W. BRAIDWOOD.

Gilding-Machine.

No. 162,892. Patented May 4, 1875.

Fig. 1.

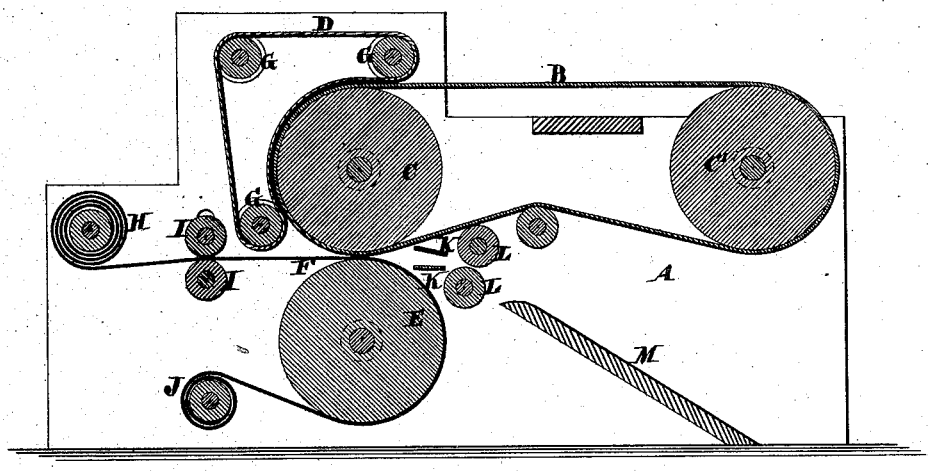
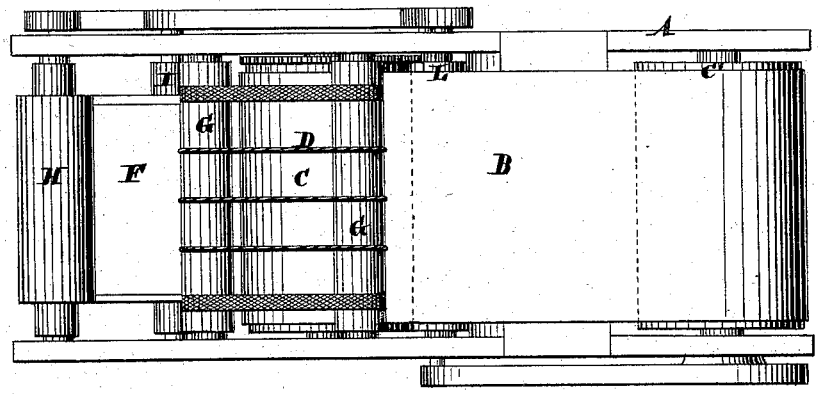


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM BRAIDWOOD, OF NEW YORK, N. Y.

IMPROVEMENT IN GILDING-MACHINES.

Specification forming part of Letters Patent No. **162,892**, dated May 4, 1875; application dated November 28, 1874.

To all whom it may concern:

Be it known that I, WILLIAM BRAIDWOOD, of the city, county, and State of New York, have invented a certain new and useful Improvement in Machines for Leaf-Gilding, of which the following is a specification:

This invention is illustrated in the accompanying drawing, in which Figure 1 represents a longitudinal central section. Fig. 2 is a plan or top view.

Similar letters indicate corresponding parts.

The invention relates to a machine for applying gold and other leaf to paper, &c., the paper having first been impressed with "size" in the place or places intended to receive the leaf. The machine is constructed essentially of one or more feed-aprons, combined with pressure-rollers, one of which carries a sheet containing leaf, in such a manner that as the paper passes between the pressure-rollers the leaf is given off, and is acquired by the paper. With the leaf-sheet are combined smoothing-rollers, by the action of which the leaf is caused to be presented to the paper in a smooth condition. With the pressure-rollers are combined separating-rollers, the superficial velocities of which are such, relatively to that of the pressure-rollers, that by their action the several sheets of paper are separated when the same are connected together by the leaf, as hereinafter explained. With the pressure-rollers are combined, also, guide-pieces, by means of which the sheet of paper is directed to the separating-rollers.

