

(No Model.)

C. H. VAN BENTHUYSEN & A. BOTT.
Machine and Process for Enameling, Coating, and
Calendering Paper and Paper Board.
No. 230,366. Patented July 20, 1880.

Fig. 1.

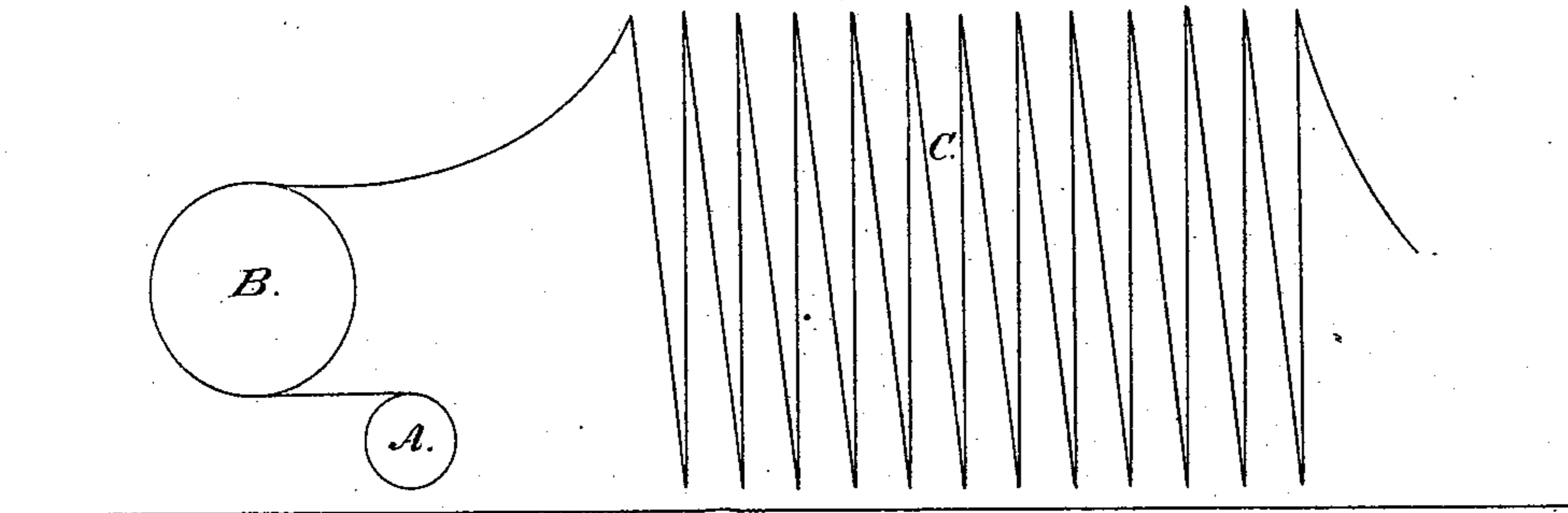
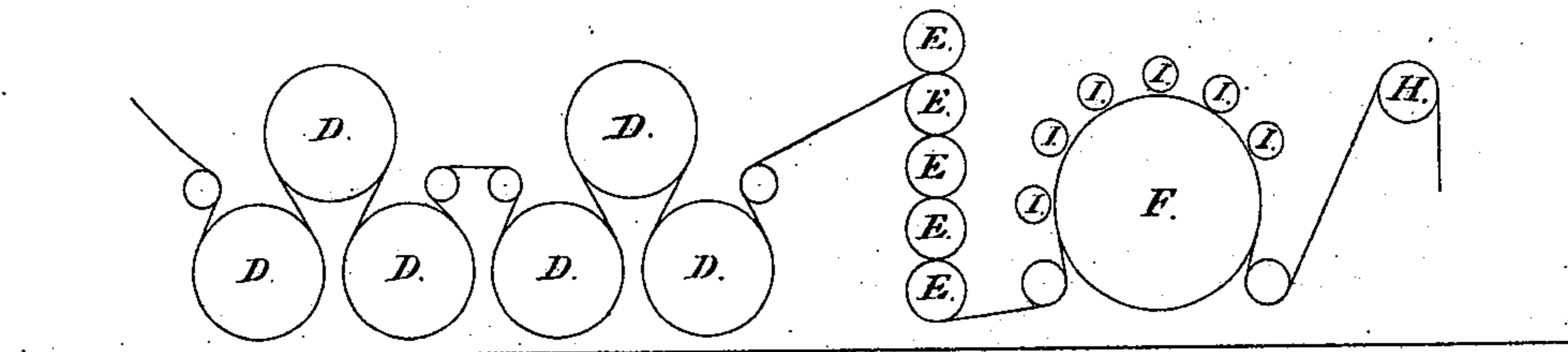


