

L. G. CHAPUT, W. & J. BRAIDWOOD.

Bronzing Machines.

No. 144,741.

Patented Nov. 18, 1873.

Fig. 1.

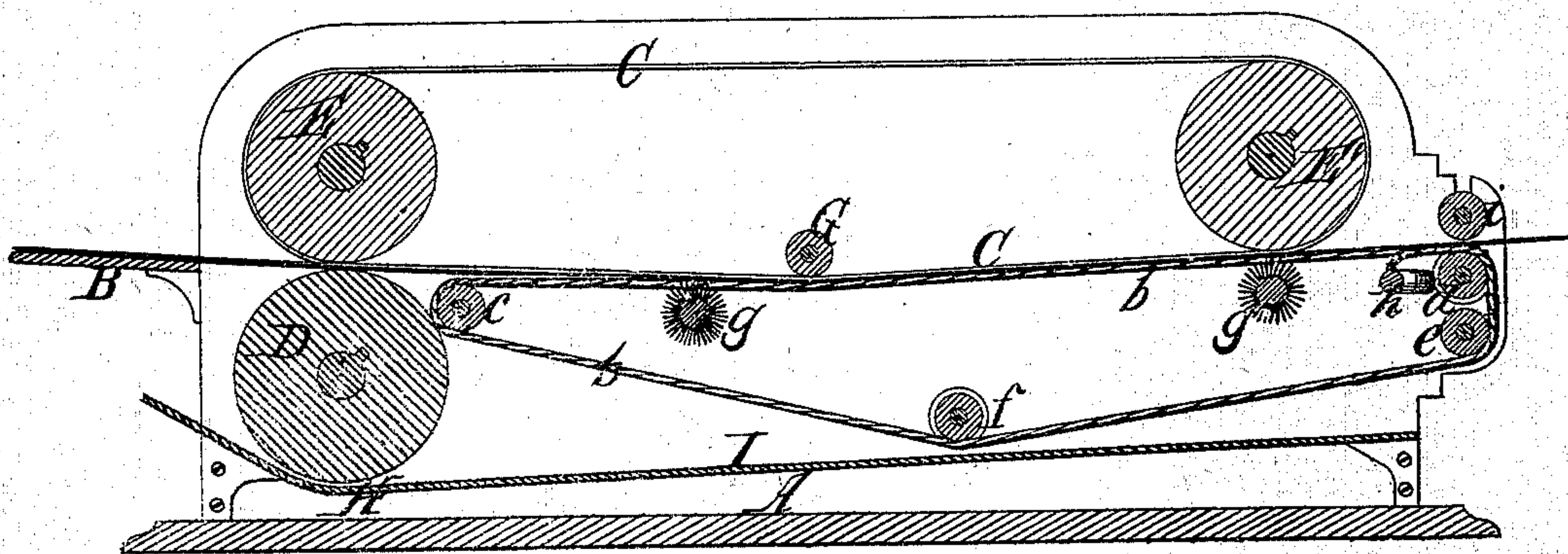
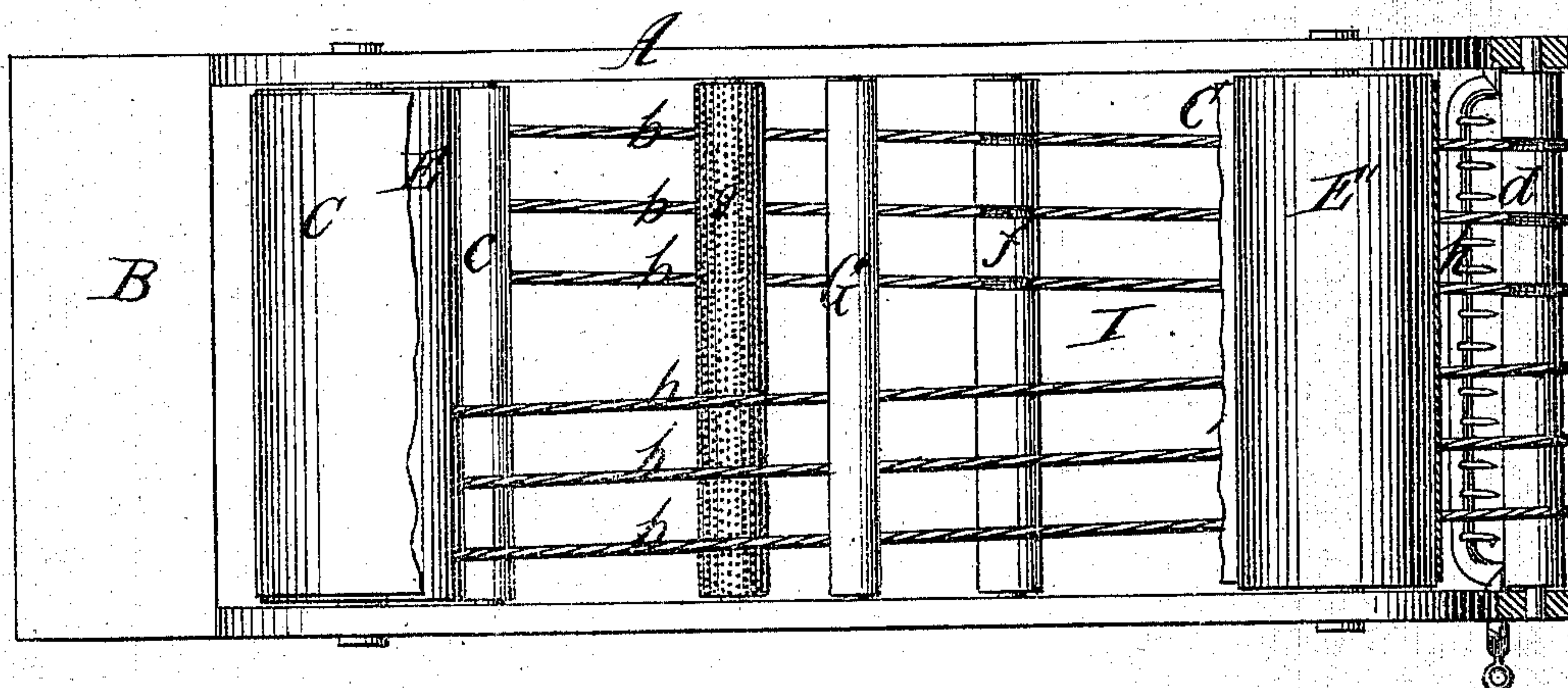


Fig. 2.