In the drawing, the letter A designates the frame-work of my machine, provided with journal-boxes, and forming the bearings for the several rollers and parts, hereinafter referred to. B designates one of the feed-aprons, which passes over rollers C C′, so disposed that the apron occupies a horizontal position. The sheet of paper, suitably prepared or impressed with size, is laid on the apron B, and with its impressed side uppermost. By the apron B the sheet is carried forward, so that it is caught by the second apron D, which is located at one end of the apron B, and passes round the pressure-roller C with it. The roller C revolves with its fellow pressure-roller E, and over the latter passes a sheet, F, containing gold or other leaf, so that when, by the two aprons B D, the sheet of paper is carried between the rollers C E the leaf is given off and pressed upon the paper, to which it adheres in the proper place or places.

The feed-apron D is preferably made of cords or bands, whereby the size impression of the paper is not liable to become disturbed, while between the cords the attendant is enabled to observe the work. The apron D passes over rollers G, which are provided with guide-grooves for the bands or cords, and which are so located that the apron passes round the pressure-roller C, with a return bend, so that the sheet of paper can pass between and with the two aprons. The leaf-sheet F is taken from a roll, H, passes through smoothing-rollers I, over the pressure-roller E, and is taken up by a roll, J. The journals of the smoothing-rollers I are in slots, as shown in Fig. 1, the rollers being revolved by the passage of the leaf-sheet, so that the said rollers I are capable of a vertical movement, and the inherent gravity of the upper roller is brought to bear on the lower one.

In the operation of unrolling the leaf-sheet F from the roll H, it happens that the leaf at intervals is or becomes divided, so as to create a void space. This it is necessary to fill in order to avert the occurrence of a similar space on the sheet of paper passing through the machine, which is done by throwing loose leaf upon the leaf-sheet F at the point of the space or spaces, as fast as the same are observed by the attendant; but, owing to the rapidity with which the leaf-sheet travels, the attendant has not always sufficient time to spread or get the leaf smooth. This is accomplished by the rollers I, which smooth out every particle of leaf on the sheet F, so that it presents an even surface to the paper passing between the pressure-rollers. By reason of this smoothing operation the leaf is also prevented from coming in contact with the lower one of the apron-rollers G.

When the sheet of paper issues from between the pressure-rollers C E it is received between two guide-pieces, K, one of which scrapes the feed-apron B at that point, so that the paper is prevented from following it, while the other piece K supports and directs the paper to and between the separating-rollers

L. These rollers L are so connected that their superficial velocities are greater than that of the pressure-rollers C E. If the paper is in small sheets, such as, for instance, cards or circulars, and the gold or other leaf is in a continuous piece or in small pieces, which happen to embrace two sheets of paper, the latter become connected together, and if allowed to emerge in this condition the paper would eventually choke up the machine. By the action of the separating-rollers L the leaf is torn at the point of the divisions of the sheets of paper when the divisions arrive just beyond the axis of the pressure-rollers C E; or, in other words, each sheet is successively jerked away from the other or next sheet, and by this operation the several sheets are deposited in the delivery-box M upon each other. One of the separating-rollers L is revolved by a band passing over a pulley on the roller-shaft, while the other revolves simply by frictional contact.

If the paper is in a continuous sheet, such as paper-hangings, the separating-rollers L may be dispensed with; but I prefer to use them for the purpose last described. I can also dispense with the feed-apron B and roller C′, if desired, and substitute therefor a suitable feed-board to feed the sheets between the roller C and feed-apron D, without departing from my invention.

The pressure-rollers C E are geared together, so that they revolve with equal superficial velocities. The feed-apron D is driven by contact with the apron B or roller C, and travels with a like speed, whereby neither apron is liable to slip, so as to obliterate the size.

The pressure-roller C, if used without the apron B, is covered with rubber or other elastic material. The roller E is covered with metal, so as to present a hard, smooth surface for pressing the leaf.

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

1. In a machine for leaf-gilding, the feed-apron D, in combination with the pressure-rollers C E and leaf-sheet F, substantially as described.

2. In a machine for leaf-gilding, the combination, with the apron D, rollers C E, and leaf-sheet F, of the feed-apron B and apron-roller C′, substantially as described.

3. In combination with the pressure-rollers C E, the separating-rollers L, geared so as to have a greater surface speed than the pressure-rollers C E, substantially in the manner and for the purpose specified.

4. The guide-pieces K K, in combination with the pressure-rollers C E and separating-rollers L, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 20th day of November, 1874.

WM. BRAIDWOOD. [L. S.]

Witnesses:
W. HAUFF,
CHAS. WAHLERS.