Fig. 2.



Witnesses:

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MACHINE AND PROCESS FOR ENAMELING, COATING, AND CALENDERING PAPER AND PAPER-BOARD.

SPECIFICATION forming part of Letters Patent No. 230,366, dated July 20, 1886.

Application filed June 24, 1880. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. VAN BENTHUYSEN and ARTHUR BOTT, of the city of Albany, county of Albany, State of New York, have made certain new and useful Improvements in Machines and Processes for Enameling, Coating, and Calendering Paper and Paper-Board, of which the following is a full and exact description, reference being made to the accompanying drawings, in which—

Figure 1 shows a side elevation of a portion of the invention, and Fig. 2 a similar view of the principal parts of the apparatus.

The object of our invention is to combine several machines, so as to carry out the several processes of coating or applying colors, setting the colors, drying them in, calendering and brushing the paper, and then, if required, feeding it to a cutting-machine.

In the drawings, A shows a roll of paper or card-board to be coated on the grounding-machine B, which is of ordinary construction and need not be particularly described. After the paper has received the surface of the desired color or tint the web is led over the hanging-up machine C, which is of the ordinary construction, to allow the coloring-matter to set. The web is then led over the drying-cylinders D, which are made up of a suitable number of hollow drums heated by steam, the temperature being easily regulated so as to meet all the requirements of each particular case. The paper or board passes these directly to the calender-rolls E, in passing through which it receives a smooth flat surface. It then passes next over the drum F, around the circumference of which are a series of brushes, I, adjustable to and from the cylinder F. These brushes are made of bristles, hair, sheep, chamois, or lamb skins, felt, fur, or any other suitable material which by friction on a coated surface will produce a finish.

The cylinder F moves at a slow rate of speed, and the brushes or friction-producing appliances at a rapid rate. The paper then passes to a cutting-machine, H, of ordinary construction, where it is cut into proper lengths. Thus by one operation we arrive at a result which heretofore has only been reached partially by three or more distinct processes and on different machines.

By the use of the large drum or cylinder, in our arrangements with brushes, the number of which can be increased as the brilliancy may demand, we receive a product which, as to finish and printing qualities, has heretofore not been attained.

By the method now in use the enameling which gives luster to the surface is afterward brought out and brightened by passing the sheets between iron, zinc, or steel plates through heavy calenders, crushing thereby the particles of coloring-matter completely, and in most cases leaving on the surface of the paper particles which are afterward taken up by the stone or plate or type, causing great annoyance and delay to workmen, whereas by our method a paper is produced which does not depend for its luster on a pressure between plates and calenders, thereby creating a surface at once high in luster and free from any crushed substances and metallic particles, leaving a delicate velvety surface, which readily takes even the finest lines.

In the manufacture of the so-called plated papers without any enameling, we pass the paper from the calender-rolls E to the cutting-machine H.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. The process herein described for coating, grounding, enameling, and finishing paper and card-board at one and the same operation by arranging the several separate machines, three or more, so as to act consecutively and continuously upon the fabric, substantially as set forth and described.

2. The combination of the coating-machine B, the hanging-up machine C, and the drying-rolls D, as described.

3. The combination of the drying-cylinders D, the calender-rolls E, and the finishing-machine F, with or without the cutting-machine H, substantially as set forth.

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