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IMPROVEMENT IN BRONZING-MACHINES.

Specification forming part of Letters Patent No. 144,741, dated November 18, 1873; application filed
August 7, 1873.

To all whom it may concern:

Be it known that we, LOUIS G. CHAPUT, WILLIAM BRAIDWOOD, and JOHN BRAIDWOOD, of the city, county, and State of New York, have invented a new and useful Improvement in Bronzing-Machines; and we do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming a part of this specification, in which drawing—

Figure 1 represents a longitudinal vertical section of our invention. Fig. 2 is a plan or top view of the same.

Similar letters indicate corresponding parts.

This invention relates to a bronzing-machine in which the material or web to be bronzed is fed in between an endless apron and a bronzing-roller, the surplus bronze being swept off by means of brushes, and deposited on an inclined plane leading down to the bronzing-reservoir, whence the same is taken up by the bronzing-roller to be applied over and over again. While the web is being acted on by the brushes it is supported by cords which extend in oblique directions under the endless apron, being held in position by grooved rollers, so that the brushes are enabled to reach every part of the surface of the web. With the oblique cords is combined an adjustable comb, to prevent the web on its passage out of the machine from catching under any of the cords. With the comb and the cords is combined a delivery-roller, to insure the discharge of the web.

In the drawing, the letter A designates a box, the sides of which form the working parts of our machine. To one end of this box is secured a table, B, over which the web or the material to be bronzed is fed. On being passed into our machine, the web is caught between the endless apron C and the bronzing-roller D, that surface of the web on which the bronze is to be applied being turned downward. The endless apron C is stretched over two rollers, E E', and its lower branch is slightly depressed by an intervening roller, G. The bronzing-roller D is covered with velvet, felt, or other suitable material, and it dips into the fountain

H, which contains the powdered bronze, and the bronze taken up by said roller is transferred to the surface of the web, where it adheres to those portions that have previously received an impression with some adhesive substance. On leaving the bronzing-roller the web passes upon a series of cords or strings, *b*, which are stretched over rollers *c d e f*, two of which are so situated that the upper branches of said cords lie close to the lower branch of the endless apron C, and consequently the cords travel with the same surface velocity as the surface of the apron, and the web, as it passes upon the cords, is carried along by the motion of the apron, and by that of the cords, and at the same time said apron supports the web against the action of the brushes *g*, which are situated beneath the cords. The object of these brushes is to sweep off the surplus bronze from the web, and they act on the web through between the cords. If the cords extend in a direction parallel to the motion of the web, they prevent the brushes from acting on all parts of the web, and the surplus bronze is not swept off from those portions of the web which are covered by or opposite the cords. This difficulty we have overcome by providing each of the string-rollers *d* and *f* with a series of grooves, (see Fig. 2,) so that the strings or cords can be made to run through the machine in oblique directions, and by employing two or more brushes those parts of the web which are not touched by one brush will be reached by another, and the surplus bronze is swept off uniformly over the entire surface of the web. As the web passes the roller E' of the apron, it is carried along merely by the cords, and if one of the corners of said web should turn down it would be caught between the cords and the roller *d*, whereby the same would be liable to get torn, and the operation of the machine would be interrupted. This difficulty we have overcome by arranging beneath the cords, in front of the roller *d*, a comb, *h*, the teeth of which are curved, and the head of which consists of a rocking crank-shaft, so that the curved backs of the teeth can be made to project above the cords to a greater or less extent. By these means the web is prevented from catching under the cords, and it is safely

guided out over the roller *d*. If the comb *h* is not required, its teeth can be turned down out of action. On the roller *d* rests the delivery-roller *i*, which bears down on the same by its inherent gravity, and revolves by contact with the same, or with the web resting thereon. This roller insures the discharge of the web. The surplus bronze which is swept off from the web by the action of the brushes drops down upon an inclined plane, *I*, which leads into the fountain *H*, so that the surplus bronze is returned automatically to the fountain, and the machine can be operated for a long time without requiring a fresh supply of bronze.

In practice, the rollers *E E'*, which carry the endless apron, the bronze-roller *D*, and the string-rollers *c, d, e*, and *f*, will be geared together so that they move with a uniform superficial velocity, while the brushes *g* may be made to revolve in the same direction with the string-rollers, but with a greater superficial

velocity; or they may be made to revolve in an opposite direction to said string-rollers.

What we claim as new, and desire to secure by Letters Patent, is—

1. The cords or strings *b*, running in an oblique direction by means of grooved rollers *d f*, in combination with the endless apron *C*, bronzing-roller *D*, and brushes *g g*, substantially as shown and described.

2. The comb *h*, in combination with the oblique cords or strings *b*, delivery-roller *i*, and apron *C*, substantially as and for the purpose set forth.

3. The combination of the inclined plane *I*, fountain *H*, bronzing-roller *D*, apron *C*, cords *b*, and brushes *g*, constructed and arranged substantially as shown and described.

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