G. W. BANCROFT.

MACHINE FOR WAXING PAPER.

No. 255,129. Patented Mar. 21, 1882.

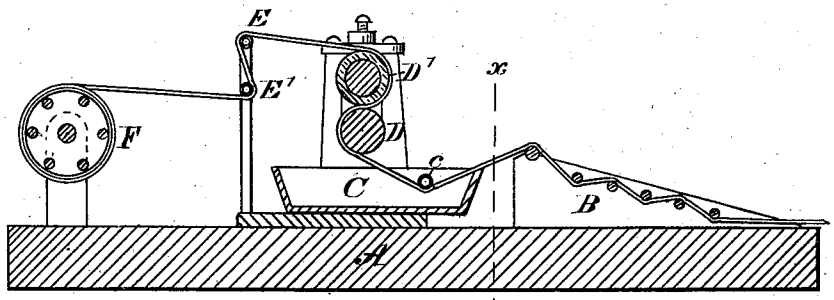


Fig. 1.

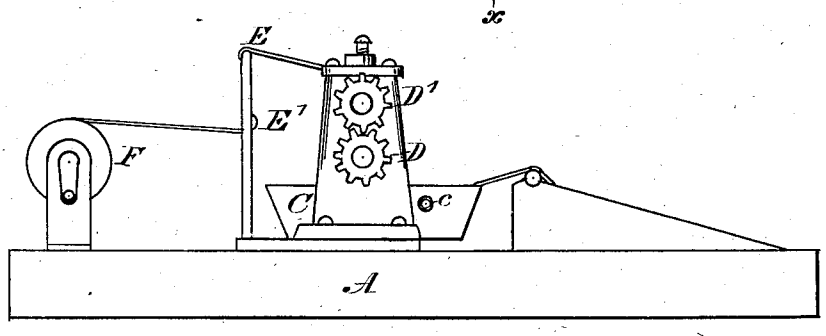


Fig 2.

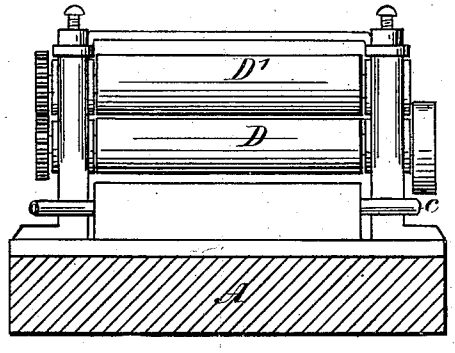


Fig 3.

WITNESSES

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GEORGE W. BANCROFT, OF LYNN, MASSACHUSETTS.

MACHINE FOR WAXING PAPER.

SPECIFICATION forming part of Letters Patent No. 255,129, dated March 21, 1882.

Application filed October 17, 1879.

To all whom it may concern:

Be it known that I, GEORGE W. BANCROFT, of Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented an Improvement in Machines for Waxing Paper, of which the following is a specification.

This invention relates to machines for waxing paper, and is an improvement upon the machines previously in use. In the machines which have been heretofore employed for waxing paper the paper was led from the roll into a pan of melted paraffine or other wax, in which a heated roller dipped, and the paper passing under this roller and through the wax was led between it and another roller placed above it, and thence to the reel, on which it was finally wound, sufficient time being given to the paper for the cooling of the wax in its passage from the upper roller to the reel.

From this description and from what follows the differences between my machine and those which have preceded it will readily be understood.

In the drawings, Figure 1 is a longitudinal central section of the machine. Fig. 2 is a side elevation thereof. Fig. 3 is an end elevation.

Like letters indicate like parts in all the figures.

A represents the platform of the machine. At one end of this platform is placed the smoothing and tension rack B, consisting of a grid of bars, through which the paper to be waxed is led from the rolls, passing alternately under and over the grids as a filling-thread is passed through warp-threads in weaving. The paper passes over the terminal bar of this grid, and is led into the waxing-pan, C. This waxing-pan is provided with a steam-pipe, *c*, which serves to heat the wax, and under which the paper is passed, so as to secure that it shall dip into the melted wax. A pair of geared rolls, D D′, are erected over this pan, not dipping into the wax. The lower one is of polished metal, and the upper one is covered with a jacket of rubber or other suitable material. The paper, after having passed through the waxing-pan, is led under the roll D, and backward between the rolls D D′, and then forward over the top of the roll D′. These rolls are adjustable toward and from each other, and one of them being provided with an elastic surface, the pressure can be very nicely regulated, so that the proper amount of melted wax which the paper has taken up shall be very nicely and smoothly compressed into the texture of the paper, while the remainder is removed. The paper, as it leaves the upper roll, is carried forward over a pair of heated bars, E E′, passing over the top one, then downward and backward, and then forward under the lower bar, and thence proceeding to the reel F, on which it is wound. By this series of machinery the paper is first smoothed in the grid B, then thoroughly immersed in the melted wax, and then the melted wax is uniformly and perfectly rolled into the texture of the paper, and afterward, by the passage over the heated bars E E′, both sides of the paper are thoroughly smoothed and ironed while hot, and any superfluous wax removed from both surfaces of the paper.

It is obvious that the bars E E′, located between the rollers and the reel, may be employed indifferently with any rollers, and will serve to some extent their purpose, whether the lower roller of the rolling train dips into the waxing-pan or not, and whether it is heated or not, and that also the said bars E E′ would perform their function to some extent without being heated; and it is also obvious that the covering of the roll might be of some other substance than vulcanized rubber. The most convenient and beneficial construction of the machine is, however, to make it as I have described.

In waxing tissue-paper of light weight it is not necessary to pass the paper through the ironing device, as above described, as it is sufficiently polished by being passed over one of the two bars E E′.

It is obvious that in lieu of the pair of bars E E′ serving to smooth and clean the paper, a pair of calender-rolls, heated or not, may be employed, or, in case of moderately heavy paper, a pair or grid of blunt or obtuse-angled scrapers, over which the paper should pass with only slight deflections; but these are clearly similar to what I have described.

It will be observed that the grid B gives

smoothness and tension to the paper while waxing, and thus exercises an important influence on the quality and uniformity of the product, in connection with the straining devices of rolls, bars, and reel, or each of them.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of the metallic roller D and the elastic-surfaced roller D′, located over the waxing-pan C, with the waxing-pan C, and with the steam-pipe, located near the bottom of the same, and operated together substantially as described.

2. The pressure-rolls D D′, located above the waxing-pan, in combination with said pan, and with the steam pipe or bar *c*, submerged in the wax, and beneath which the paper passes from the grid to the pressure-rolls, substantially as set forth.

3. As a paper-waxing apparatus, the combination of a heated waxing-pan, provided with a bar beneath its surface, with a pair of distributing, compressing, and calender rolls, located above or nearly over said pan, and an independent smoothing and cleaning device located on the delivery side of said rollers, substantially as described.

4. The combination, in a machine for waxing paper, of the grid B with the bar *c*, pan C, and rollers D D′, substantially as and for the purpose described.

5. The combination, in a machine for waxing paper, of the grid B with bar *c*, pan C, and smoothing device E E′, substantially as described.

6. The combination, in a machine for waxing paper, of the grid B with bar *c*, pan C, and reel F, substantially as described.

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Witnesses:
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