

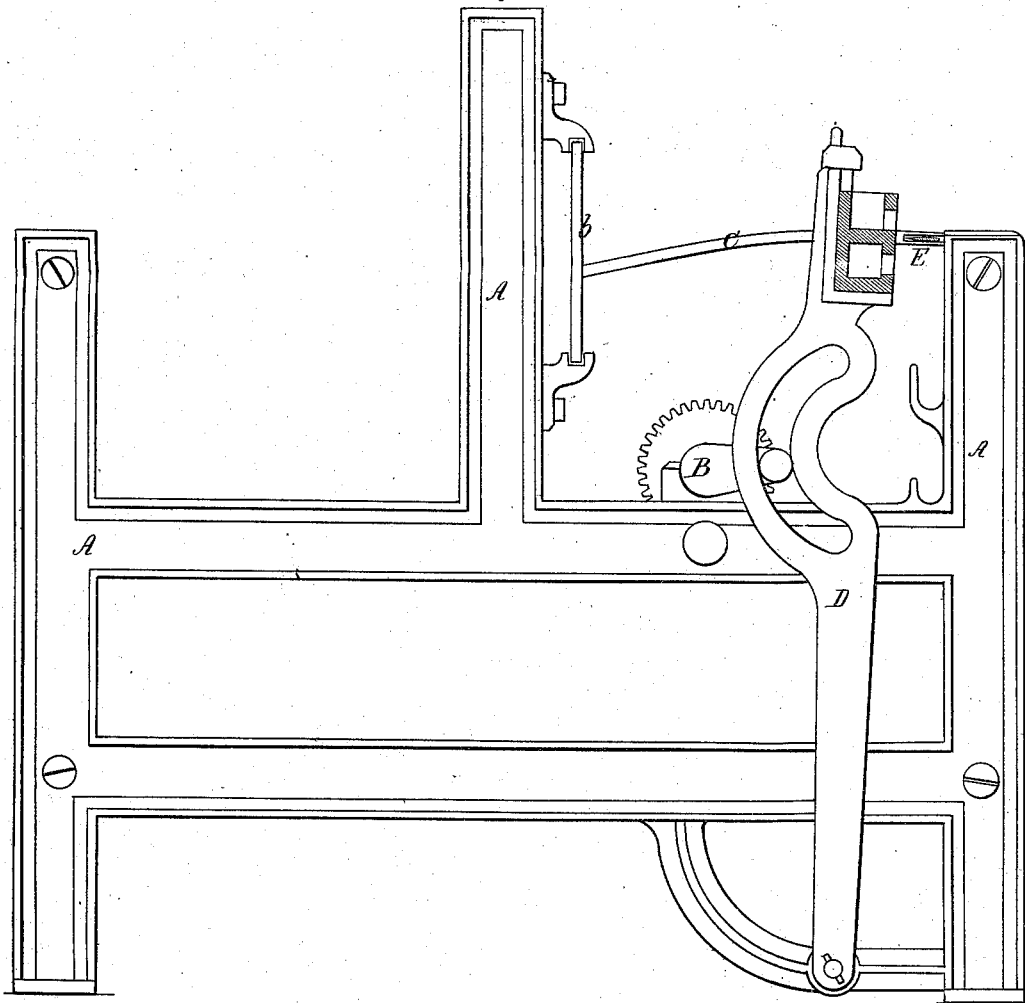
Sheet 1-3 Sheets.

M. C. Bryant.
Weaving Pile Fabrics.

N^o 7,452.

Patented Jun. 25, 1850.

