(No Model.)

G. L. HILLE & G. A. & M. A. AUDSLEY.

MACHINE FOR COLORING, PRINTING, OR ORNAMENTING INDIA RUBBER BALLS.

No. 455,877. Patented July 14, 1891.

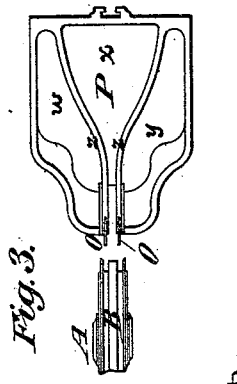

Fig. 3.

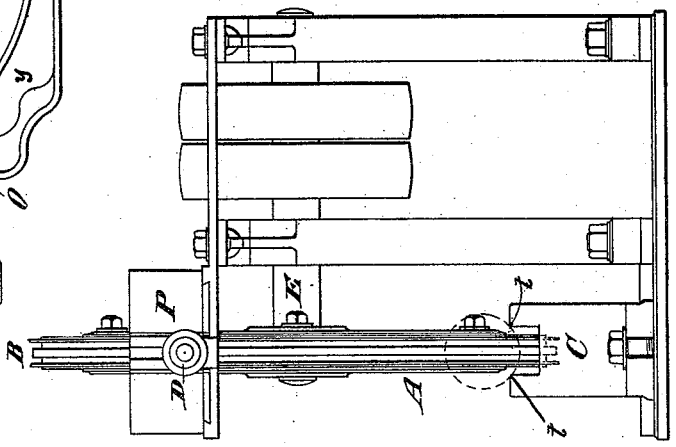

Fig. 2.

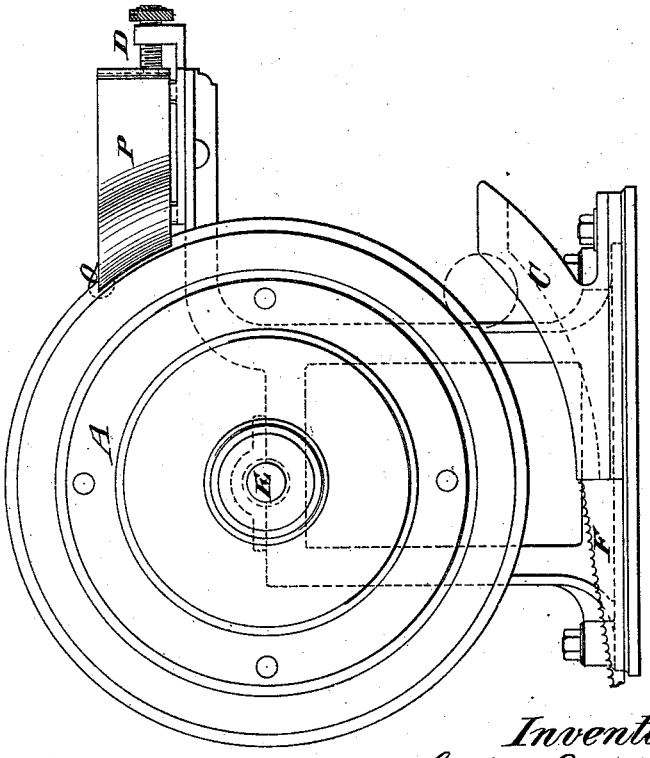

Fig. 1.

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UNITED STATES PATENT OFFICE.

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MACHINE FOR COLORING, PRINTING, OR ORNAMENTING INDIA-RUBBER BALLS.

SPECIFICATION forming part of Letters Patent No. 455,877, dated July 14, 1891.

Application filed March 9, 1891. Serial No. 384,225. (No model.) Patented in England November 16, 1889, No. 18,344; in France November 16, 1889, No. 201,985; in Germany November 17, 1889, No. 54,063; in Belgium November 22, 1889, No. 88,557; in Italy March 11, 1890, No. 23,264; in Austria-Hungary April 2, 1890, No. 49,652 and No. 7,578, and in Spain April 22, 1890, No. 10,558.

To all whom it may concern:

Be it known that we, GUSTAV LOUIS HILLE, GEORGE ASHDOWN AUDSLEY, and MAURICE ASHDOWN AUDSLEY, all subjects of the Queen of England, and residing at London, England, have invented new and useful Improvements in Machines for Coloring, Printing, or Ornamenting India-Rubber Balls, (for which we have obtained foreign patents in England November 16, 1889, No. 18,344; in France November 16, 1889, No. 201,985; in Germany November 17, 1889, No. 54,063; in Belgium November 22, 1889, No. 88,557; in Italy March 11, 1890, No. 23,264 46/53 49; in Austria-Hungary April 2, 1890, No. 49,652 and No. 7,578, and in Spain April 22, 1890, No. 10,558,) of which the following is a specification.

