

A. Calderhead.

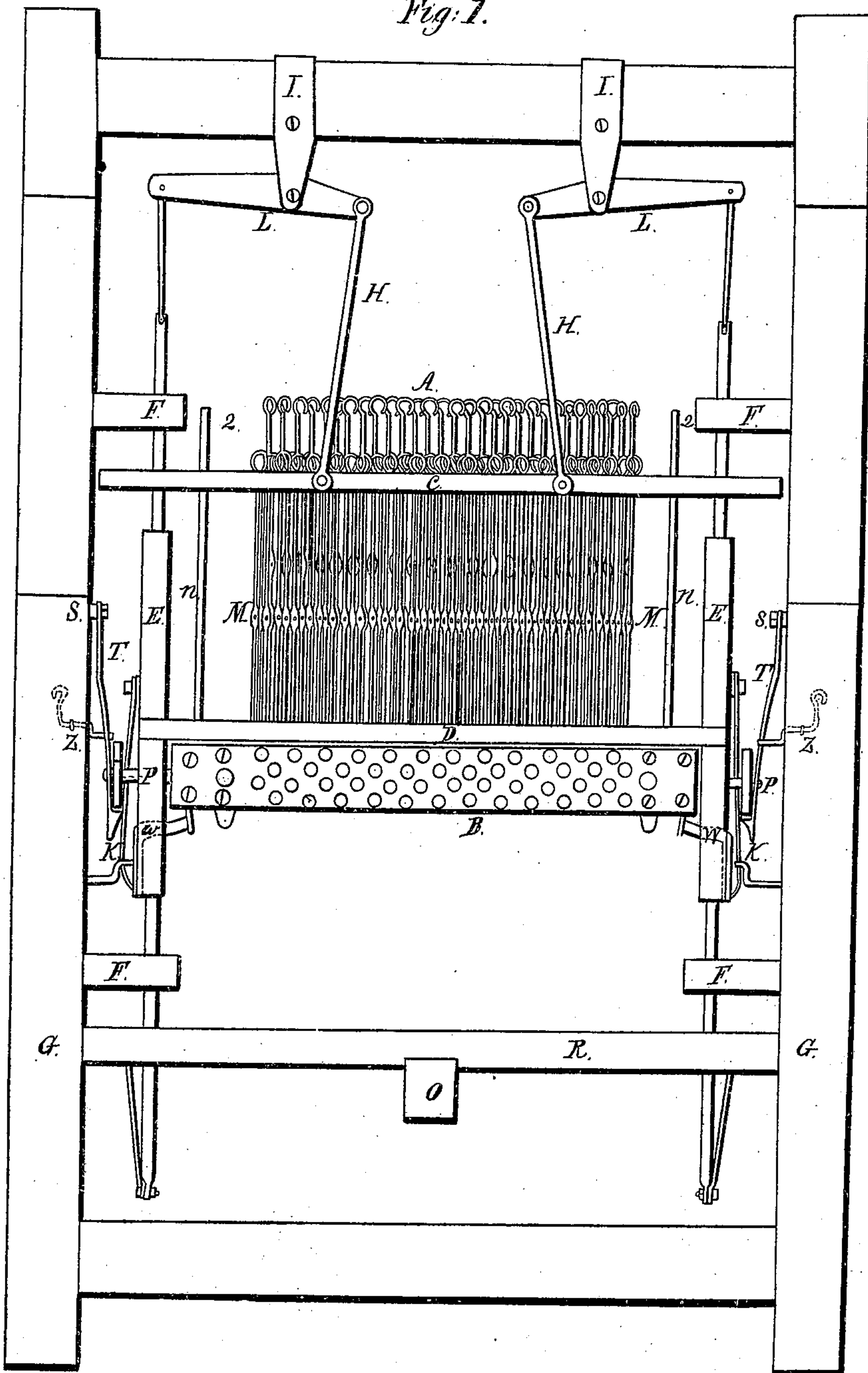
Sheet 1-2 Sheets.

Loom.

N^o 1,964.

Patented Feb. 3, 1841.

Fig. 1.



