H. A. SÉVIGNÉ.

PARAFFINING MACHINE.

APPLICATION FILED DEC 22, 1916. RENEWED SEPT. 30, 1920.

1,399,160. Patented Dec. 6, 1921.

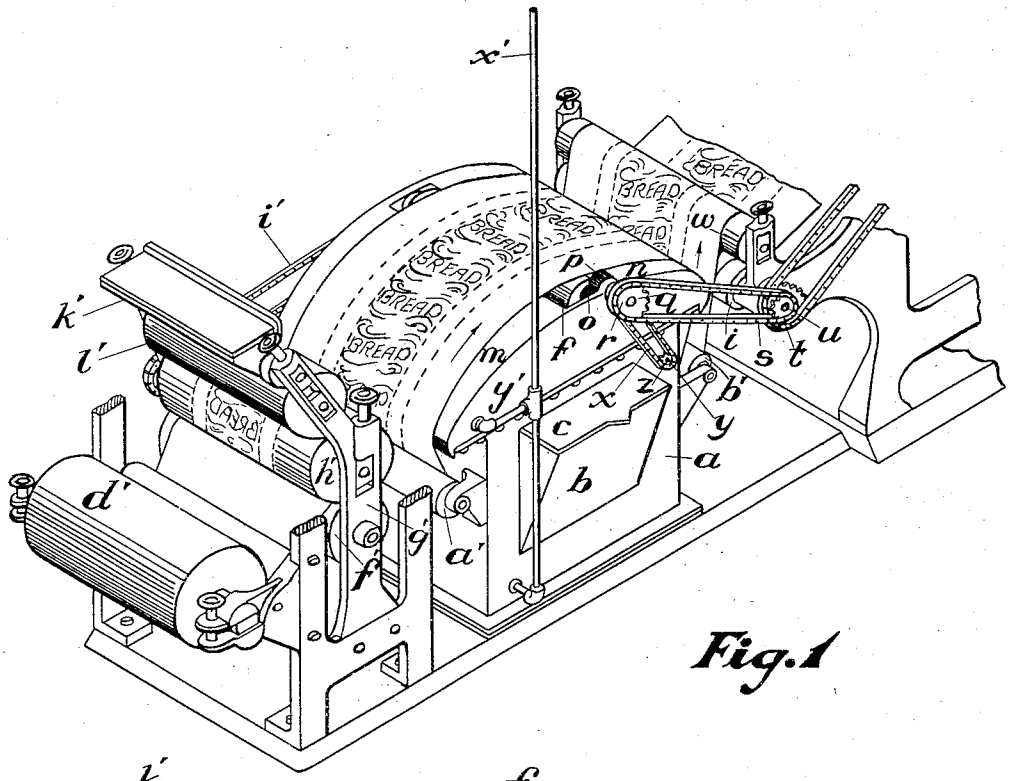


Fig. 1

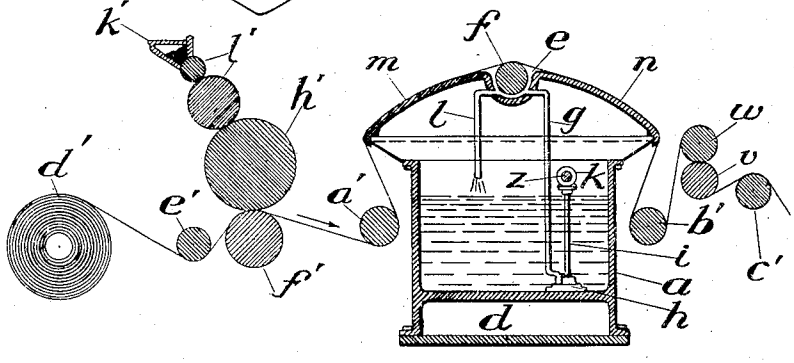


Fig. 2

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PARAFFINING-MACHINE.

1,399,160. Specification of Letters Patent. Patented Dec. 6, 1921.

Application filed December 22, 1916, Serial No. 138,349. Renewed September 30, 1920. Serial No. 413,899.

To all whom it may concern:

Be it known that I, HENRI A. SÉVIGNÉ, of Winthrop, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Paraffining-Machines, of which the following is a specification.

This invention relates to the manufacture of moisture-proof paper of the kind known as paraffined or waxed paper, and refers particularly to the making of paper which is waxed on but one side leaving an uncoated surface capable of properly showing printed matter.

The object of the invention is to provide a simple machine which will not only coat the under surface only of the paper, but will coat that surface evenly regardless of any fluctuations in the speed of travel of the paper or even of temporary stoppages in the feed.

With this object in view, my invention consists in the construction and combination of parts substantially as hereinafter described and claimed.

Of the accompanying drawings:

Figure 1 is a perspective view of a machine embodying my improvements, said view also illustrating printing mechanism because the waxing mechanism is especially adapted to leave the upper surface of the paper entirely un-coated so as to not affect any printed matter on the said upper surface.

Fig. 2 represents a longitudinal section of the machine.

Similar reference characters indicate similar parts in both of the views.

