

Sheet 1.4 Sheets

Mach. for Dyeing Varn & Print'g Calico.

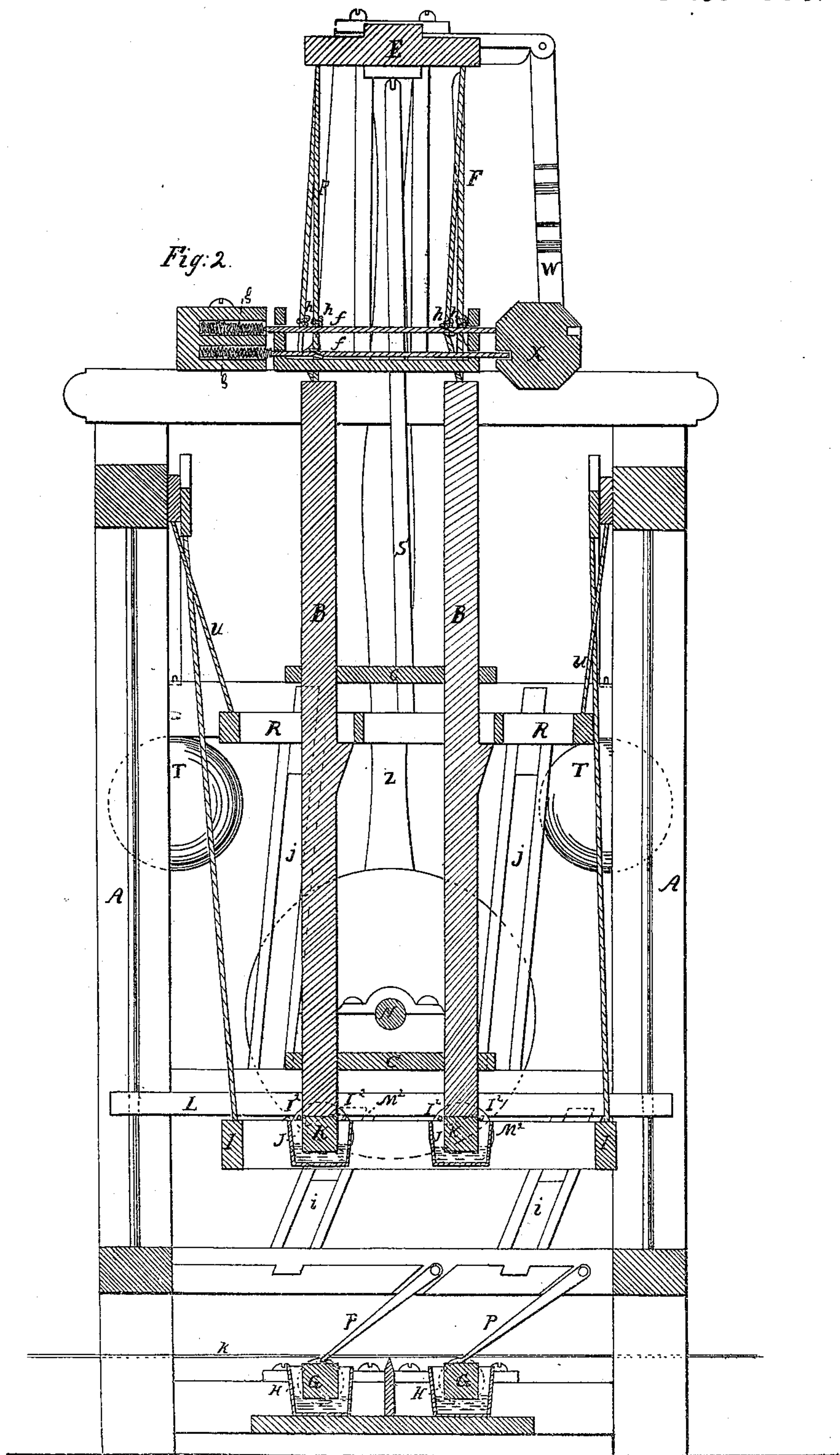
N^o 13818.

