(No Model.) 2 Sheets—Sheet 1.

J. McCOY.

MACHINE FOR BLENDING COLORS ON WALL PAPER.

No. 596,905. Patented Jan. 4, 1898.

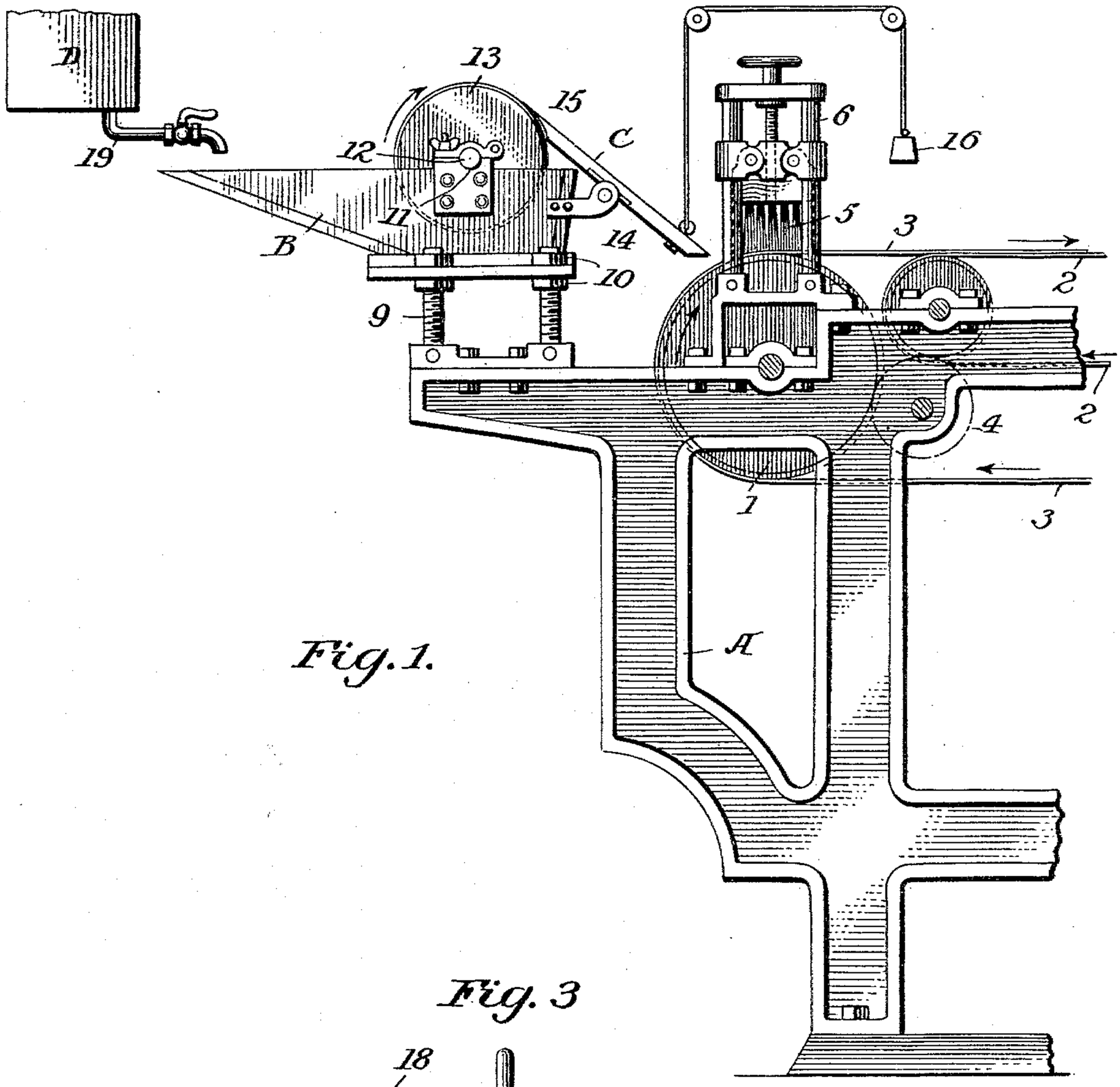
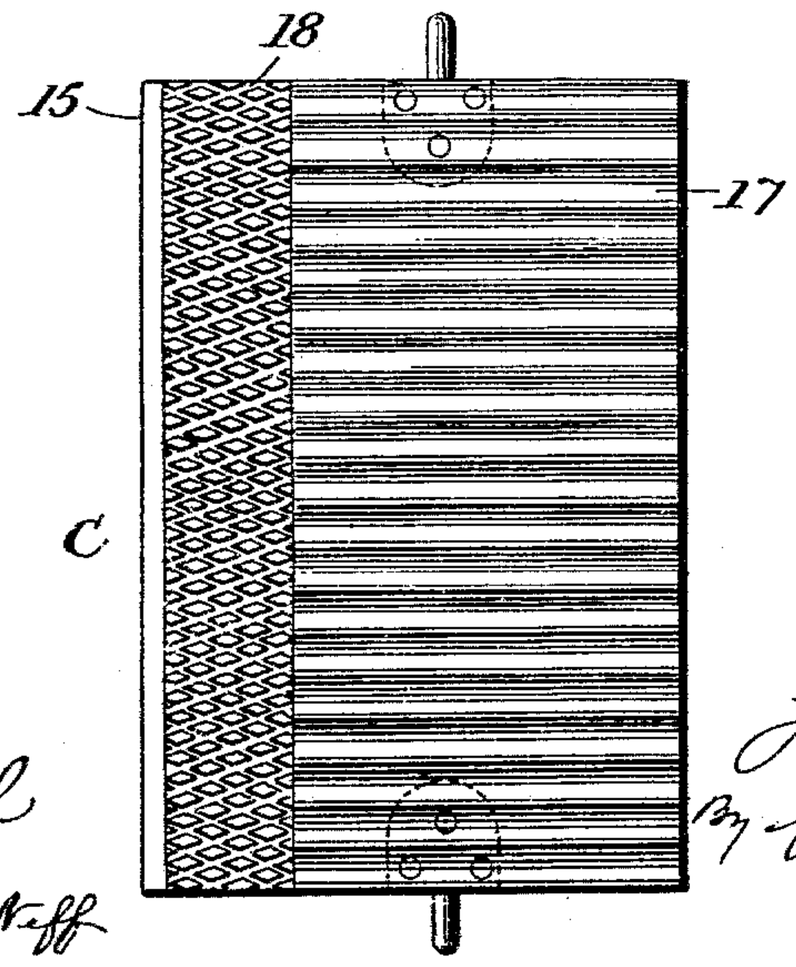


