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E. G. SPARKS.

PROCESS OF WAXING PAPER.

No. 326,689. Patented Sept. 22, 1885.

Fig. 1.

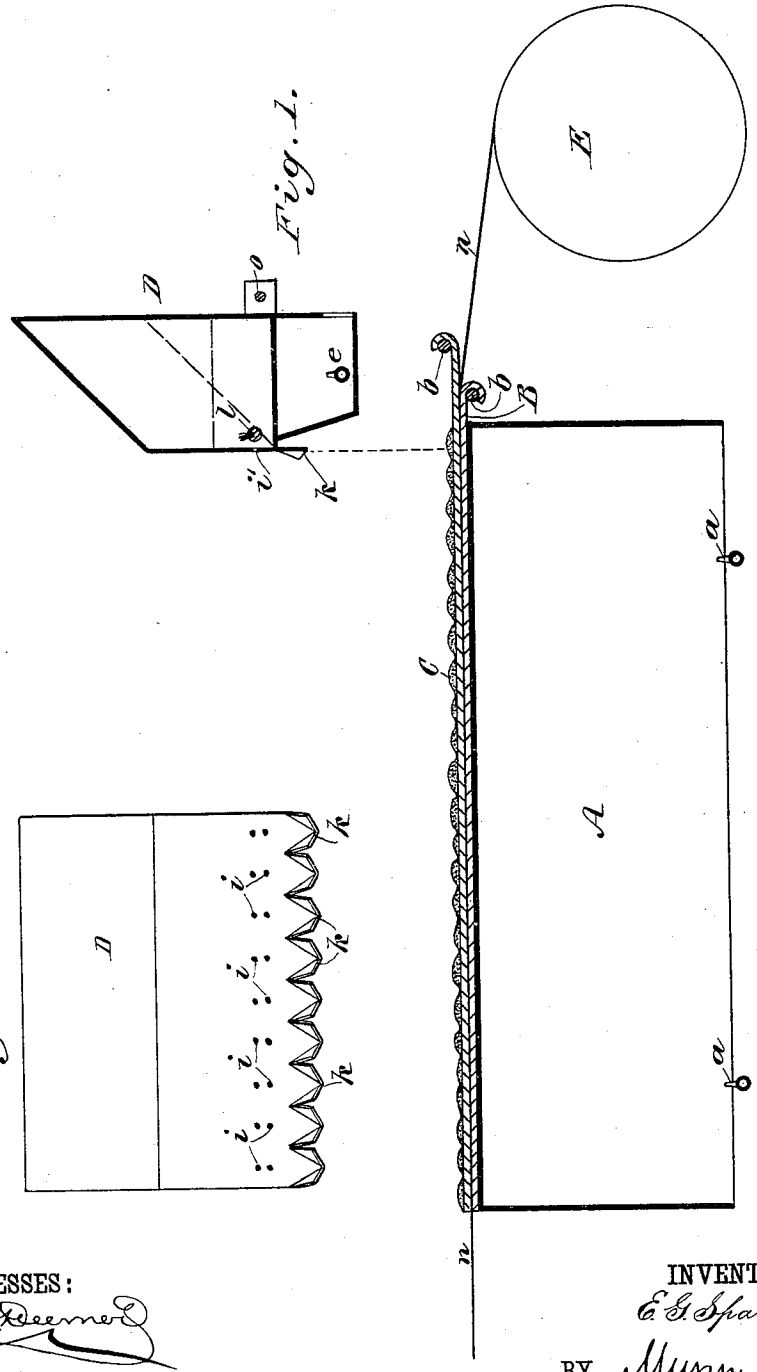


Fig. 2.