Patented Nov. 20. 1855



T. Henderson. Sheet 2. of 5 Sheets.
Mach. for Dyeing Yarn & Printing Calico.
N^o 13818. Patented Nov. 20. 1855.

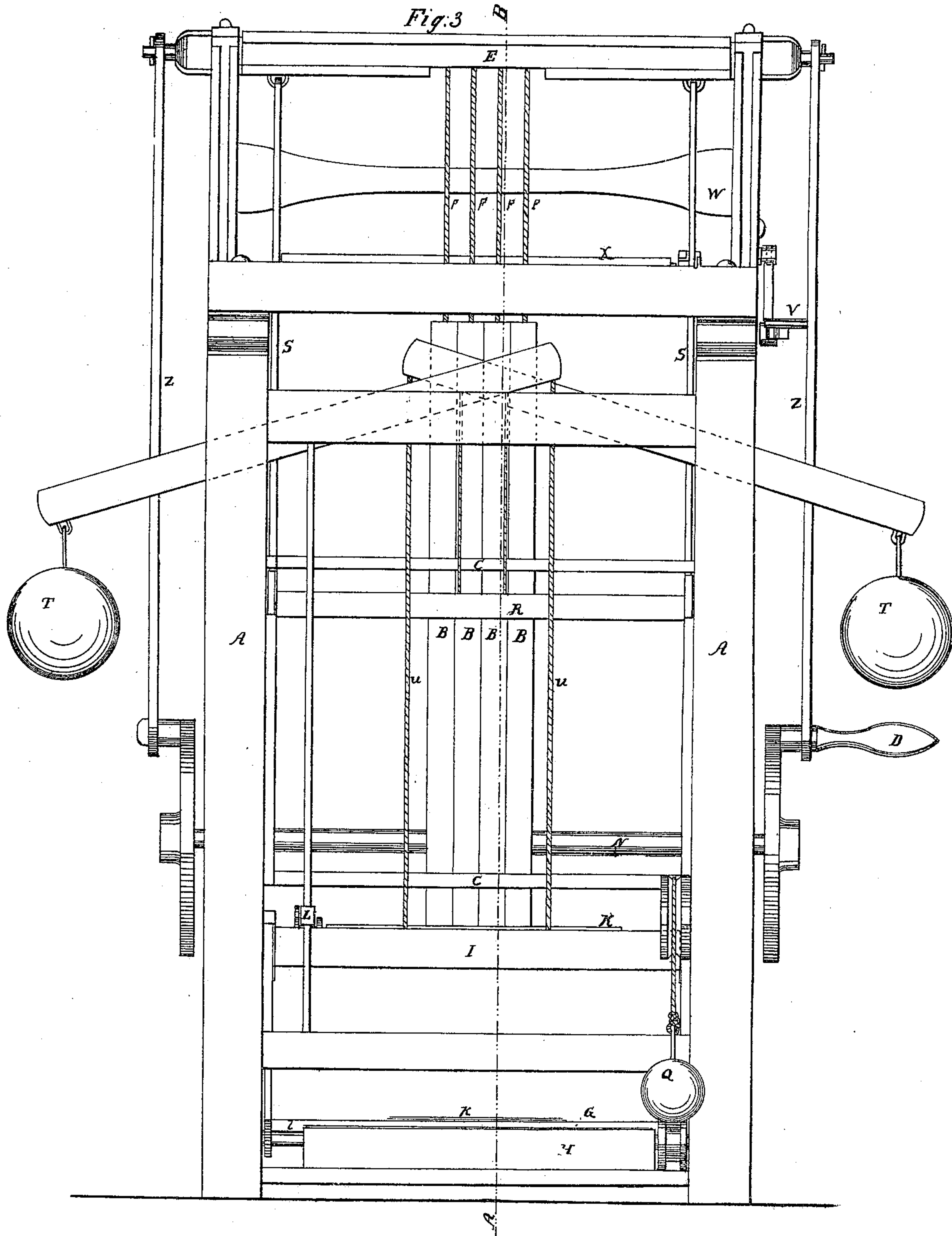
Fig. 2.