Fig. 1.

Fig. 3



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

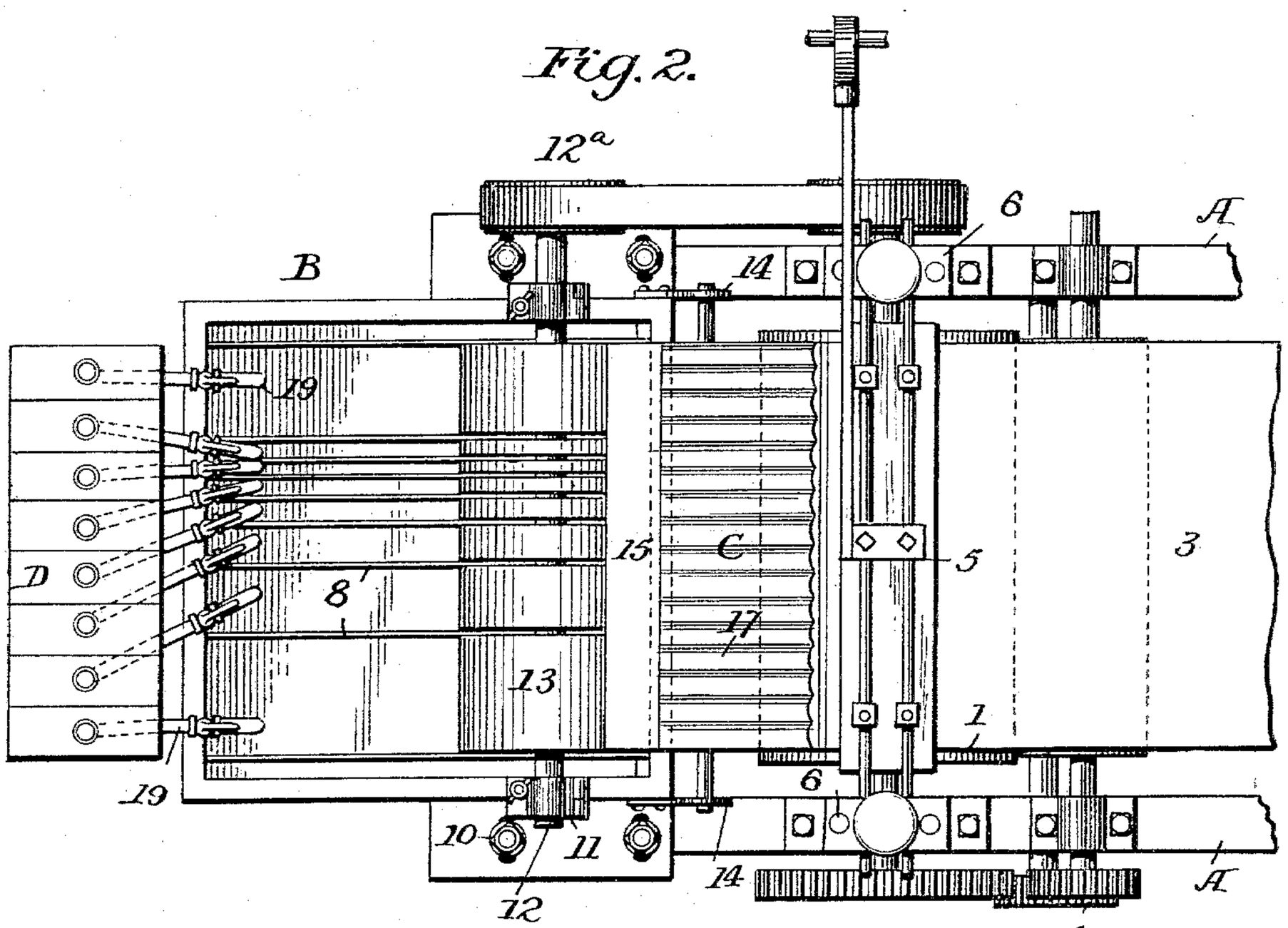
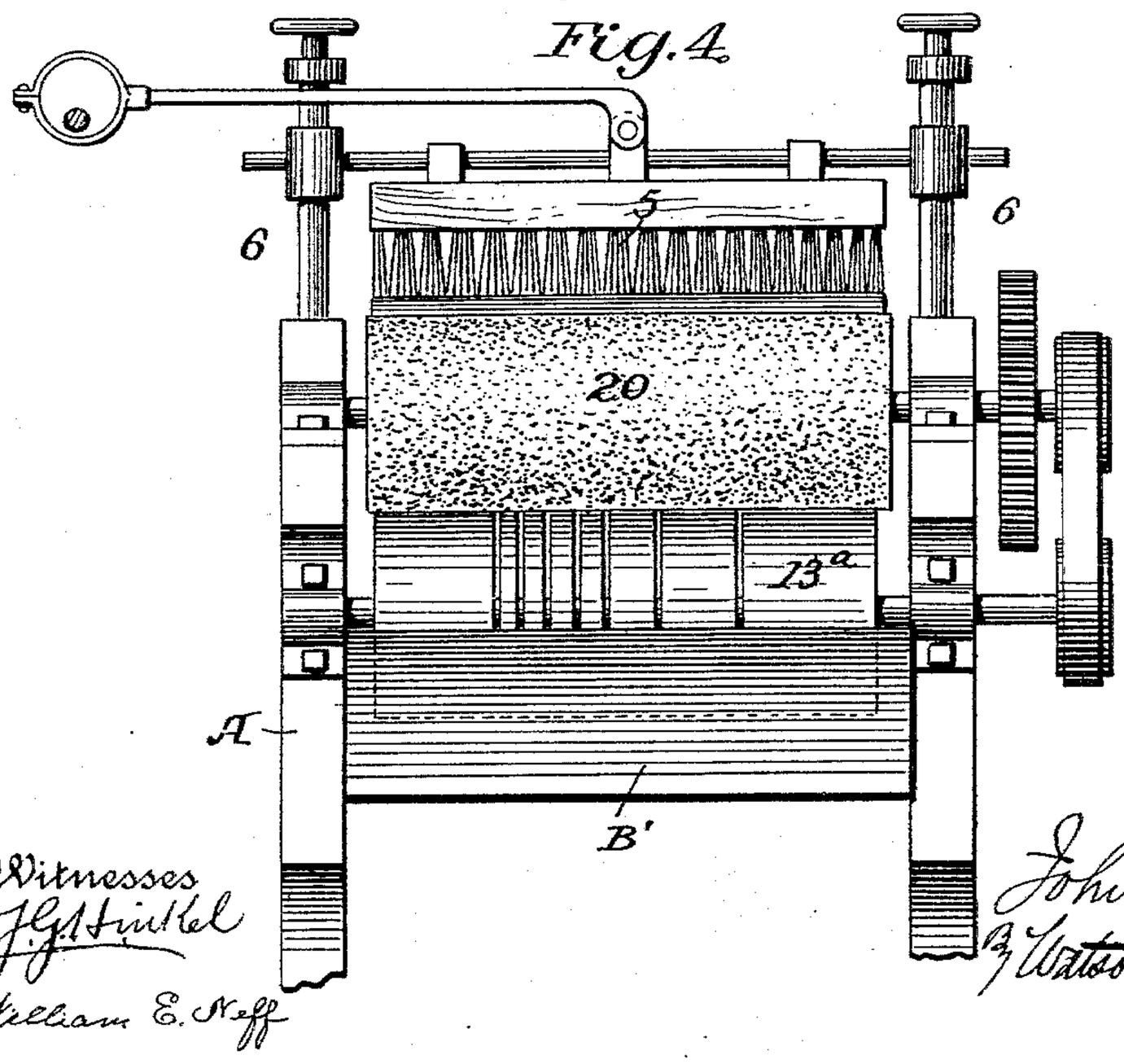


