

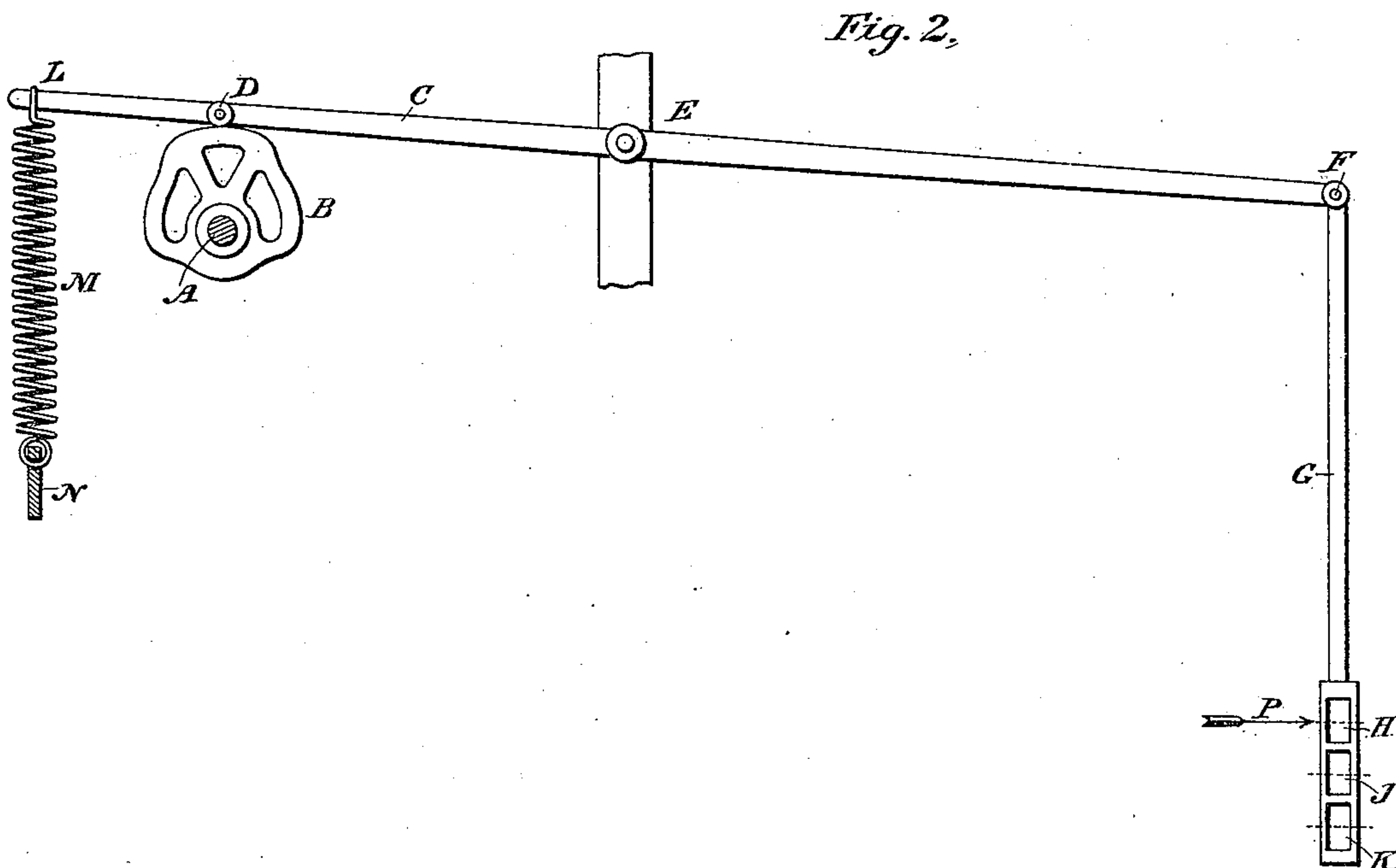
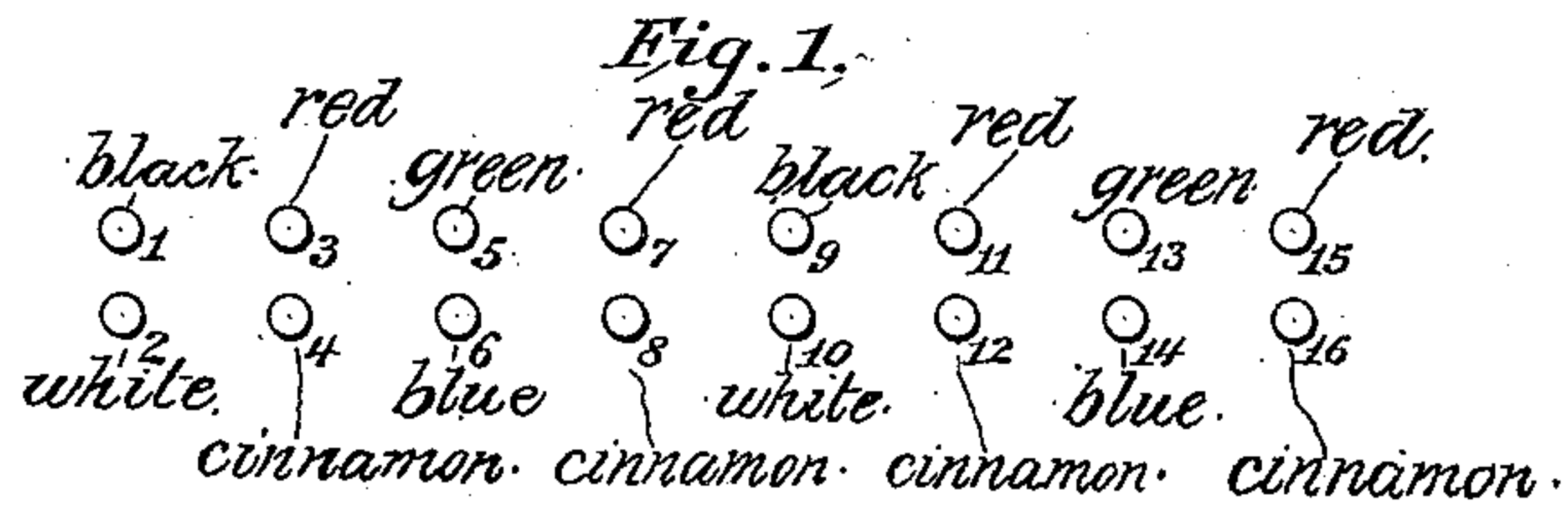
(No Model.)

