

E. G. SPARKS.

MACHINE FOR WAXING PAPER.

No. 344,142.

Patented June 22, 1886.

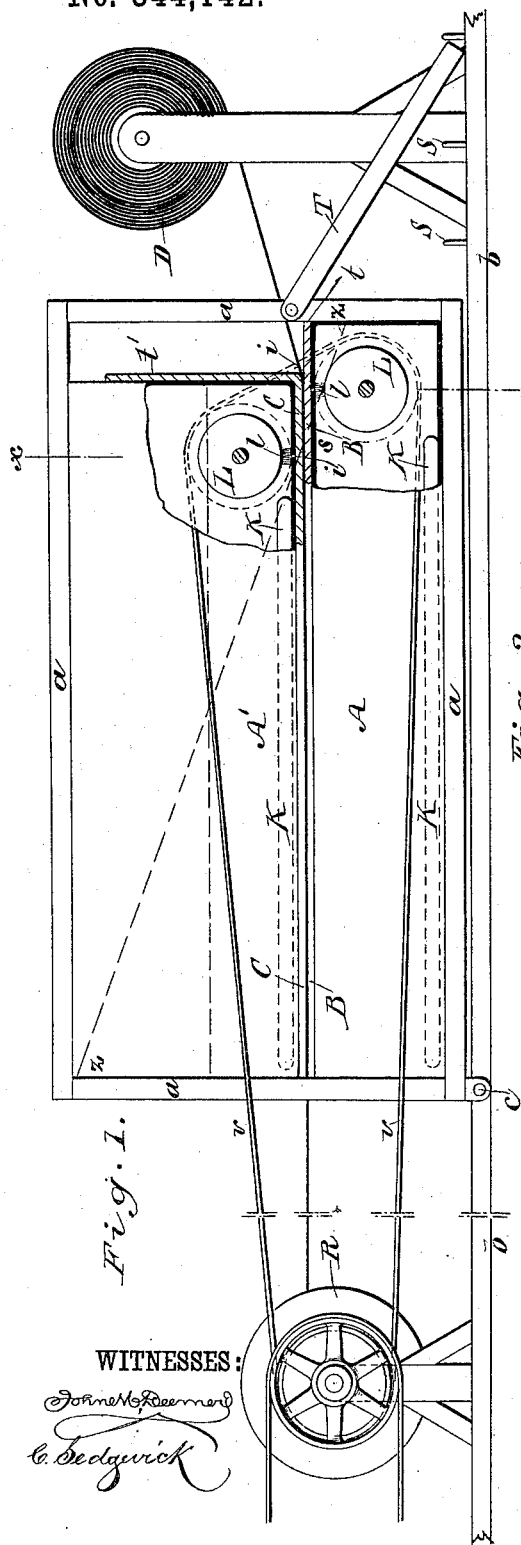
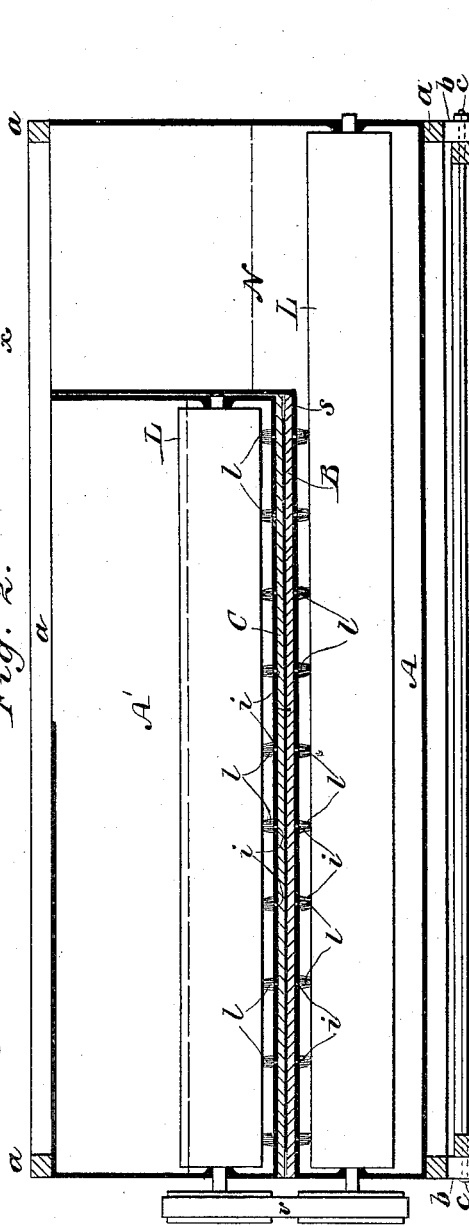


Fig. 1.