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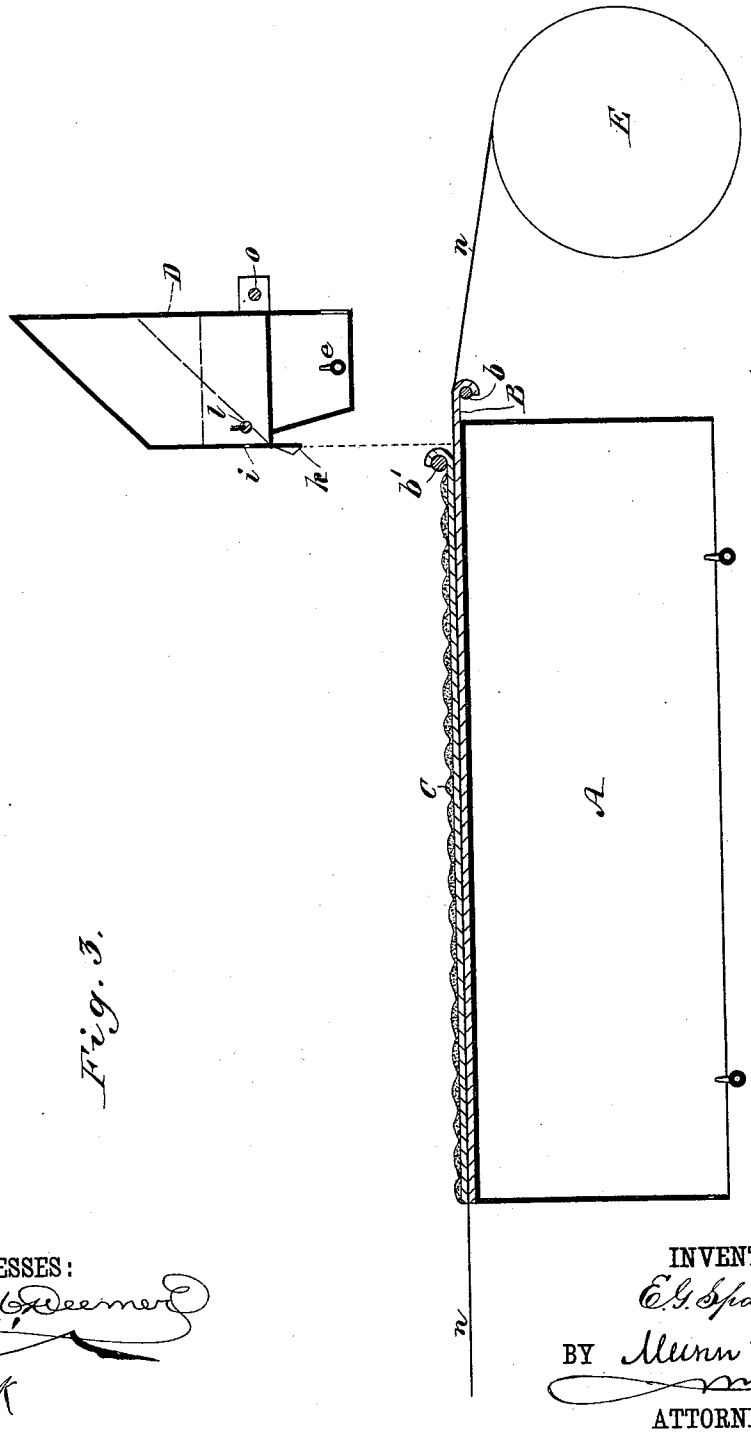


Fig. 3.