J. L. FOLSOM.

METHOD OF PRODUCING IMPROVED COLOR EFFECTS IN TWO PLY
INGRAIN CARPETING.

No. 356,063.

Patented Jan. 11, 1887.



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Witnesses

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UNITED STATES PATENT OFFICE.

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METHOD OF PRODUCING IMPROVED COLOR EFFECTS IN TWO-PLY INGRAIN CARPETING.

SPECIFICATION forming part of Letters Patent No. 356,063, dated January 11, 1887.

Application filed October 2, 1886. Serial No. 215,127. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. FOLSOM, of Brooklyn, New York, have invented a certain new and useful Method of Producing Improved Color Effects in Two-Ply Ingrain Carpeting, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part hereof.

My invention has reference to a method of manufacturing two-ply ingrain carpeting, whereby improved and novel color and design effects are capable of being produced; and it consists of the method herein described and claimed.

Two-ply carpeting consists of two distinct webs or fabrics, each having its distinct warp and its separate filling thread or threads, the two webs or fabrics being ordinarily interwoven the one with the other irregularly, according to the requirements of the design or coloring effects to be produced, forming two-ply ingrain carpet, the ingraining or interweaving of the two plies with each other being controlled and accomplished by the jacquard mechanism of the loom.

In the ordinary weaving of a two-ply ingrain carpet the shots of the loom are alternately of filling-thread for one ply and then of filling-thread for the other ply, the two webs or fabrics being thus woven side by side and with equal progression, the filling-thread of one ply being directly under or directly over the corresponding filling-thread of the other ply, and the jacquard determining which of the two shall be under and which over the other.