Fig. 2.



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Fig. 4.

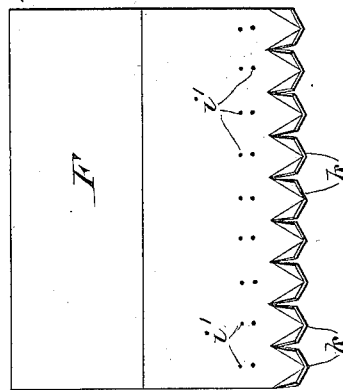
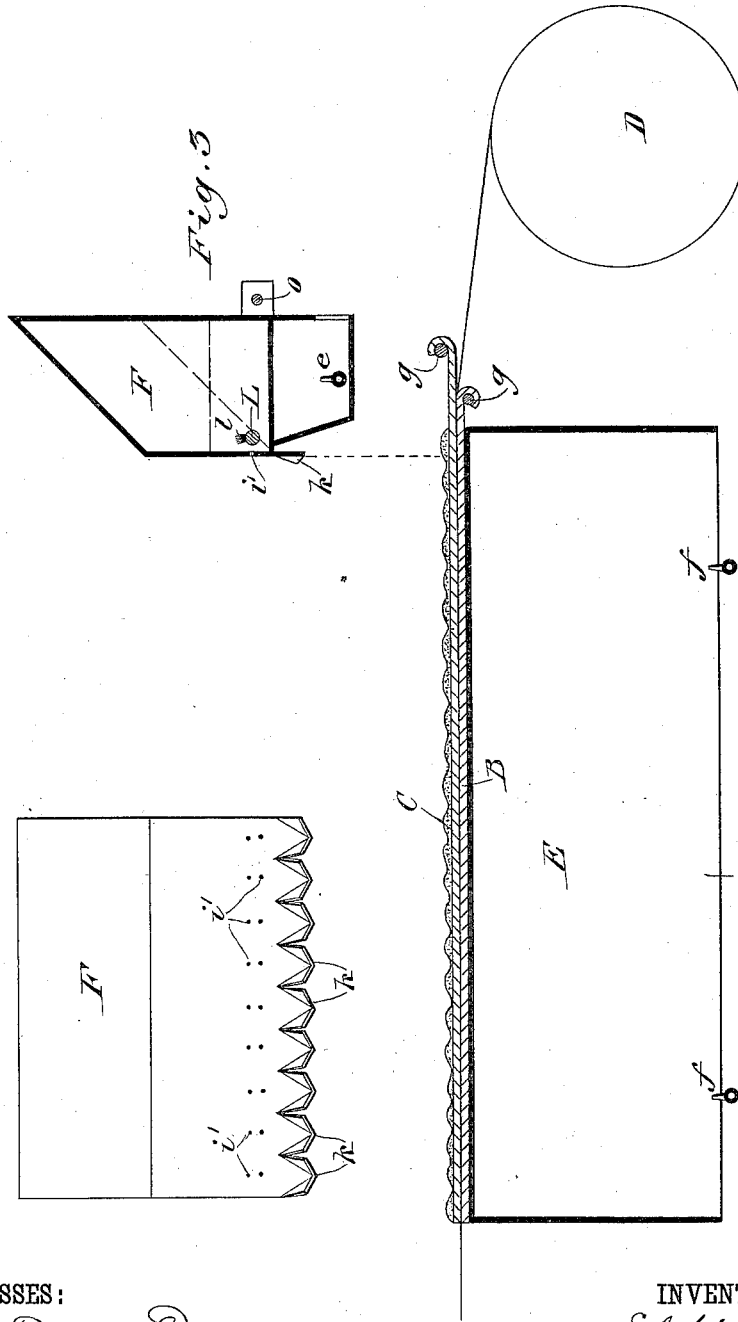


Fig. 5.



