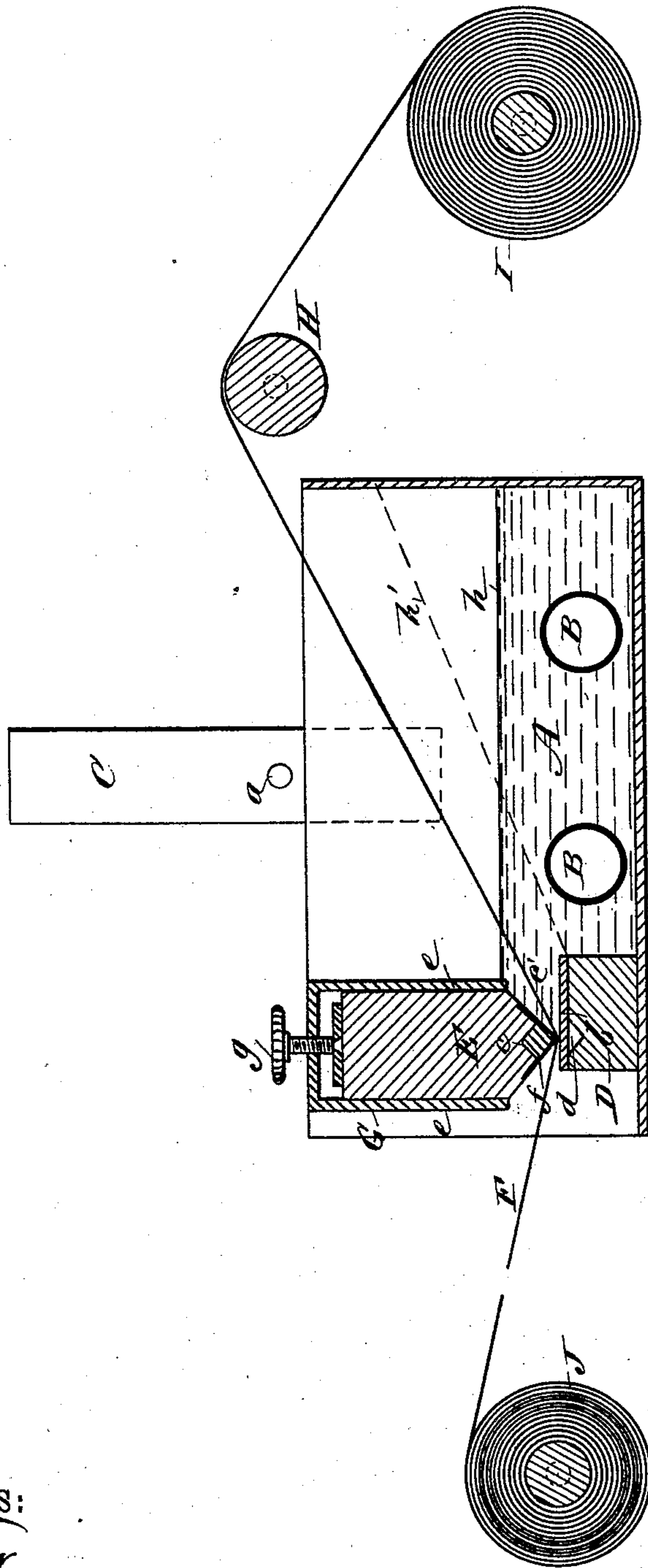


(No Model.)

E. G. SPARKS.  
PROCESS OF AND APPARATUS FOR COATING PAPER AND OTHER FABRICS.  
No. 343,345. Patented June 8, 1886.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

EDWARD G. SPARKS, OF BROOKLYN, NEW YORK.

PROCESS OF AND APPARATUS FOR COATING PAPER AND OTHER FABRICS.

SPECIFICATION forming part of Letters Patent No. 343,345, dated June 8, 1886.

Application filed February 12, 1886. Serial No. 191,776. (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  
5 Process of and Apparatus for Coating Paper and other Fabrics, of which the following is a specification, reference being had to the annexed drawing, forming a part thereof, which is a vertical transverse section of the apparatus  
10 employed in applying the wax or paraffine to the paper.

My invention relates to a new method of and apparatus for coating paper and other fabrics with wax, paraffine, or other coating material,  
15 which consists in drawing the web of paper or other fabric to be treated through a bath of melted wax, paraffine, or other coating material contained in a tank, the tank having an adjustable slit in the side thereof, the paper  
20 web passing through the slit, and carrying with it the required amount of paraffine or wax through the slit of the tank, as hereinafter more fully described.

In carrying out my invention, I provide a  
25 tank, A, of sufficient width to permit of passing the paper web through it, and where the coating material requires heat I arrange steam-pipes B near the bottom of the tank for maintaining the contents of the tank in a heat-  
30 ed or melted condition. Bars C, secured to opposite sides of the tank A, are supported upon pivots *a*, which permit of tilting the tank, to retain the liquid material therein, when it is desired to introduce a new web of  
35 paper or adjust the wax-distributing devices. One side of the tank A is closed by the bar D, the yielding strip *b*, secured to the top thereof, the adjustable bar E, and the elastic strip *c*, secured thereto. In the upper surface of  
40 the bar D, and below the yielding strip *b*, is formed a V-shaped groove, *d*, which permits of the yielding of the strip *b* at that point. The bar E, formed of wood or other rigid material, slides in a guide, G, formed of parallel  
45 strips *e*, secured transversely in the tank A, the lower V-shaped edge of the bar B being arranged above the V-shaped groove in the bar D. In the groove *f* of the bar E, along its lower edge, is placed the square yielding strip  
50 *c*, which in the present case is held in place by metal strips *c'*, secured to the angular faces of the bar and projecting over the strip. The

strip *c*, together with the yielding strip *b*, secured to the bar D, forms the mouth or slit of the tank A, through which the paper web F  
55 is carried in the operation of coating it with wax or paraffine. The bar E is adjustable vertically by screws *g*, swiveled in the top of the bar, and turning in threaded holes along the top of the guide G.  
60

Near the top of the tank A, at the side opposite the bars D E, is supported a loose guide-roller, H, and the paper to be coated or saturated is carried from the roll I over the  
65 roller H, thence downward into the tank A through the coating material contained in the tank, thence outward between the elastic strips *b c* to the roller J, upon which the finished paper is received, the paper being drawn through the  
70 tank by the rotary motion of the roller J.