Fig. 1



M. C. Bryant.
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Fig. 2

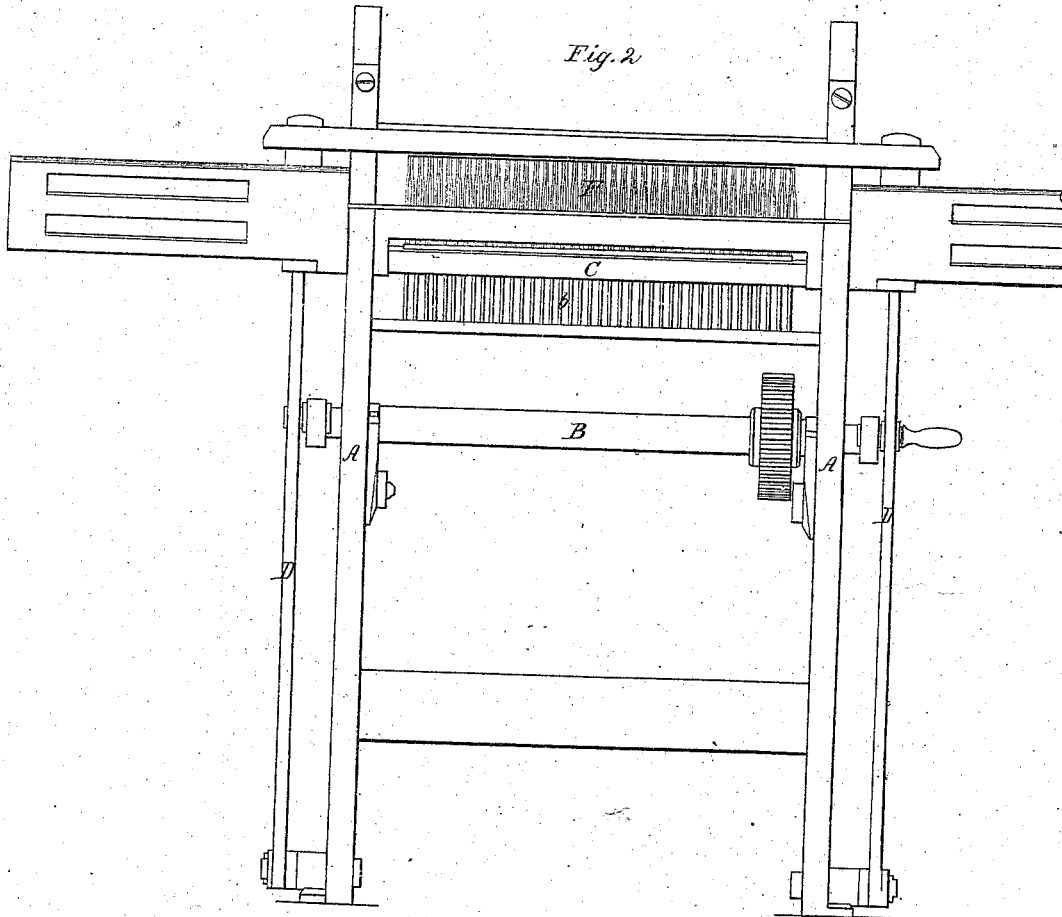
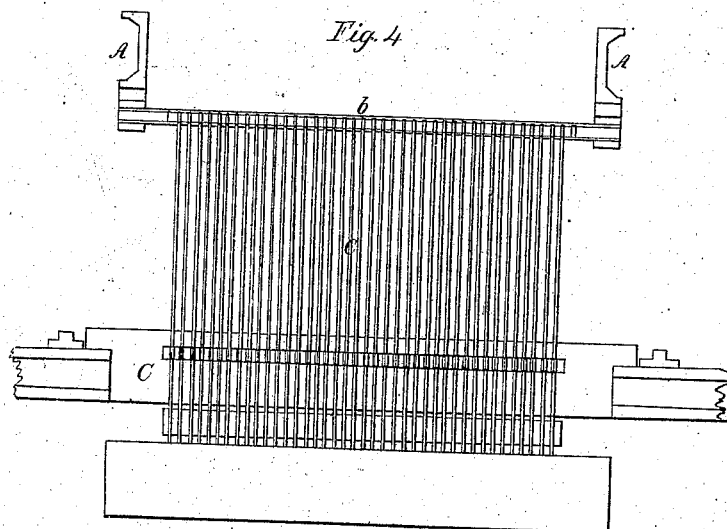