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(No Model.)

4 Sheets—Sheet 3.

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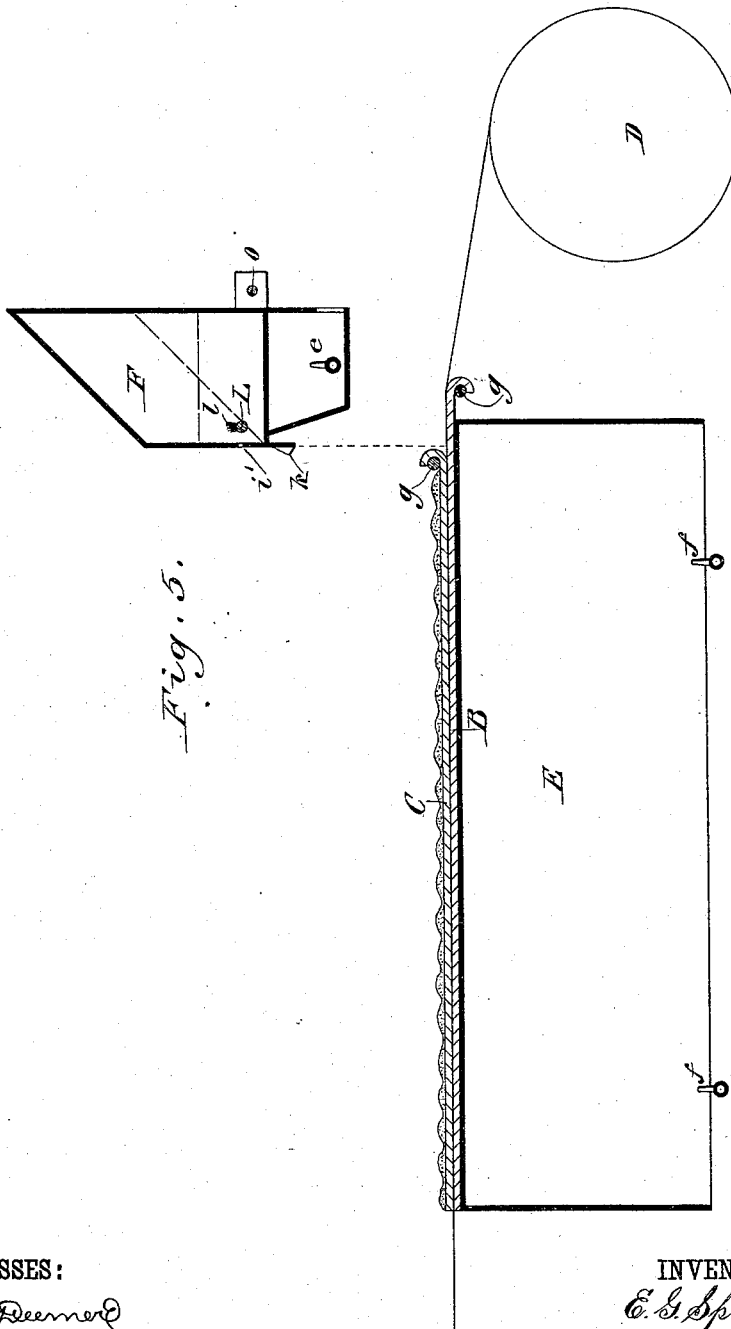


Fig. 5.