T. Henderson. Sheet 3 of 4 Sheets.

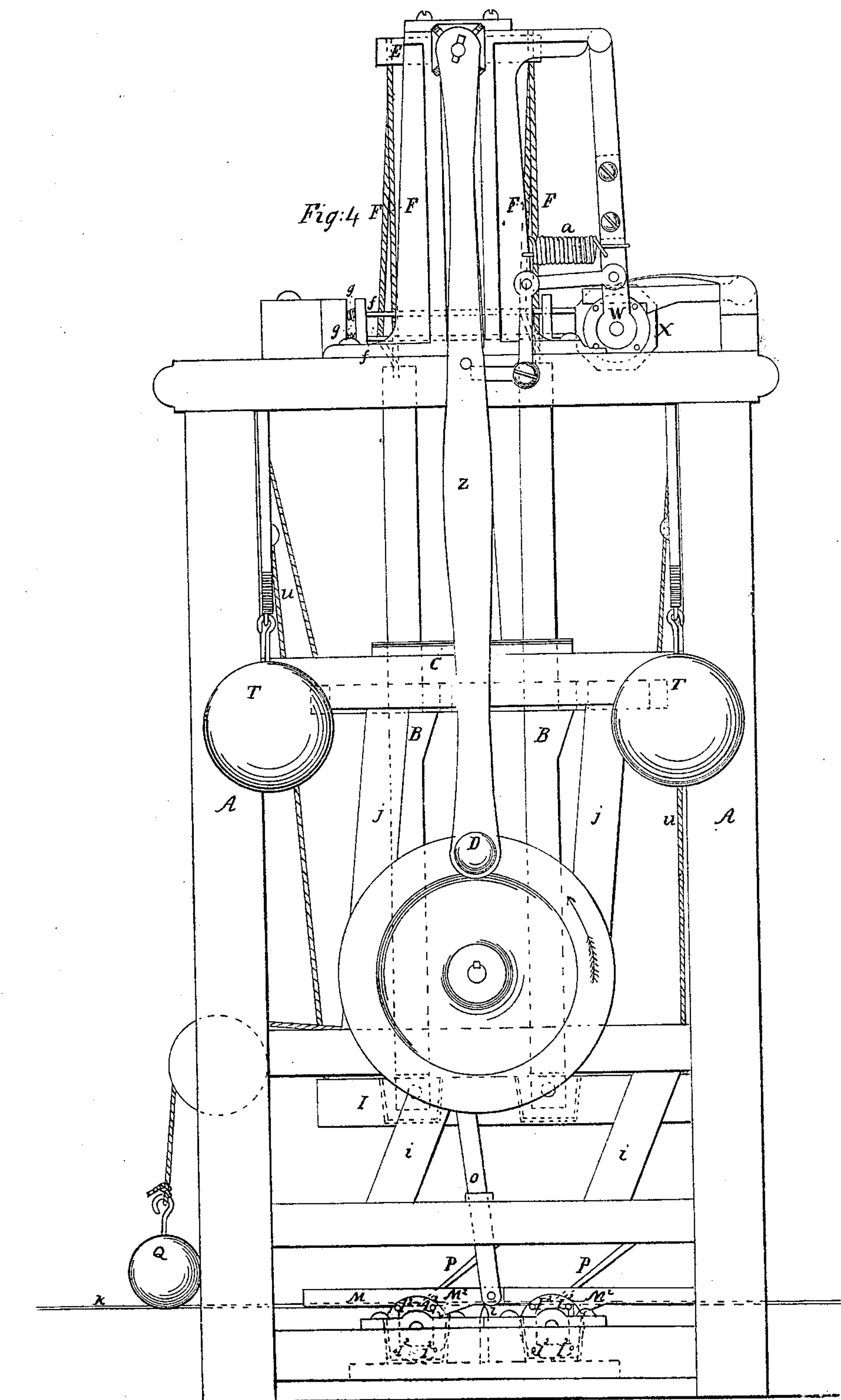
Mach for Dyeing Yarn & Printing Calico.
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Fig. 3



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UNITED STATES PATENT OFFICE.

THOS. HENDERSON, OF LOWELL, MASSACHUSETTS.

MACHINE FOR PRINTING YARNS AND CLOTHS.

Specification of Letters Patent No. 13,818, dated November 20, 1855.

To all whom it may concern:

Be it known that I, THOMAS HENDERSON, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and useful Machine for Dyeing Yarns and Printing Cloths, &c.; and I hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 denotes a plan. Fig. 2 a vertical section at A, B. Fig. 3 a front elevation. Fig. 4 an end elevation.

The nature of my invention consists of a machine which is hereafter described, for the purposes of dyeing yarns different colors, or one or more colors and figures, and printing cloths of different colors and figures, by passing them once through the machine, the coloring being effected by types which receive their color on their lower ends, from a box and deposit or impress it upon or into the surface of the cloth, by means of the Jacquard and other parts of its operation as hereinafter described.

To enable persons skilled in the art of making machinery, and printing cloths, and dyeing yarns to make, construct and use my invention, I will describe the same as follows.

I construct a frame of wood as seen at A, A, in the several figures of the drawings.

B B Figs. 2, 3, and 4 are the printing or coloring type made of wood, and C, C, Figs. 2, 3, and 4, are the pieces made of wood which sustain these types as they are moved up and down by the iron crank D, and shaft N, and top piece E, and chords F.

The lower and stationary set of color distributors which are made of wood can be seen at G, and the color boxes which are made of copper in which they revolve can be seen at H.

At I can be seen a movable cast iron frame in which is placed the two upper coloring boxes J J, and in which revolve the coloring distributors K, K.