Fig. 5



Fig. 4

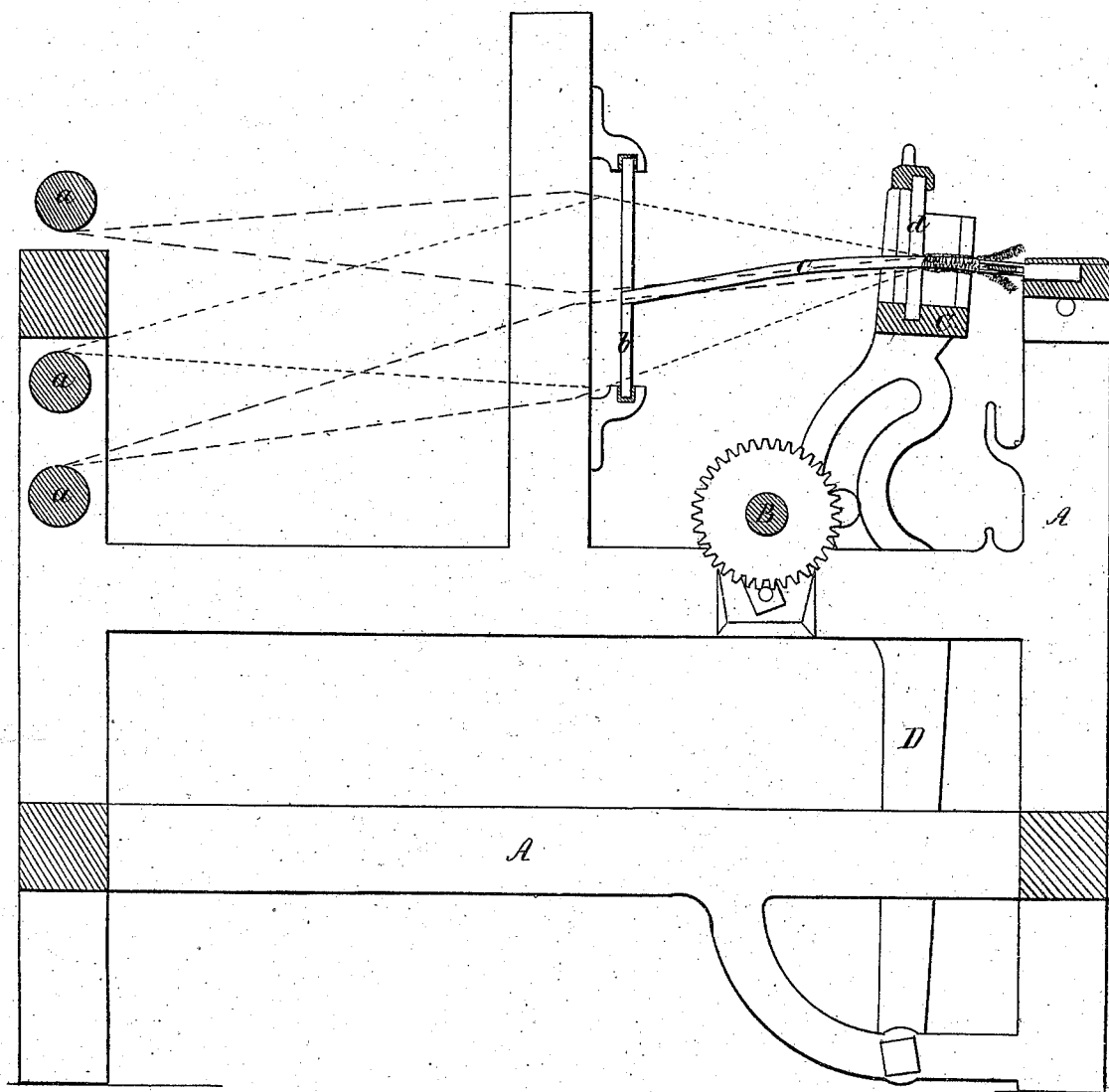


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Fig. 3



UNITED STATES PATENT OFFICE.

MERTOUN C. BRAYANT, OF LOWELL, MASSACHUSETTS.

LOOM FOR WEAVING CUT-PILE FABRICS.

Specification of Letters Patent No. 7,452, dated June 25, 1850.

To all whom it may concern:

Be it known that I, MERTOUN C. BRYANT, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Power Looms for Weaving Cut-Pile Fabrics, and that the following is a full, clear, and exact description of the principle or character which distinguishes my invention from all other things before known and of the method of making, constructing, and using the same, reference being had to accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation of the frame and other parts of the loom the shuttle boxes being shown in section. Fig. 2 is a front elevation. Fig. 3 is a vertical section midway between the frames. Fig. 4 is a sectional plan showing the improved apparatus.

The same letters indicate like parts in all the figures.

In my improved loom I do not use figuring wires which are placed transversely across the web and over which the figuring pile is drawn and subsequently cut from, but I weave simultaneously two pieces of cloth at a distance apart equal to twice the length of the pile required. Warps (of the material of the pile) are made to be alternately woven into each of the pieces of cloth, these after being cut midway between the pieces of cloth forms the pile. I am aware that this method of making cut pile cloth has been essayed and that cloth has been made in the manner described. I therefore do not claim the manufacturing cloth by this means simply. The principal difficulties hitherto found in this system of manufacturing cloth has been to keep the two pieces of cloth at equal distances apart and to cut the pile at the middle between them and at the same time be able to make firm and stiff goods. The object of my improvements is to overcome these difficulties and manufacture the goods with the power loom.