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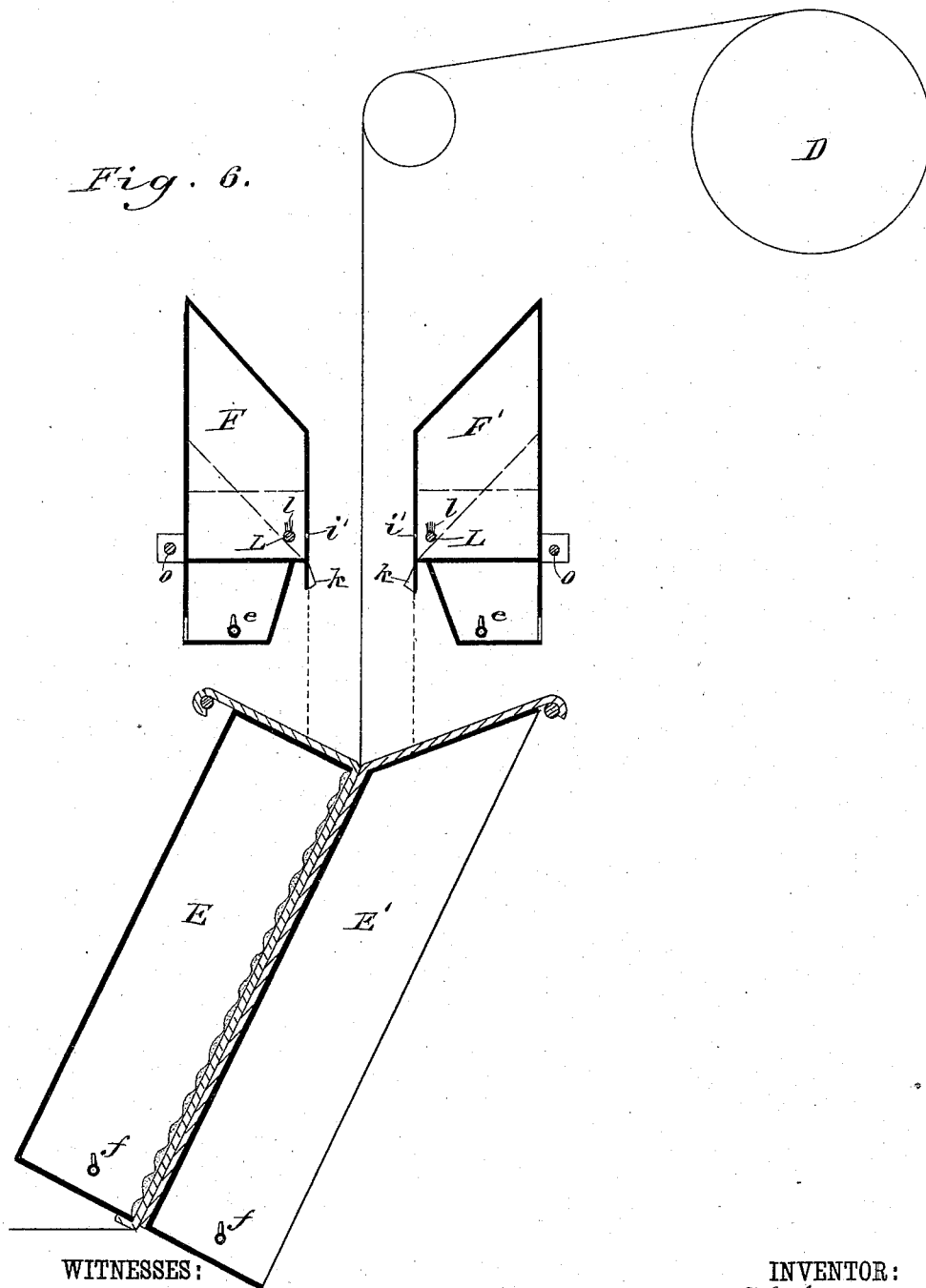
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UNITED STATES PATENT OFFICE.

EDWARD G. SPARKS, OF BROOKLYN, NEW YORK.

MACHINE FOR WAXING PAPER.

SPECIFICATION forming part of Letters Patent No. 344,142, dated June 22, 1886.

Application filed September 16, 1885. Serial No. 177,248. (No model.)

To all whom it may concern:

Be it known that I, EDWARD G. SPARKS, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Machine for Waxing Paper, of which the following is a full, clear, and exact description.

