T. B. Butler.

Forming Bats.

No. 19235. Patented Feb. 2. 1858.

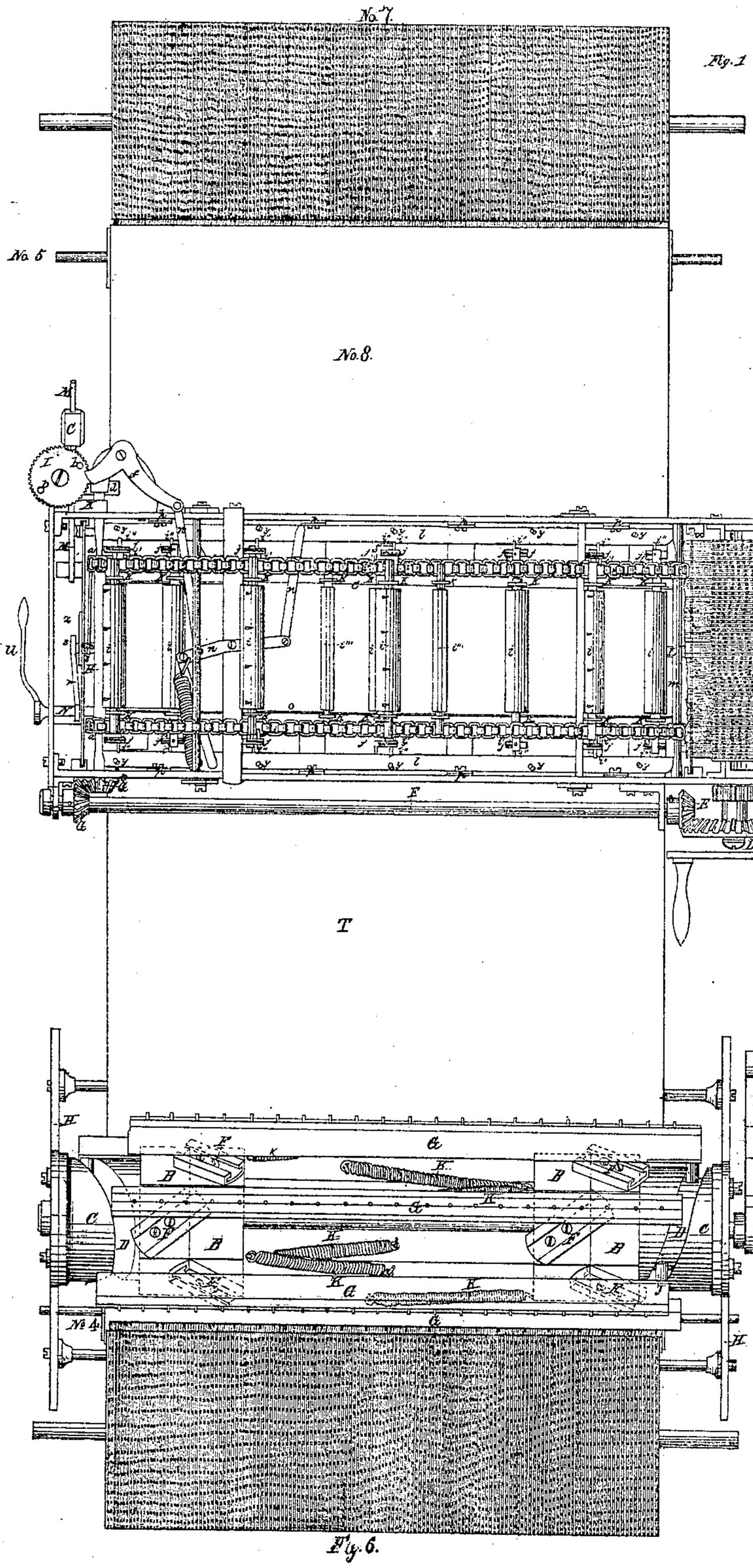

Fig. 1

Fig. 2.