The invention consists of a machine for the painting, ornamenting, and lining of india-rubber, celluloid, and any other description of elastic balls, either hollow or solid.

Figure 1 of the accompanying drawings represents a side elevation of the machine; Fig. 2, a front view of the same, and Fig. 3 a plan view of the box which contains the paint or coloring material and of part of the circular carrier or disk by which the said material is applied.

E is a properly-supported axle or shaft to be driven by hand or power, and to which is attached the circular carrier or disk A, having on its outer edge or periphery any description of painting-form B, such as a line, arrangements of lines, bands, or ornamental devices, cut from a surface on the said edge or periphery adapted to the form of the ball to be ornamented. The periphery of the carrier or disk may be plain for the purpose of transferring to the ball a single band of color, or it may have a single line, or any number of lines, or lines and bands combined, as may be required to produce the design or pattern aimed at. The lines or bands are carried round the periphery of the circular disk. The carrier or disk may have any number of rings adjusted to it, each having a different painting form or arrangement of lines or bands to suit different sizes and descriptions of balls.

The paint or coloring-matter required to be transferred to the ball by the painting form or lines, bands, and other ornaments on the periphery of the said carrier or disk is laid on the said painting-form by means of a box or boxes P, open at top and furnished with openings or slits at one end, into which the lines and bands of the painting-form enter and fit accurately. By this arrangement the edges of the lines and bands come in contact with the paint or coloring-matter contained in the box and passing downward through the bottom plate of the said box as the carrier or disk revolves, have all surplus paint or coloring-matter removed and only sufficient left upon them to properly line or ornament the ball. The said box or boxes are divided internally into as many chambers or paint-receptacles *w x y*, Fig. 3, as there are lines and bands on the periphery of the revolving carrier or disk or as there are colors required. The chambers are divided by partitions *z z*, Fig. 3, of the same depth as the box, and the said partitions carry at their outer or upper edges thin plates or feathers O, of metal, which project from them and enter within the sinkings or spaces between the lines and bands of the painting-form, and so effectually prevent any admixture of the colors or paints contained in the different chambers and which may be scraped off from the revolving painting-form by the edges of the partitions of the said box.

The box is adjusted to and held in position against the painting-form by means of a screw D, the bottom of the box having sliders working in a fixed plate.

Under the revolving carrier or disk, on the periphery of which is the painting-form, is placed an adjustable support or ball-guide C, furnished with rails, on the inner edges *t t* of which the ball is supported and pressed with the required force against the periphery of the painting-form on the revolving carrier or disk. These rails are at a distance apart

considerably less than the circumference of the ball to be painted, yet not less than the width of the printing-surface, as may be understood by reference to Fig. 2, where a ball is represented in dotted outline, so that the ball, resting on the inner edges *t t*, is kept free from the intervening parts of the guide while it is being painted.

In the process of painting the ball is fed so as to roll evenly and steadily down between this support or ball-guide and the revolving painting-form, taking its motion therefrom and becoming painted or lined before it leaves the lower end of the said ball guide or support, and is received upon toothed rails F, which allow it to roll away from the machine without injury. In this operation the ball, running on the edges of the rails *t t* of the guide or support C, has the painted lines opposite the space between the edges, but out of contact with that part of the support or guide opposite the painting-lines of the revolving carrier A, so that there is no liability of the painted lines being run into each other or being smeared.

We do not here intend to claim the combination of a rotary carrier having a painting or coloring surface on its circumference, a stationary box for supplying paint or coloring-matter to said surface, and a stationary guide conforming to said carrier for directing balls in contact with said surface for the purpose of painting them, as that combination is shown and substantially claimed in our application for United States Patent, Serial No. 334,411, filed December 20, 1889.

Having now fully described our invention, what we claim is—

1. The combination, in a machine for painting or ornamenting balls, of a rotary painting or ornamenting form presenting circumferential painting-surfaces in a series of lines, and a stationary box having partitions which divide it into separate compartments corresponding with the lines of said surfaces and open to said surfaces, substantially as herein set forth.

2. The combination, in a machine for painting or ornamenting balls, of a rotary painting or ornamenting form presenting circumferential painting-surfaces in a series of lines, a box having compartments separated by partitions for containing painting or coloring material, and projecting plates attached to said partitions and entering the spaces between the lines of said surfaces to prevent the admixture of paints from said compartments, substantially as herein described.

3. The combination, with the rotary carrier having a circumferential painting-surface, of a guide for guiding balls to said surface and supporting them while being painted thereby, the said guide being provided with edges for the support of the ball out of contact with the intervening portions of said guide opposite said painting-surface, substantially as and for the purpose herein set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GUSTAV LOUIS HILLE.
GEORGE ASHDOWN AUDSLEY.
MAURICE ASHDOWN AUDSLEY.

Witnesses:
WM. THOS. MARSHALL,
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