(No Model.)

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

MACHINE FOR COLORING OR ORNAMENTING INDIA RUBBER BALLS.

No. 455,493. Patented July 7, 1891.

Fig. 1.

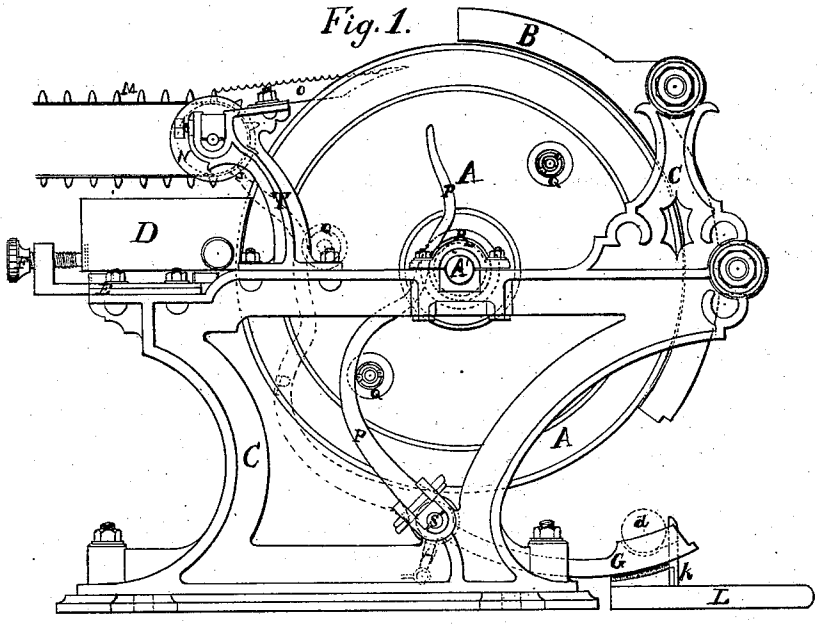


Fig. 3.

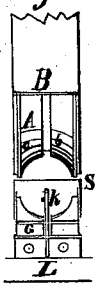
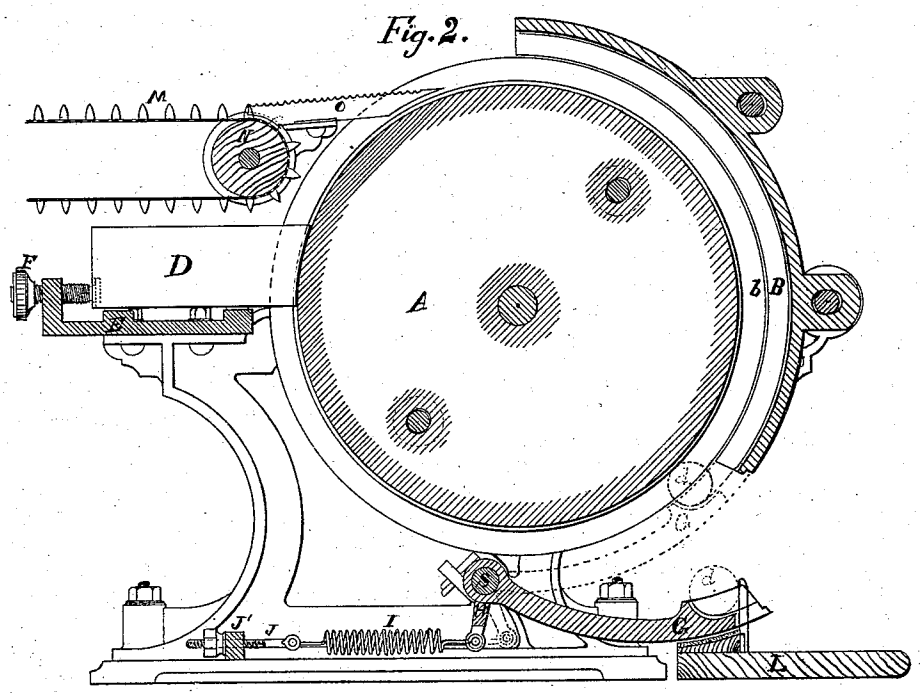


Fig. 2.



Witnesses:
John C. Pfeifer.
C. E. Lundgren

Inventors
Gustav Louis Hille
George Alfred Audsley
Maurice Alfred Audsley
by their Attorneys
Thomas Grinnell

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GUSTAV LOUIS HILLE, GEORGE ASHDOWN AUDSLEY, AND MAURICE ASHDOWN AUDSLEY, OF LONDON, ENGLAND.

MACHINE FOR COLORING OR ORNAMENTING INDIA-RUBBER BALLS.