In my improved process I employ three filling-threads in each of the two plies, and throw the filling-threads singly and throw them in a definite order or succession in each ply. Thus, assuming that the three filling-threads of one ply are black, red, and green, I throw them in the following order: black, red, green, red, black, red, green, red, and so on; and assuming that the three filling-threads of the other ply are white, cinnamon, and blue, I throw them in the following order: white, cinnamon, blue, cinnamon, white, cinnamon, blue, cinnamon, and so on. As the loom

weaves both fabrics at the same time, throwing a shot in each ply alternately, the actual order of the filling-shots in the weaving of the carpet would be as follows: *black*, white, *red*, cinnamon, *green*, blue, *red*, cinnamon, *black*, white, *red*, cinnamon, *green*, blue, *red*, cinnamon, and so on, the colors that are printed in italics representing the threads of one ply, and those not underlined the threads of the other ply, and a longitudinal section of a portion of the carpeting so woven would show sections of these filling-threads arranged with reference to each other, as shown in the diagram, Fig. 1, assuming, for the sake of simplicity, that on the line of section all the filling-threads of one ply are up and all those of the other ply are down in the compound fabric, 1 being a section of a black filling-thread, 2, white; 3, red; 4, cinnamon; 5, green; 6, blue; 7, red; 8, cinnamon; 9, black; 10, white; 11, red; 12, cinnamon; 13, green; 14, blue; 15, red; 16, cinnamon, and so on if the diagram were continued.

The jacquard of course throws the shot of either ply up to the top of the carpet, the corresponding shot of the other ply being at that point at the bottom of the fabric. The particular succession in which the three filling-threads of each ply follow each other in the weaving is not material, so long as it is a fixed and definite succession and the same thread is not thrown twice in succession; nor are the particular colors used material to the invention, so long as all three threads in one ply are of different shades or colors. By thus employing three differently colored or shaded threads in each ply and throwing single shots of such threads in some definite succession, such that double or successive shots of the same thread do not occur, I am enabled to secure color effects in two-ply ingrains never heretofore secured, and which are wholly novel, and to combine on the face of the carpet the different colors of the filling-threads of both plies in a manner and to an extent heretofore unattainable, the single threads of color producing the effect not of mass coloring, but of shading, and the possible combinations of single-line coloring being very great.

My improved process may be practiced by the use of any loom adapted to weave two-ply

ingrain carpets by providing the proper number of shuttles and shuttle-boxes both for the forward and the rear shuttle-frame of the loom, and mechanism to bring those shuttle-boxes in
 5 proper succession into operative position for their shuttles to be acted upon by the picker-sticks. For instance, the change necessary to be made in a two-ply ingrain loom in which the path of motion of the picker-stick on either
 10 side of the loom is always the same, and the shuttle-frame is moved so as to bring the shuttles, when desired, within the range of motion of such picker-stick, is shown diagrammatically in Fig. 2 of the drawings, which is a side view
 15 of the rear shuttle-frame of such a loom on one side of the loom and of its operating and controlling mechanism.

G is the shuttle-frame and supporting rod.

H, J, and K are the three shuttle-boxes,
 20 adapted to receive shuttles carrying, say, black, red, and green yarn, respectively, H in the instance assumed above receiving a shuttle carrying black yarn, J a shuttle carrying red yarn, and K a shuttle carrying green
 25 yarn.

C is a lever fulcrumed in the frame of the loom at E, and carrying the shuttle-frame G at its end F, where it is pivoted to such frame and held down at its end L by the strong
 30 spring M, secured to a part of the loom-frame N. This lever C is held down at its end L, so that the roller D, mounted on it, is kept always in contact with the cam B, which is mounted on the cam-shaft A of the loom. The shape of
 35 the cam, as shown, presents the shuttle-boxes H, J, and K in a definite succession—to wit,

H J K J H J K, &c.—to the picker-stick, the position of which is indicated at P, and thereby determines the order of succession of the
 40 shots of filling-thread in the ply under consideration. Similar mechanism may control the front shuttle-frame of the loom, or the two shuttle-frames may be secured together and may be operated by one lever C and cam B, the usual and well-known mechanism being
 45 employed to swing the double frame alternately backward and forward for alternate picks in the two plies—such, for instance, as the mechanism illustrated and described in Letters Patent No. 4,696, granted to E. B. Bigelow, August 18, 1846, for swinging the front
 50 and rear shuttle-frames—although I in nowise restrict myself to any particular mechanism for this purpose.

I do not claim the mechanism herein described.
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What I claim as new, and desire to secure by Letters Patent, is—

The method of producing improved color effects in two-ply ingrain carpets, which consists in employing three distinct and differently colored or shaded filling-yarns for each
 60 ply, and throwing such filling-yarns of each ply in such alternate order or succession that two immediately successive throws of the same filling-yarn shall not occur in either ply, substantially as shown and described.
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Witnesses:

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