A. Calderhead.

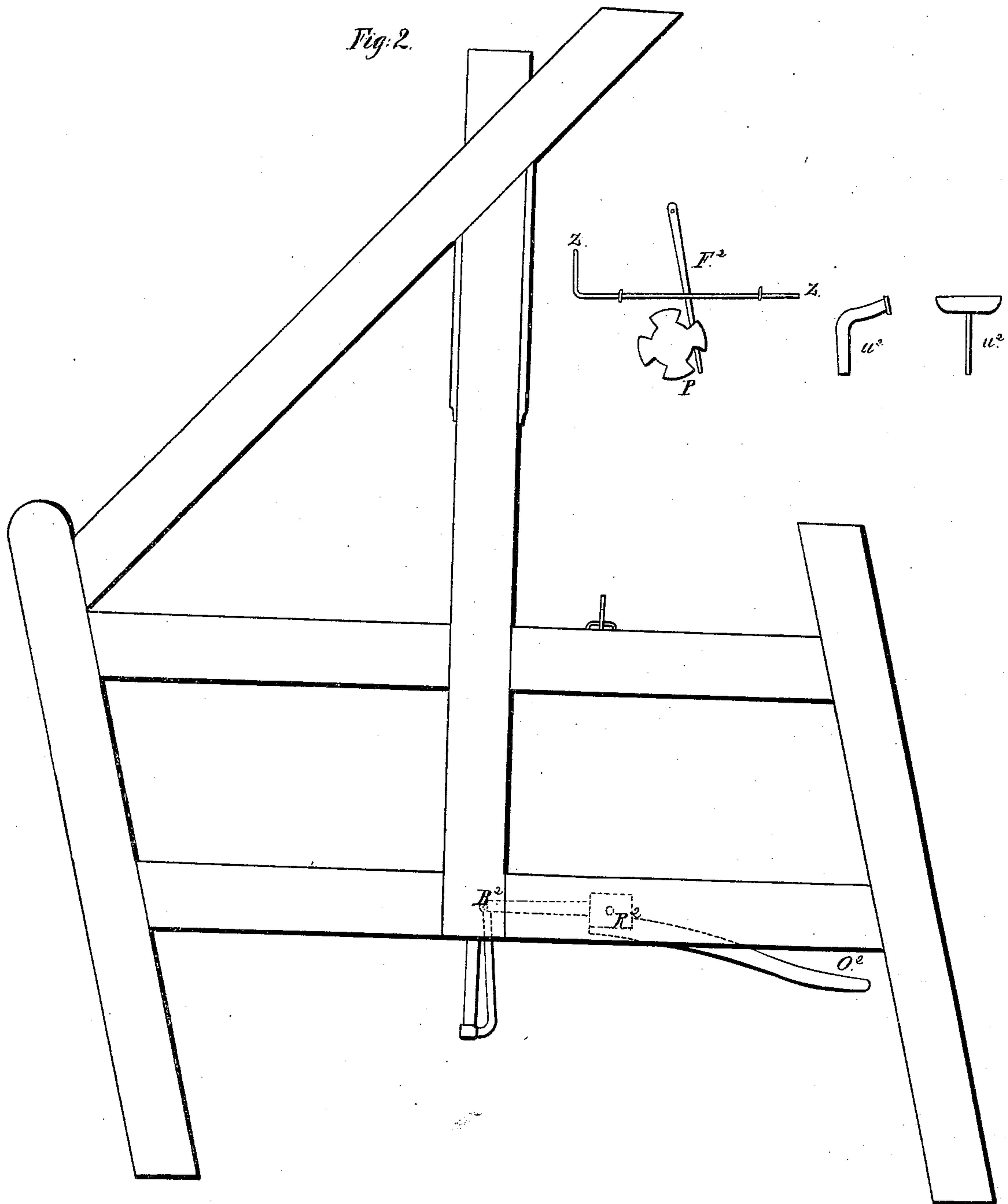
Sheet 2-2 Sheets.

Loom.

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Fig. 2.



UNITED STATES PATENT OFFICE.

ALEXANDER CALDERHEAD, OF PHILADELPHIA, PENNSYLVANIA.

JACQUARD MACHINERY FOR WEAVING ALL KINDS OF FIGURED CLOTH.

Specification forming part of Letters Patent No. 1,964, dated February 3, 1841; Reissued May 13, 1857, No. 202.