The coloring boxes J, J, and H, H, are constructed in an oblong form of any desired metal or substance as seen in section at H Fig. 3, and at H, H, and J, J, Fig. 2. The two lower color boxes H, H, are fixed stationary to the bottom of the frame A, A, and the two upper ones are fixed firmly to the movable frame I. These boxes J, J, and

H, H, contain the color as seen at A², A², and B², B².

In the end of the color boxes J, J, and H, H, I provide suitable bearings for the journals of the color-distributors G, G, and K, K, to turn or revolve in. The color boxes are sufficiently filled with color to cover the under side of the several color distributors, so that as they are turned one quarter way around at each advance of the yarn or cloth being printed or colored, so that a fresh supply of color is imparted to the cloth or yarn on its under side, and a fresh supply of color is imparted to the lower ends of the types B, B, by the angular upward movement of the frame I carrying the color boxes J, J, and distributors K, K, so as to impart the color first to the types B, B, then by them to the yarn or cloth on its upper side exactly over the color distributors G, G, by the types descending perpendicularly, after the frame I and color boxes K, K, are moved angularly down so as to let the types B pass perpendicularly by them to impress the color upon the yarn or cloth. Each of the color distributors seen at G G, and K, K, is provided with a trundle head seen at C², C², and are affixed to the journals of the color distributors outside of the color boxes, so as to turn them to present a fresh supply of the color to the types and cloth, by the pins in them seen at I², I², moved by the catches M² M² in the levers L and M as will be hereafter seen.

At L is seen the ratchet levers which turn the color distributors, and at M can be seen the ratchet lever which turns the lower set of coloring distributors in the dye boxes by means of an arm in the shaft N, striking against the secondary lever o, the color distributors being held steady when they are imparting the color to the types and cloth, by the catches P, while the levers M and O, are drawn back by the weight Q, Fig. 3.

The turning of the upper color distributors in the dye is effected by the angular upward movement of the frame I bringing the pins I² I², in the ends of these coloring distributors in contact with the catches M² M² on the levers L and M.

At R can be seen an iron frame for forcing down the types B on the cloth. This frame is moved up and down obliquely in the guides J by being connected to the top piece E, by the rods S S. This frame R in its downward movement, raises the weights

T, T, by the cords U, which allows the movable frame I to descend in an oblique direction, by its being fitted to the oblique ways *i*, and the types B in a perpendicular direction by and below this frame I on to the surface of the cloth or yarn for distributing or impressing the color into it.

In one of the connecting rods Z, I place a pin seen at V, for operating the swinging frame W, and turning the jacquard cylinder X, this frame W being held forward by two spiral springs *a*, *a*.

At F can be seen the cords which are attached to the tops of the types B, and to the top piece E they passing up through the slots *d*, in the plate *e*, and through the eyes of the needles *f*. These needles are pressed back against and into the surface of the jacquard cylinder by the spiral springs *g*.

The knots in the type cords F are for the purpose of keeping up the type which print the desired figure, which knots can be seen at *h*, they being drawn up through the large part of the slot *d* and are carried longitudinally over the narrow parts of these slots by means of the eyes in the needles *f* and these needles being driven longitudinally forward by the jacquard cylinder X. By this contrivance it will be seen that the types operated upon in this way will not descend until the next revolution of the crank, while the other needles enter the holes in the surface of the jacquard cylinder, and leave the types which they govern, free to descend by the means before mentioned.

At *l* can be seen the separating piece to keep each kind of dye separate during the working of the machine.

The cloth or other article to be printed, may be passed through the machine by any proper means and is shown in red lines at *k*, and sufficiently raised above the color distributors that they cannot touch any part of it, except by the downward operation of the types B, so that it will be seen that these types receive color from the distributors K, K, and impress it into the upper surface of the cloth, and at the same time press this cloth down upon the top of the color distributors G, G, which colors the under side of it.

By turning the crank D as the arrow points, the whole machine is put in operation.

Having thus described my invention what I claim as my improvement and desire to secure by Letters Patent is—

1. The printing or coloring types B arranged and operated essentially and for the purposes set forth.
2. I claim the coloring distributors and boxes in which they revolve, when they are constructed and operated substantially as described for the purposes set forth.
3. I claim the types B in combination with the jacquard operation for printing and coloring figured goods, when they are arranged and operated substantially and essentially as set forth.
4. I claim the types B in combination with the color distributors and boxes arranged and operated essentially as set forth.

THOMAS HENDERSON.

Witnesses:

JOSHUA N. MARSHALL,
A. P. BONNEY.