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN McCOY, OF YORK, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO W. F. BAY STEWART, OF SAME PLACE.

MACHINE FOR BLENDING COLORS ON WALL-PAPER.

SPECIFICATION forming part of Letters Patent No. 596,905, dated January 4, 1898.

Application filed April 3, 1897. Serial No. 630,642. (No model.)

To all whom it may concern:

Be it known that I, JOHN McCOY, a citizen of the United States, residing at York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Blending Colors on Wall-Paper, of which the following is a specification.

This invention consists in improved mechanism for blending colors on wall-paper, particularly for the manufacture of blended borders, on which the colors are graduated from a dark shade in the middle to a light shade on the margins or from a dark shade at one side of the border to a light shade at the other.

By the present invention the colors are blended more or less before being applied to the paper, and they are applied in such a manner that the operation may be completed before the colors set.

In the accompanying drawings, Figure 1 is a side elevation of one end of a machine for laying on colors on wall-paper, sufficient being shown to illustrate the invention. Fig. 2 is a plan view of the same. Fig. 3 is a view of a modification; and Fig. 4 is an end view of a machine, illustrating the common means for laying on colors.

Referring to the drawings, A indicates the main frame of the machine. Mounted on this frame is a large roll 1, around which passes an apron or belt 2, which supports the paper strip 3 while the color is being applied and brushed over its surface. The apron passes around a roll 4, while the paper passes beneath said roll to roll 1. Above the roll 1 is a brush 5, supported in a frame 6 and adapted to be rapidly vibrated transversely of the moving strip of paper. Other brushes operated in a similar manner may be used in addition to the brush 5, if desired.

The above elements are common in machines for coating paper and are not of my invention, and for that reason need not be more particularly described.

Adjustably mounted on the frame A at the end of the machine is a tank B, divided into a series of compartments by partitions 8. The tank is preferably adjustable vertically, being supported, as shown, upon threaded rods or standards 9, the adjustment being effected by means of nuts 10. Mounted in bearings 11 in the frame is a shaft 12, which is driven by a pulley 12^a. Upon the shaft are a number of narrow rolls 13, corresponding to and fitting within the several compartments of the trough. The different compartments are designed to hold different shades of color, and the several rolls are designed to pick up the color and carry it to an inclined platform or "doctor," over which the colors run onto the paper. As shown, the doctor C is an inclined platform pivoted centrally on arms 14. Its upper edge is provided with a plate 15, which is caused to bear constantly upon the rolls by means of a weight 16, which draws up the opposite end. Any suitable weight or spring will answer for this purpose. The doctor is provided with a series of grooves 17, and between the upper ends of the grooves 17 and the scraper 15 there are preferably two series of grooves 18 crossing each other, so as to leave intermediate diamond-shaped projections, as shown in Fig. 3. In some instances, however, these grooves 18 may be omitted and a plain surface substituted. In the rear of the color-trough B are a series of reservoirs D, each provided with a valved pipe 19, so arranged as to carry the color from a reservoir D to its corresponding compartment of the trough B.

The operation of the invention is as follows: The rolls 13 are kept constantly supplied with colors from the trough B, and as they rotate in the direction of the arrow the colors are scraped off by the plate 15 and run down over the platform C. In passing over the plate 15 and transverse grooves 18 the colors begin to mix and blend at their adjoining edges and when they reach the grooves 17 they are more or less blended. They then run down through the grooves 17 and drop on the moving paper immediately before it passes under the transversely-moving brush or brushes 5, which completes the blending operation at once and before the colors set.

It will be evident that instead of the grooves 17 and 18 other arrangements of grooves or projections may be placed upon the platform for the purpose of mixing or blending the colors on their way from the rolls 13 to the paper.