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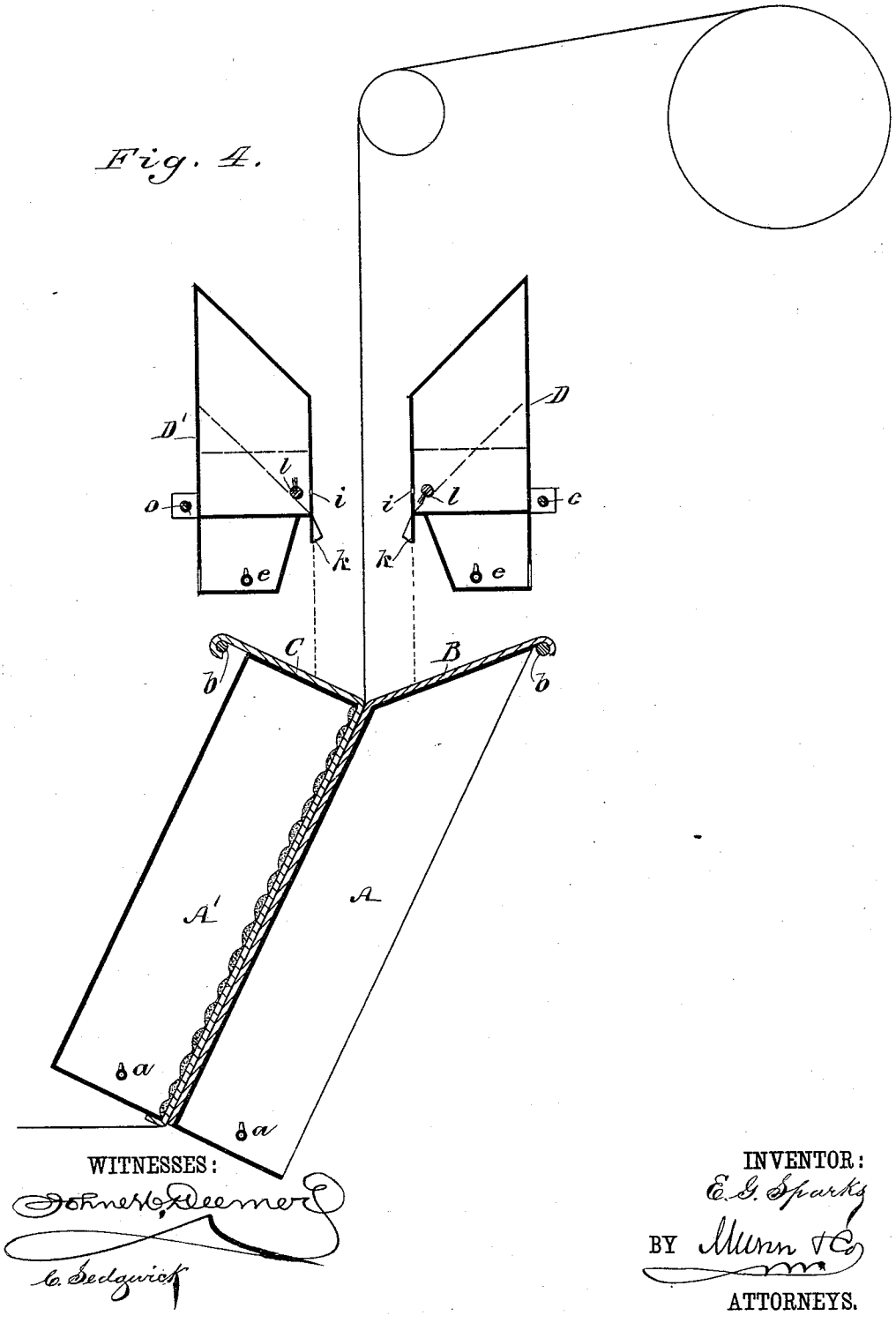
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Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWARD G. SPARKS, OF BROOKLYN, NEW YORK.

PROCESS OF WAXING PAPER.

SPECIFICATION forming part of Letters Patent No. 326,689, dated September 22, 1885.

Application filed June 15, 1885. (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 Process of Waxing Paper, of which the following is a full, clear, and exact description.

My invention relates to the manufacture of wax or paraffine paper; and it consists of a process to be more fully explained, by which the wax applied can be evenly distributed upon the surfaces or throughout the body or thickness of the paper, and by which the amount of wax to be so distributed can be regulated as the necessities of the case require.

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 one form of apparatus used to carry out my improved process, showing the wax or paraffine arranged to drop upon the blanket. Fig. 2 is a front elevation of the tank shown in Fig. 1. Fig. 3 shows the apparatus arranged so that the wax will drop directly upon one side of the paper; and Fig. 4 shows an arrangement whereby the paper is drawn between two blankets, both of which are kept saturated by a constant drip of wax or paraffine.

