therefor, I provide the said disk or roller with a rectangular projection 16, which fits into a corresponding socket in the end of the shaft 9, a cotter-pin 17 being employed to connect the two parts. While I have shown one way of removably attaching the glue-applying disk or roller to its shaft, it will be evident that I may employ other means for this purpose. By the construction described it will be seen that the glue-applying disk or roller rotates in the body of glue in the glue pan or trough and that the periphery of said disk or roller projects above the said trough or pan for a purpose presently to be explained.

The reference-numeral 18 designates a gage plate or abutment, which is provided with an opening 19, by which the said plate may be passed over the trough or pan 7, as shown. The said plate has two rods 20 projecting from the lower inner face thereof, which rods pass through apertured ears or lugs 21, formed upon the under side of the glue-tank, the said rods, with the plate, being securely held in any desired position of adjustment by means of thumb-screws 22 threaded in the said ears or lugs 21.

In operation the gage plate or abutment is first adjusted and set back the proper distance from the glue-applying device, which position is determined according to the distance it is desired to apply the glue within the box. The box 25, as clearly shown in Fig. 1, is now placed with its open top in flat contact with the gage-plate 18 and brought down so that the inner wall of one side thereof will lie upon the glue-applying device, and by rotating said box it will be readily seen that a stripe or band of glue will be applied around the entire inner wall of the box, the distance of the stripe from the open edge of the box being determined by the position of the gage-plate.

It is a well-known fact that the glue employed by box-makers must be kept at a certain or nearly a certain temperature in order to accomplish the best results, and it is with this end in view that I have provided the two glue-compartments 4 and 5, before referred to. The compartment 4 is employed as a reserve or storage compartment for glue, while the compartment 5, which communicates with the trough or pan 7, is the one from which the glue is being constantly taken by the glue-applying device. As both of these glue-compartments are heated by the same means, the glue contained therein will be kept at a uniform temperature at all times, and as the level of the glue lowers in the compartment 5 it is simply necessary to dip from time to time a fresh supply of glue from the compartment 4, which glue being of the same temperature as the glue in the compartment 5 no ill effects will result, which would be the case if glue from another tank of different temperature were supplied to the said compartment 5.

By removably attaching the glue-applying disk or roller to its shaft it will be seen that rollers of different widths may be readily employed as occasion demands whereby to give a wide or a narrow stripe or band of glue, depending upon the depth of the boxes being made.

Various changes or additions may be made to the machine herein shown and described without departing from the spirit of the invention as expressed in the following claims.

What I claim is—

1. In a machine of the class described, a glue-tank having a trough projecting outward from one end thereof and unobstructed upon all sides, whereby a box may be placed over and around the same, and a glue-applying device rotatable transversely of and in said trough and having its glue-applying face projecting above the same.

2. In a machine of the class described, a glue-tank having a trough projecting outward therefrom and unobstructed upon all sides, whereby a box may be placed over and around the same, a glue-applying device rotatable transversely of and in said trough and having its glue-applying face projecting above the same, and means for rotating the said glue-applying device.

3. In a machine of the class described, a glue-tank having a relatively small glue-trough communicating therewith, and a glue-applying roller rotatable transversely of and in said trough, the periphery of said roller projecting above the trough, said trough and roller being unobstructed from above and below, whereby a box may be placed over and around the same.

4. In a machine of the class described, a glue-tank having a trough projecting outward therefrom, a rotary shaft terminating at a point adjacent to the outer edge of said trough, and a glue-applying roller removably mounted upon the end of said shaft and rotatable in the trough, the periphery of said roller projecting above the trough, and the trough and roller being unobstructed from above and below, whereby a box may be placed over and around the same.

5. In a machine of the class described, a glue-tank divided into two compartments, a trough communicating with one of said compartments, and a glue-applying device rotatable in said trough.

6. In a machine of the class described, a glue-applying device constructed to apply glue to the inner walls of a box, and a gage or support for the box to regulate the position of said device within the box.

7. In a machine of the class described, a glue-applying device constructed to apply glue to the inner walls of a box, and an adjustable gage or support for the box arranged on one side of said device to regulate the position of the latter within the box.

8. In a machine of the class described, a

glue-applying device constructed to apply glue to the inner walls of a box, an adjustable gage-plate movably supported in rear of said device, and means for holding said plate in its various positions of adjustment.

9. In a machine of the class described, a glue-tank having a trough communicating therewith, a glue-applying device rotatable in said trough, a gage-plate having an opening therethrough for the trough, and means for adjusting the said plate to and from the glue-applying device.

10. In a machine of the class described, a glue-tank having an open trough communicating therewith, a glue-applying roller rotatable in said trough, a gage-plate having an opening through which the trough projects, means for adjusting said gage-plate, and means for rotating the glue-applying roller.

11. In a machine of the class described, a glue-tank, a trough projecting outward from one end of the tank at a point above the bottom thereof, said trough being unobstructed from below, whereby a box may be placed over and around the same, and a glue-applying device rotatable transversely of and in said trough and having its glue-applying face projecting above the same.

12. In a machine of the class described, a glue-tank, a trough communicating therewith and projecting outward therefrom at a point above its bottom, said trough being unobstructed from below, whereby the same may be extended into a box, a glue-applying device rotatable in said trough and having its glue-applying face projecting above the same, and means for rotating said glue-applying device.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

PHILIP S. SMITH.

Witnesses:
GEORGE Z. SUTTON,
WALTER F. HENRY.