My invention relates to the construction of a machine for making wax or paraffine paper, the objects of the invention being to evenly distribute the wax upon the surface or surfaces of the paper, and without any subsequent treatment, such as reheating, polishing, or scraping to remove surplus wax; and the invention consists of one or two heated blankets which are charged with wax or paraffine and so arranged that the web of the paper to be waxed may be drawn beneath or between the said charged and heated blankets.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of my improved machine for waxing paper, representing the machine as consisting of two wax or paraffine tanks arranged to support and heat the blankets, a portion of one end of each of the tanks being cut away to disclose the interior arrangement. Fig. 2 is a front vertical sectional view of the same machine, the view being taken on broken line *xx* of Fig. 1. Fig. 3 is a side view of a modification of the machine represented in Figs. 1 and 2, the wax or paraffine tank being an independent structure arranged above the heated blanket in position to subject the forward end of said blanket to a continual drip of wax. Fig. 4 is a front view of the paraffine-tank shown in Fig. 3. Fig. 5 represents an arrangement whereby the web of paper receives the drip and carries the wax to the blanket, thereby charging it; and Fig. 6 represents the machine constructed so that the web is drawn between two blankets, both of which are subjected to a drip of wax.

Referring now to the general construction illustrated in Figs. 1 and 2, *A A'* represent two tanks which are mounted in a frame, *a a*, that is pivotally connected at one end to the floor, or to bed-pieces *b b*, as is clearly shown at *c*. The main part of the lower tank, *A*, is covered, and on this cover *s* there is placed a

blanket, *B*, the forward end of which is securely fastened to the tank at *t*. Along one side of the tank *A* there is an upwardly-extending chamber, *N*, the purpose of which will presently be explained. The bottom of the tank *A'* is covered by a blanket, *C*, which is fastened to the forward end of the tank at *t'*, and when in working position the tank *A'* rests upon the covered portion *s* of the tank *A*, the blankets *B C* being, however, between the tanks. Near the forward end of each tank there is a row of small holes, *ii*, the row in the tank *A* being in the cover *s*, while the row in the tank *A'* is in the bottom of that tank. Any desired quantity of wax or paraffine may be placed in the tank *A'*, but in the tank *A* the wax must extend up within the chamber *N* in order to be above the holes formed in the cover *s*. Steam-coils *K K* are placed in the bottoms of the tanks, in order that the wax may be rendered liquid and the blankets *B C* properly heated.

From the construction just described it will be seen that the blankets will be supplied with a uniform quantity of wax as long as the holes *ii* are open and unclogged, and in order that the holes may always be kept free and clear I provide a series of brushes, as *ll*, which are carried on revolving shafts or drums *L L*, which run across the interior of the forward ends of the tanks in a position such that when the shafts are revolved the brushes will clear out all dirt or sediment which may have settled in or about the holes *ii*. The necessary rotary motion is imparted to the shafts *L L* by means of a driving-belt, *v*, which runs over pulleys carried by the projecting ends of the shafts and receives the motion from a pulley carried by the shaft of a reel, *R*, said reel-shaft being driven by a belt reaching to a pulley driven directly by an engine or any other source of power.

The operation of the machine is as follows: The steam-coils are allowed to fill and the wax and blankets are heated, so that the wax will be evenly distributed upon the paper. The tank *A'* is then lifted and the leading end of a web of paper is brought over the blanket *B* and carried to the reel *R*, which is located at a sufficient distance to allow the wax to set or cool on the paper before the web is wound

thereon. The roll of paper is shown at D. After the leading end of the web has been caught upon the reel R the tank A' is placed in its normal position upon the covered portion of the tank A, so that its blanket C will rest upon the top of the web, and the reel is started to draw the paper between the blankets, which will be charged with wax delivered from the tanks A A' through the holes *i i*.

The simple operation of drawing the web through the wax-charged blankets will be sufficient to distribute any desired amount of wax upon the surfaces of the paper and leave it in a condition such that when cooled it will be ready for the market, the amount of wax deposited on the paper being varied by the speed given to the web or by the size of the holes in the tanks.

When the machine is not in use, the forward end of the frame *aa*, in which the tanks A A' are placed, is raised to a height sufficient to bring the level of the wax in both tanks below the level of the holes *i i*, the frame being supported in the elevated position by legs, as T, which are pivotally connected to the frame and arranged to rest against the stops S. When the frame is elevated, as described, the level of the wax will be about as indicated by the dotted line *zz*.