Referring now to Figs. 1 and 3, A is a box or oven, the interior of which is heated in any manner desired, but preferably by means of steam-pipes or by gas-jets, as *a a*. Two blankets, B and C, each of which is firmly secured at one end to cross rod or bar, as *b b*, rest upon and are heated by the box A. The upper blanket, C, is uniformly weighted upon its 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. The paper to be treated, which is shown at *n*, is drawn in between the blankets from a web or roll, E, by a reel set at a suitable distance from the blankets to allow the wax to set or cool upon the paper before being wound up. Above the forward end of the box A there is a wax or paraffine tank, D, that is heated by gas-jets, as *e*, 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, the amount required depending upon the thickness of wax desired upon the paper and also upon the speed at which the paper is advanced. The holes *i i* (see Fig. 2) 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 series of holes drips upon the paper or blanket in line with the hole or holes and independent of all other wax issuing from the tank. The tanks D 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*. A brush, *l*, which is revolved in the tank D, is mounted so as to bear against the inner side of the tank on a line with the holes *i i*, and acts to remove any dirt or sediment that may be drawn into the holes, thereby insuring a steady uniform flow of wax.

When the body of the paper is to be saturated, such an apparatus as has just been described is used in the following manner: The gas-jets under the tank D and within the box A are lit, so as to melt the wax and heat the blankets, in order that they will properly distribute the wax upon the paper as it passes between them. The leading end of the sheet is now passed between the blankets and carried to the feeding-reel located at a proper distance to permit the wax or paraffine to cool and set upon the paper before being wound thereon. The tank D is now turned down to the position shown in Figs. 1 and 3, and the wax allowed to drop upon the forward end of the blanket, through which it will soak and saturate the paper; or it may drop directly upon the paper, as shown in Fig. 3. The feed-reel is now started forward and the paper drawn between the blankets, and as the upper blanket is uniformly weighted, as described, it will press slightly, but evenly and continuously, upon the web as it is drawn along beneath it, and distribute the wax in an equal manner throughout the whole length of the web. It is immaterial whether the wax is allowed to drip upon the forward end of the upper blanket or upon the web of paper just in front of the

blanket, the idea being to supply the blanket with a constant uniform amount of wax or paraffine for distribution upon the paper.

The apparatus and operation above described are applicable to the lighter grades of paper; but when heavy paper is to be waxed upon both sides, and where the body of the web is not to be saturated, I employ such an apparatus as is illustrated in Fig. 4, wherein the two blankets are placed between inclined heated boxes, as A and A′, and wherein each blanket is subjected to the drip of a tank similar to those heretofore described, said tanks being shown at D and D′. In this case the operation is precisely the same as in the apparatus shown in Figs. 1 and 3, except that each blanket receives the drip of a tank, so that both surfaces of the paper are brought into contact with a blanket saturated with wax or paraffine.

It will be understood that the amount of wax issuing from the tanks may be regulated by changing the size of the holes *i i*.

By the use of such an apparatus and process as I have described I am able to instantly wax the paper to any desired thickness without subjecting it to a subsequent process of polishing, remelting, scraping, or removing surplus wax from the paper, as in the old methods where the web was passed through a bath of heated paraffine, or thickly coated on one side and passed over heated rollers to distribute the wax, all surplus wax being subsequently removed by scrapers, which left the web in an unfinished state that rendered polishing a necessity.

Although by my process I materially simplify the manufacture of waxed paper, and thereby reduce the cost, I produce an article of very superior quality.

The right to file an application for Letters Patent to cover the mechanical construction of the apparatus herein described is expressly reserved, as the claims now presented are directed to the process of waxing paper as carried into effect by the apparatus, and not to the peculiar construction of the apparatus itself.

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

1. The herein-described process of waxing paper, which consists in drawing the paper beneath a heated blanket which is charged with wax or paraffine, substantially as described.

2. The herein-described process of waxing paper, which consists in first subjecting the paper to the action of a drip of heated wax or paraffine, and in then drawing the paper between heated blankets, substantially as described.

3. The herein-described process of waxing paper, which consists in first subjecting the paper to the action of a drip of heated wax or paraffine, and in then drawing the paper beneath a weighted blanket, substantially as described.

4. The herein-described process of waxing paper, which consists in drawing the paper between two heated blankets which are each charged with wax or paraffine, substantially as described.

5. The herein-described process of waxing paper, which consists in drawing the paper beneath a heated blanket subjected to a drip of wax or paraffine, substantially as described.

EDWARD G. SPARKS.

Witnesses:
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