To all whom it may concern:

Be it known that I, ALEXANDER CALDERHEAD, of the city of Philadelphia and State of Pennsylvania, have invented a new, 5 easy, and cheap Mode of Weaving All Kinds of Figured Cloth; and I do hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this 10 specification.

The nature of my improvements consists first in lifting and lowering the threads of the warp with what I call independent metallic heddles or heylds, instead of the 15 weights mails and twines composing the lower mounting, or harness of the draw loom. Second—in constructing the cylinder or pattern apron so as to directly lift and receive the said heddles so as to form 20 the shed or shire; or in constructing a trunk and pattern web, both to direct what shall be the shed as it does in the jacquard and other drawing machines by trapping or untrapping the hooks or knot cords to be 25 drawn up—whereas mine directly lifts the heddles up. I make the heddles for a three ply or imperial carpet of No. 13 wire the length of which is 24 inches. A head (A, 30 Figure 1,) or boull is made at the one end of them. 14 inches below the head they are flattened (M Fig. 1,) wherein eyes are punched or bored. They work perpendicular in two boards (C and D, Fig. 1,) one of 35 which (C,) suspends them by the heads, the other (D,) directs their points into the holes in the cylinder (B,) on which the pattern apron works. I make the boards (C and D) one inch thick, $5\frac{1}{2}$ inches deep and 40 four feet broad, or long enough to work on the slides (E E Fig. 1). I bore the holes in said board large enough to admit wires about two numbers coarser, than that of which the heddles is made, and the holes of 45 the trunk and pattern web one fourth of an inch. Each row of holes in the boards trunk and pattern web, contains 12 in depth on four inches, and must be slanted in the rows so that the back hole of the one row 50 shall come near square with the front one of the other row, so that the threads of the warp may pass straight through their own heddles. The trunk, pattern web and boards must be the breadth of the web, and the

trunk hollow the depth of the shed. The 55 trunk may be cast or made of plates of sheet brass, brazed together, and fixed or screwed on blocks with an axle or center which passes through slides (E E) which is 60 inches long, 25 above and 35 inches 60 below, from where the axle or center of the trunk pass through the slides, which slides pass through brackets or guides (F F) and are attached by straps to beams (L L) 65 which are suspended from the top of the frame by straps (I I). To the other end of the beams (L L) is suspended four rods (H H) (two of which only can be seen) on which hangs the heddle rest or suspension board (C). 70

n n is a metallic rod which passes through board (C) and is screwed into guide board (D). The heads (2) of said rods suspend the board (D) so that the heddle point shall be one half inch through it when the trunk 75 is down. The lower end of slides (E E) are attached to the points of the lever (R) (which is also seen at Fig. 2, B²). Attached on the ends of the axles of the trunk or centers is a four toothed wheel (P P) 80 as (is also seen on Fig. 4 P). It is for the purpose of turning the trunk, being caught in its descent by hooks (T T) which are attached to the frame of the loom at (S S).

W W, are levers which work in the slides 85 (E E) and are pressed by the springs ($\frac{1}{2}$ $\frac{1}{2}$) which bring and keep the trunk square. These levers are more fully shown in Fig. 3.

(L L) are two slides shown in Figs. 1 and 4 which pass the hooks from one side 90 of the wheels P P to the other, to make the trunk revolve in different directions.

The operation of the machine is as follows: The foot board O of the lever R being 95 pressed down raises up the slides with the trunk; which also takes up the guide board and lowers the rest board which makes the heddles pass into the trunk where the pattern web is cut or perforated, and raises them (the heddles) where it is not. Again, 100 when the pressure is taken off the foot board of the lever the wheel on the axle of the trunk is caught by the hooks which makes the trunk turn the fourth of a revolution.

I claim the right to make the above speci- 105 fied machinery to suit all kinds of flowered cloth. It is easily fixed or attached in any loom,

Fig. 2, is a view of one side of the frame of my loom, the principal difference is its being made with a bevel instead of a square, and the cross rails laid in flat.

5 I claim as my invention—

The principle of lifting the shed or shire with metallic heddles directly by the pat-

tern apron and trunk, roll or receiver, or by lowering the heddles into the same, as described.

ALEXANDER CALDERHEAD.

Witnesses:

WM. THOMPSON,
H. C. THOMPSON.

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