In Figs. 3, 5, and 6 I illustrate constructions wherein the blankets are charged by a drip of wax from tanks arranged above the forward ends of heated boxes, upon which the blankets are supported.

Referring now to Figs. 3 and 5, E is a box, the interior of which is heated in any manner desired, but preferably by means of steam-pipes or gas-jets, as *ff*. Two blankets, B and C, each of which is firmly secured at its forward end to a cross rod or bar, as *g*, or the blanket B could be secured directly to the box E, resting upon the box E. The upper blanket, C, is uniformly weighted upon the upper surface, preferably by making the blanket of two pieces, that are united by transverse seams about half an inch apart and filling the spaces thus formed with shot, sand, or other suitable heavy material. Above the forward end of the box E there is a wax or paraffine tank, F, that is heated by gas-jets *e*, or other heating apparatus, and in the front of which there are drilled one or more rows of fine holes, *i' i'*, through which the wax issues in small streams or drops. These holes *i' i'* are drilled about an inch apart, and to make the drip uniform along the whole length of the tank the front side is extended down a short distance below the bottom of the tank and is cut up midway between the holes and the corners of the flaps turned up to form spouts *k k*, from which the wax from each hole or pair of holes drips upon the paper or blanket in line with the hole or holes, and independent of all other wax issuing from the tanks. The tanks F are pivotally mounted at *o*, so that when not in use they can be turned back and allow the level of the wax to fall below the line of the holes *i' i'*.

The only difference in the construction illustrated in Figs. 3 and 5 is that in Fig. 3 the tank F is represented as being in position to subject the forward end of the blanket to the drip from its spouts *k k*, while in Fig. 5 the drip is delivered to the web just in front of the blanket; but it is of course immaterial whether the wax is allowed to drip upon the forward end of the blanket B or upon the web of paper just in front of the blanket, the whole idea being to supply the blanket with a constant uniform amount of wax or paraffine for distribution upon the paper.

In operation the box E and the contents of tank F are properly heated, and the leading end of the web is passed in between the blankets and carried to the reel R, which, however, is not shown in the figures directly under consideration. The tank F is then turned down, to allow the wax to drip upon the blanket or web, and the reel R started to draw the web beneath the blanket C, which will act to distribute a uniform coating of wax upon the upper surface of the web.

In Fig. 6 I illustrate a construction wherein the blankets are placed between two inclined heated boxes, as E E', and wherein each blanket is subjected to the drip of a tank—such as those heretofore described—said tanks being shown at F F'. In this case the operation is the same as with the apparatus shown in Figs. 3 and 5, except that as each blanket receives the drip of a tank both surfaces of the paper will be simultaneously coated with wax, as in the case of the apparatus shown in Figs. 1 and 2. As in the case of the tanks A A', the tanks F and F' are supplied with revolving brushes which keep the feeding-holes clear.

The apparatus illustrated in Figs. 3 and 5 is intended for waxing the paper upon one surface only, while the construction illustrated in Figs. 1, 2, and 6 is to be used when the paper is to be waxed upon both sides; but the body of the paper is not to be saturated.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a machine for waxing paper, a blanket charged with wax or other coating material, under which the paper to be waxed or coated is drawn, substantially as described.

2. In a machine for waxing paper, the combination, with a blanket held upon a heated support or tank, of a feeding-tank, substantially as described.

3. In a machine for waxing paper, the combination, with a weighted blanket held upon a heated support or tank, of a feeding-tank, substantially as described.

4. In a machine for waxing paper, the combination, with two blankets mounted on heated supports, of feeding-tanks, substantially as described.

5. In a machine for waxing paper, the combination, with two blankets supported on heated surfaces, of feeding-tanks, substantially as described.

6. In a machine for waxing paper, the com-

ination, with the tanks A A', formed with holes *i i*, of blankets B and C, substantially as described.

5 7. In a machine for waxing paper, the combination, with tanks A A', formed with holes *i i*, and provided with brushes *ll*, of blankets B and C, substantially as described.

8. In a machine for waxing paper, the com-

ination, with a pivotally-mounted frame, *aa*, carrying tanks A A', formed with holes *i i*, of blankets B and C, substantially as described. 10

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Witnesses:

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EDWARD KENT, Jr.