In Fig. 4 I have illustrated a portion of the machine at present in use for the purpose of applying blended colors to wall-paper borders. Referring to this figure, B′ indicates the color-trough, which is divided into compartments similar to those shown in Fig. 2, in which run a series of rollers 13ª. The rollers 13ª carry the color up to a revolving cylindrical brush 20, which brush takes the color and deposits it upon the moving paper strip as it passes over the roll 1. This arrangement is objectionable for several reasons. The bristles in the revolving brush 20 soon become matted and they deposit or smear the colors on the paper very unevenly, so that the vibrating brush cannot distribute them properly. Furthermore, the colors are put on in distinct lines of different shades, as the rotating brush does not blend them in carrying them to the paper. With my improved machine the colors are applied in uniform quantities throughout the length of the paper strip, and they are blended partially before being applied and the amount of blending to be performed by the transverse brushes is reduced, so that the brushes accomplish it perfectly.

The principal feature of my invention is the inclined platform combined with means for delivering a series of colors thereto in such a manner that they run over the platform side by side and mingle at their edges, said platform being arranged to deliver the blended or partially-blended colors onto a moving strip of paper. The platform may have a perfectly plain surface, in which case the colors would form a continuous sheet of fluid across the platform, the different colors mixing and blending at their contacting edges. I prefer, however, to obstruct the flow of the colors on the platform by means of depressions or projections in order to more thoroughly blend them as they run over it. In all cases the colors are more or less blended before they leave the platform, and the brush is only required to complete the operation instead of being the sole blending device, as in prior machines.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a machine for blending colors on wall-paper, means for moving a strip of paper, a series of color-troughs, and a blending-surface over which the liquid colors pass and upon which they flow together and blend at their edges in transit from the troughs to the paper, substantially as described.

2. In a machine for blending colors on wall-paper, means for moving a strip of paper, a series of color-troughs, a blending-surface over which the liquid colors pass and upon which they flow together and blend at their edges in transit from the troughs to the paper, and means for feeding the colors to said surface uniformly and continuously, substantially as described.

3. In a machine for applying and blending colors on wall-paper, means for moving a strip of paper, an inclined platform having its lower edge above said paper, and means for delivering a series of different shades or colors side by side on said platform, said platform having a surface upon which the colors may spread laterally, whereby the different colors are blended at their adjoining edges in running over the platform, substantially as described.

4. In a machine for blending colors on wall-paper, means for moving a strip of paper, an inclined platform having its lower edge above said paper, and means for delivering a series of different shades or colors side by side on the platform, said platform having its upper surface constructed to partially interrupt the flow of the colors, whereby they are more effectually blended at their adjoining edges in running over the platform, substantially as described.

5. The combination with means for moving a strip of paper, of a trough provided with a plurality of compartments, a series of rollers arranged for lifting the colors from the said compartments, a scraper arranged to take the color from the rolls and an inclined platform over which the colors run from the scraper to the paper, whereby the colors are blended upon the platform before reaching the paper.

6. The combination with means for moving a strip of paper, of a trough having a series of compartments, a series of rolls running in said compartments, a scraper taking the color from the rolls, an inclined platform over which the colors run from the scraper to the paper, and a transversely-moving brush adjacent to the point of application of the color for spreading the same.

7. The combination of means for moving a strip of paper, a trough having a series of compartments, a series of rolls running in said compartments, a platform having a scraper for removing the color from the rolls, and a series of grooves adapted to blend the colors as they pass over the platform to the paper.

8. The combination of means for moving a strip of paper, a color-trough having a series of compartments, a series of rolls in said compartments, an inclined platform having a scraper at its upper edge bearing on said rolls, two series of diagonal grooves 18, and a series of longitudinal grooves 17, substantially as described.

9. The combination with the main frame, of means for moving a strip of paper, a color-trough adjustably mounted on said frame and having a series of compartments, a series of rolls in said compartments, a pivoted inclined platform having a scraper at its upper edge yieldingly pressed on said rolls and having its lower edge in proximity to said paper, and a transversely-moving brush operating to spread the color on the paper immediately after it falls from the platform, substantially as described.

10. The combination with the main frame,

of means for moving the strip of paper, a color-trough provided with a series of compartments, a series of rolls arranged to lift the colors from said compartments, an inclined platform having a scraper at its upper edge bearing on said rolls, and adapted to deliver the color to the paper, and a series of tanks provided with valved outlets for supplying the respective color-compartments, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN McCOY.

Witnesses:
J. C. EISENHART,
O. W. KELLER.