SPECIFICATION forming part of Letters Patent No. 455,493, dated July 7, 1891.

Application filed December 20, 1889. Serial No. 334,411. (No model.)

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 Great Britain, and residing at London, England, have invented new and useful Improvements in Machines for Coloring or Ornamenting India-Rubber Balls, of which the following is a specification.

The object of this invention is to provide in a cheap, expeditious, and effective way for coloring or ornamenting surfaces of balls, especially balls made of india-rubber.

A machine embodying our invention contains as its principal elements a concave coloring-form, a rotary carrier for said form, and a stationary guide for guiding and retaining the balls in contact with said form while they are caused to rotate by the contact of said form with them.

The accompanying drawings represent a machine constructed according to our invention.

Figure 1 represents a side elevation of the machine; Fig. 2, a central section parallel with Fig. 1, and Fig. 3 a front view of the lower part of the machine corresponding with Fig. 1.

Similar letters of reference designate corresponding parts in all the figures.

A is the carrier, represented as of rotary form, consisting of a wheel, the axle A′ of which is mounted in bearings in the frame C. The concave painting or coloring surfaces *a b* are formed in the periphery of this carrier or wheel. On the frame C is mounted one or more boxes D, containing the paints or coloring-matters, the mouths of the said boxes being placed against the periphery of said carrier or wheel A, which constitutes the said concave painting or coloring surfaces *a b*. The boxes D may be adjusted toward and from the carrier and its printing-surfaces by means of a screw F.

In front of the rotary carrier or wheel A is a guide or trough B, which conforms to the circle of the carrier or wheel A and incloses about one-third (more or less) of the circumference thereof. This trough or guide has a concave semicircular or nearly semicircular transverse section substantially similar to that of the periphery or painting or coloring surface of the carrier or wheel A, so that it has side walls constituting lateral guides to the balls which pass through it to be colored or painted, and the said guide and the periphery of the carrier or wheel combine to form a circular or nearly circular passage. This passage is intended to correspond with the circumference of the balls *d* to be colored or painted.

Below the guide B is arranged a lifter G, for feeding the balls to the carrier or wheel A and guide B. This lifter is attached to a lever P, which works on a fulcrum S. The said lifter G is constructed with a pocket-like cavity for the reception of the balls *d*. The said lever P has an arm H, which is connected by a spring I with an adjustable screw-bolt J, which is screwed in a fixed lug J′ on the base of the framing C. This spring tends to hold the lifter G down to the position shown in Fig. 1 and in bold outline in Fig. 2, ready to receive the balls to be painted. Cam projections Q, represented as consisting of rollers, are attached to one side of the rotary carrier or wheel A, for the purpose of acting upon the lever P during the revolution of the carrier or wheel at proper times to lift the balls *d* deposited in the lifter G to a position against the concave painting or coloring surfaces *a b* of the rotary carrier or wheel just below the guide B, as shown in dotted outline in Fig. 2, the pocket in the lifter G then forming a downward continuation of and a bottom to the guide B. On the opposite side of the rotary carrier or wheel A to the guide B and lifter G, and near the top thereof, there is a stationary bridge O, and behind this bridge is an endless apron M, running on rollers N, one of which only is shown. The balls to be painted or colored are placed one at a time in the pocket of the lifter G every time the said lifter is depressed by the spring I, after the cam projections Q have passed its lever P. The placing of the balls in their proper position in the lifter G is facilitated by a stationary upright rod K, the lifter being slotted to pass over this rod. When the cam projection Q next comes in contact with the said lever P, it throws the lifter and the ball within it up to the position shown in dotted out-

line in Fig. 2. The ball being thus brought in contact with the moving surfaces *a b*, is caused to roll upward into the guide B and through said guide, and during its passage through said guide it receives from the said surfaces *a b* the coloring-matter or paint which the said surfaces have received from the boxes D. On passing out of the guide B at the upper end thereof the balls are projected over the bridge O onto the endless apron M, by which they are conveyed away to be dried.

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

1. In a machine for mechanically painting or ornamenting balls, the combination, with a rotary carrier, of a painting or coloring surface provided on the circumference of said carrier and concave in a direction transverse to the planes of revolution thereof, a stationary box for supplying paint or coloring-matter to said surface, and a stationary guide conforming to the said carrier, both circumferentially and transversely, for directing the balls in contact with said surface, substantially as herein set forth.

2. The combination, with the rotary carrier A, of the concave coloring-form *a b* on the periphery of said carrier, the stationary guide B, conforming to the rotary carrier, the lifter G, the lever P, carrying said lifter and having an arm H, the spring I applied to said arm, and the cam projections Q on the carrier for actuating said lifter, all 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,
I. TOWNSEND THOMPSON.