The tank or receptacle *a* for the paraffin or wax to be used for coating the web of paper, has a projecting wall portion *b* having a lid *c* for convenience in supplying the same with lumps of wax, a steam chamber *d* being provided below the bottom of the tank. The top of the tank is arched, with a depression at its apex to form a trough *e* in which is mounted a roll *f*. The trough is kept filled with melted wax to a certain level by suitable means such as a pipe *g* connecting with a rotary pump *h* driven by a shaft *i* and gearing *k*. An overflow pipe *l* determines the level of the wax in the trough.

The temperature of the tank is such that the arched top is kept hot. The curved surface *m* over which the paper is pulled on its way to the waxing roll *f* acts as a pre-heater for the paper so that the wax enters the pores or fibers of the paper much more readily than can be effected when paper is cold; and the curved surface *n* over which the paper is pulled by the feed mechanism acts to drive or iron the wax into the paper. A pipe *x'* supplies the chamber *d* with steam, a branch *y'* leading to a point to especially supply the pre-heater *m*.

The heated curved surface or table *n* insures uniformity of the coating regardless of any fluctuations which may occur in the speed of travel. Such fluctuations, or temporary stoppages, cause the roll to leave a slight surplus of wax across the paper each time it occurs. But owing to the curvature of said surface or support for the paper, the paper is drawn tightly over it when regular feed begins again, and such surplus is ironed out, thus avoiding the leaving of transverse ridges in the coating.

The roll *f* may or not be driven by means other than the frictional action of the paper passing over it. In Fig. 1 I have shown means for positively rotating the roll *f*, said means including a pinion *o* on the shaft of said roll meshing with a pinion *p* carried by a stud shaft *q* having a sprocket *r* driven by a chain *s* which, in turn, is driven by a sprocket *t* carried by the shaft *u* of the lower one of a pair of suitable feed rolls *v*, *w*. By varying the speed of rotation of roll *f* relatively to the speed of travel of the paper, by any suitable mechanism not necessary to illustrate, I can vary the amount of waxing imparted to the paper by said roll. A chain *x* connects a sprocket on shaft *q* with a sprocket *y* on shaft *z* which carries one of the members of the gearing *k*.

To cause the paper to travel smoothly over the convex top of the waxing device (the front and rear edges of said top being rounded) I provide guide rolls *a' b'* below the plane of said top, mounted in brackets projecting from the front and rear walls of the tank. *c'* is a guide roll for the paper after it leaves the feed rolls on its way to any desired point of delivery for the paper.

Waxed paper is used for inclosing many kinds of articles. For some articles it is sufficient to employ paper which is waxed

on but one side, and it is this class of paper which the present machine furnishes. The other side or surface of the paper, being un-coated, is capable of receiving and clearly retaining printed matter. When a web of paper which is to be waxed by the present machine and is to be also printed. the following mechanism may be employed:—

From a suitable supply roll d' the paper will pass under a guide roll e' and over a platen roll f' mounted in standards g' of the frame of the machine. Said standards also support a printing cylinder h' driven by a chain i'. Ink from a fountain k' is transferred by rolls l' to the printing cylinder.

Having now described my invention, I claim:

1. The combination with a machine having means for causing a web of paper to travel, of a trough, a roll in said trough, stationary convex plates situated closely adjacent said roll at opposite sides thereof, means for supplying the trough with wax, and means for heating said trough, roll, and plates.

2. The combination with a machine having means for causing a web of paper to travel, of a trough, a roll in said trough, stationary convex plates situated closely adjacent said roll at opposite sides thereof, means for supplying the trough with wax, means for heating said trough, roll and plates, and means for positively rotating the roll independently of the friction action of the paper thereon.

3. The combination with a machine having means for causing a web of paper to travel, of a trough, a roll in said trough, an extended curved stationary ironing surface for the paper after it leaves the roll, and means for heating said trough, roll, and ironing surface.

4. Means for waxing paper, comprising a trough having a roll mounted therein, an extended curved stationary iron for the paper after it leaves the roll, means for supplying the trough with wax means for drawing the paper over the roll, and a heater for the paper adjacent said roll.

5. Means for waxing paper, comprising a trough having a roll mounted therein, means for supplying the trough with wax, means for drawing the paper over the roll, a pre-heater for the paper on its way to said roll, and an extended curved stationary iron for driving the wax into the paper and smoothing it after it passes the roll.

6. Means for waxing paper, comprising a trough having extended curved stationary surfaces at opposite sides thereof, a roll in said trough, means for supplying the trough with wax, means for heating the trough, roll, and said curved surfaces, and means for drawing the paper over said surfaces and roll.

7. Means for waxing paper, comprising a trough having a roll mounted therein, an extended curved stationary iron for the paper after it leaves the roll, means for supplying the trough with wax, means for drawing the paper over the roll, and means for positively rotating the roll at a predetermined speed relatively to the speed of travel of the paper.

8. The combination with a machine having a wax applier, of means for causing a web of paper to travel over said applier to take a coating of wax on its under surface while traveling, an extended curved stationary support having a smooth ironing surface for the paper after it leaves said applier, and means for heating the applier and ironing surface.

9. Means for waxing paper, comprising wax-applying means, an extended curved stationary support having a smooth ironing surface for the paper adjacent to the wax-applying means, means for drawing the paper over the wax-applying means and in contact with said ironing surface to coat and iron the under surface of the paper, and a heater for the paper adjacent to said wax-applying means.

In testimony whereof I have affixed my signature.

HENRI A. SÉVIGNÉ.