(A) represents the frame, (B) the crank shaft, (C) the lathe. The yarn and cloth beams stop motions, pickers and many other parts of common use and construction in power looms are not represented they not being necessary to an understanding of my improvements. The yarn passes from the yarn beams over suitable guide rollers shown at (a, a, a,) Fig. 3, the upper and lower ones guiding the warps forming the body of the

separate pieces of cloth and the middle one guiding the yarn which forms the pile. The yarns thence pass through the harnesses which are not shown, thence through a false reed (b,) this reed is stationary and each split or dent is formed as shown at Fig. 5, by using two pieces of flat wire for each dent and placing them contiguous side by side and bending each so that when they are soldered together they will leave near the middle an eye into which one of the intersecting plates to be hereafter described can enter and be supported. Thence the yarn passes forward through the reed *d* to the two pieces of cloth one of which is formed upon the upper surface of the intersecting plates and the other is formed upon the lower surface of them. The intersecting plates (*e*) are formed of thin pieces of metal of the width of twice the length of pile required and long enough to reach from the breast beam through the reed (*d*) to the false reed (*b*) they are bent into the form of an arc of a circle with a radius of the same length as the distance from them to the axis of vibration of the lay and the end next the breast beam has a saw cut in its center a short distance so that when these plates are placed side by side in position these saw cuts will form a groove transverse to the cloth into this groove is inserted a long, thin knife *E* with its edge toward the reed, this knife has an endlong vibratory motion given to it and severs the warp forming the pile. There are two shuttles used, one placed above the other, the lower one is supported in its transit across the cloth by the bed of the lathe in the usual manner, the other is supported in its transit by the intersecting plates (*e*). It will be seen that the yarns forming the body of the upper piece of cloth and also those which form the body of the lower piece of cloth can, by ordinary harnesses and cams, be crossed and recrossed and the shuttles which carry the filling or weft threads thrown between them simultaneously and thus two distinct pieces of cloth will be made at the same time; one piece of cloth being formed above and one piece below the intersecting plates (*e*). But besides the warps forming the body of the cloth, I use another warp for the pile, this is made by the ordinary means of harnesses and cams to cross from the lower piece of cloth to the upper and vice versa, in doing this it passes between and by the intersecting plates (*e*) and it is the object of the false

reed (b) to prevent the threads from catching upon the ends of, as well as to support the intersecting plates. Although I have thus described the false reed as the means by which the warp threads are guided past the ends of the intersecting plates and which supports the ends of the intersecting plates I do not limit myself to this particular construction; for the same object would be secured if, instead of the false reed, in the end of each of the intersecting plates there was a small hole and if two pieces of twine being guided and supported above and below the web in the manner of a harness, were passed through and crossed in the hole—this contrivance would guide the yarns by the ends of the plates. Again if the end of the intersecting plate were bent up above or down below the web or if it were split and bent in both directions the same object would be accomplished. As the weaving proceeds the pile warp is continually crossed from the upper to the lower webs and vice versa and woven into both of them. The fabric has then the appearance of two pieces of cloth united by the warp threads which are to form the pile and at a distance apart equal to twice the length of pile required. This is drawn forward to the knife E which by its vibrations cuts the two pieces apart thus giving the required fabric.

I am aware that short intersecting plates

have been used, but in those cases they were applied to hand looms and did not extend through the reed nor were they supported at their ends or protected so that the warp threads could not catch upon them.

I am also aware that an intersecting knife has been used, placed in the intersecting plates, therefore I do not claim these as being new or of my invention; but

What I do claim as new and of my invention is—

1. The use, in power looms for weaving cut pile fabrics, of intersecting plates, entering between the two pieces of cloth and allowing the pile warps to cross and recross from one to the other, which extend through the reed thereby forming on their upper surface a plane upon which one of the shuttles is supported in passing through the web substantially as described.

2. The continuing of the intersecting plates to the outside of the warps, by adding the within described false reed or otherwise, for the purpose of supporting the ends of the intersecting plates and for guiding the warps by them, substantially as described.

MERTOUN C. BRYANT.

Witnesses:

NEWTON FITTS,

LEWIS W. LAWRENCE.