The level of the melted wax or paraffine contained by the tank is indicated by the dotted line *h*, and *h'* shows its level when the tank is tilted for the purpose of introducing a new  
75 web of paper or adjusting the bar E. The pressure of the yielding strip *c* upon the paper and of the paper upon the strip *b* is regulated by the screws *g*, so that any desired amount of coating material may be allowed to  
80 pass outward with the paper web as it is carried through the slit between the strips *b c*, and the groove *d* in the bar D permits the strip *b* to yield to the inequalities of the paper as it is carried forward.

The bar E, instead of being supported and  
85 guided by the slide G, in which it is placed, may be supported and guided in any other convenient and efficient way. The relative arrangement of the bars D E may be reversed, and the bar D may be placed uppermost and  
90 made adjustable, while the bar E is secured in an inverted position to the bottom of the tank.

Instead of locating the slit in the side of the tank, I may arrange it at the top or bottom, or may form the slit between transverse bars  
95 placed at the normal level of the liquid in the tank.

The coated fabric prepared according to my improved method with my improved apparatus requires no scraping, brushing, or other  
100 subsequent treatment after leaving the slit of the tank A.

I do not limit or confine the application of my invention to any particular kind of fabric



nor to any special coating for its fabric, nor do I confine myself to any fixed position for the adjustable slit, as these features may be varied as required.

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

1. The method of saturating or coating paper or other fabric with paraffine, wax, or  
10 other coating material, which consists in passing the web of the fabric into the liquid material, allowing it to become saturated or coated with the material, then carrying the web forward through a slit, allowing only the  
15 requisite amount of material to adhere to the fabric during its passage from the liquid in the tank, substantially as herein shown and described.

2. Apparatus for coating fabrics, arranged  
20 for the immersion of the fabric in liquid coating material, and provided with means for allowing only the requisite amount of coating material to adhere to the fabric during its emergence from the liquid, substantially as  
25 specified.

3. A tank for applying melted wax, paraffine, or analogous material to paper, provided with a slit with yielding strips arranged along one or both sides of the slit for retaining the  
30 melted material in the tank and for allowing only the requisite amount of coating material to adhere to the opposite surface of the paper during its passage from the liquid in the tank, substantially as herein shown and described.

35 4. In apparatus for applying melted wax, paraffine, or analogous material to paper and other fabrics, a tank provided with an adjustable slit in one side thereof, and yielding strips arranged along opposite sides of the slit, sub-  
40 stantially as herein shown and described.

5. The combination, with the tilting tank A, of the bar D, provided with the yielding strip *b*, and the adjustable bar E, provided with the yielding strip *c*, substantially as here-  
45 in shown and described.

6. The combination, with the narrow edged bar E, of the bar D, having the groove *d*, and the yielding strip *b*, secured to the bar D, and arranged to be pushed into the groove *d* by  
50 the edge of the bar E, substantially as described.

7. The combination, with the tank A, hav-

ing an adjustable slit in the side thereof, of means for maintaining the contents of the tank in a heated condition, substantially as herein  
55 shown and described.

8. The combination, with the tilting tank A, of the bar D, provided with the longitudinal groove *d*, the yielding strip *b*, secured to the bar, the adjustable bar E, having the V-  
60 shaped edge, and provided with a yielding strip, *c*, the guide G, supporting and guiding the bar E, and the adjusting screws *g*, substantially as herein shown and described.

9. The combination, with the tilting tank  
65 A, of the bar D, provided with the longitudinal groove *d*, the yielding strip *b*, secured to the bar, the adjustable bar E, having the V-shaped edge, and provided with a yielding strip, *c*, the guide G, supporting and guiding  
70 the bar E, the adjusting-screws *g*, and steam-pipes B, for maintaining the contents of the tank in a heated condition, substantially as herein shown and described.

10. The combination, with the tilting tank  
75 A, of the bar D, provided with the longitudinal groove *d*, the yielding strip *b*, secured to the bar, the adjustable bar E, having the V-shaped edge, and provided with a yielding strip, *c*, the guide G, supporting and guiding  
80 the bar E, the adjusting screws *g*, steam-pipes B, for maintaining the contents of the tank in a heated condition, and the roller H, for guiding the web into the tank A, substantially as  
85 herein specified.

11. A tank for holding wax or other coating material, having an adjustable aperture, through which the paper is drawn, and which regulates the escape of such coating material,  
90 substantially as herein shown and described.

12. In an apparatus for preparing wax-paper, the combination, as herein described, of the following instrumentalities—viz: a shaft for holding the webbing of paper to be treated, loose or guide rollers, a wax-holding tank hav-  
95 ing an adjustable aperture through which the wax may flow and the paper is drawn, steam-pipes or other suitable heating apparatus, and a reel for drawing and winding up the waxed paper, as herein shown and described.

EDWARD G. SPARKS.

Witnesses:

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