Fig. 3.

Fig. 6.

UNITED STATES PATENT OFFICE.

THOMAS B. BUTLER, OF NORWALK, CONNECTICUT.

MODE OF FORMING THE BAT FOR MAKING FELT CLOTH.

Specification of Letters Patent No. 19,235, dated February 2, 1858.

To all whom it may concern:

Be it known that I, THOS. B. BUTLER, of Norwalk, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in the Mode of Forming the Bat in Making Felt Cloth, Whereby the Texture and Quality Thereof Are Improved; and I do hereby declare that I believe the following to be a full and exact description of the same, reference being had to the accompanying drawings and the letters of reference marked thereon.

The nature of my invention consists in forming a bat, to be felted into cloth, composed of several series of layers, and each series of three layers, each having the fibers laid in a different direction: viz. the first layer of the series with the fibers deposited lengthwise of the bat, the second with the fibers deposited diagonally across the bat, and the third with the fibers deposited directly across the bat at right angles with those of the first layer of the series.

The fibers of wool, in carding, are deposited by the main cylinder of the carding machine upon the doffer cylinder at right angles with its axis, and run off, when combed from the doffer, in the same position. Felt cloth is made straight, as it is termed,—that is with the fibers lengthwise the bat,—by placing a carding machine at the end of the apron and causing the fibers to run directly upon it. But such cloth, although strong lengthwise, is weak in every other direction. It is also made by the machine patented by John Arnold July 15th, 1829, and reissued March 18 1856 by placing another carding machine at the side of the apron, with the machine of said Arnold attached, and thereby depositing a layer of transverse fibers upon each layer of lengthwise fibers. Such cloth is strong both lengthwise and transversely, but comparatively weak diagonally. To remedy this defect I place another carding machine, with the machine patented by me on the 14th day of April 1857, or other equivalent machine, at the other end of the apron, and thereby interpose between the alternating layers of lengthwise and transverse fibers, a layer of diagonal fibers which makes the cloth equally strong in every direction.

The situation in which the machines are placed, and the manner in which the fibers are laid, are represented upon the accompanying drawing.

Figure 1, represents the place of the carding machine for depositing the layer of lengthwise fibers; and 7 the doffer cylinder of such a machine. Fig. 2 represents the place of the carding machine for supplying the slivers, which compose the layer of crosswise fibers, and a top view of the Arnold machine patented July 15th 1829 reissued March 18th 1850 and as improved by me (for which improvement I filed an application for a patent, with specifications and drawings, on the 2nd of April 1857) attached to the doffer cylinder A, A, of such carding machine. Fig. 3 shows a top view of my diagonal machine, patented April 14th, 1857, in position to lay the fibers in a diagonal position, and attached to the doffer cylinder (Fig. 6) of a carding machine, placed for that purpose.

Numbers 4,—5, are the apron cylinders and T—8, the apron and the bat, moving from right to left, or from the diagonal toward the transverse machine. The manner in which the straight or lengthwise fibers are laid, is shown by the red lines in Fig. 1, that layer passing around, on the under surface of the apron. The manner in which the layer of diagonal fibers is laid upon the layer of lengthwise fibers, is shown at T; and the manner in which the layer of transverse fibers are laid upon that, is shown at 8. The angles of the diagonal fibers can, and should, be made to fall in a different relative position in each layer,—by adjusting the length of the apron,—so that the diagonal fibers of the different layers will cross each other in alternating directions. For such a description of the diagonal machine Fig. 3 as will enable a mechanic to build and apply one in this combination, I refer to the specification on record in the Office, and accompanying my application for the patent, granted April 14th, 1857,—the letters being the same; and for such a description of the Arnold machine, I refer to the specification accompanying my application for a patent filed April 2nd, 1857, or to the specifications of the Arnold patent therefor, reissued on the 17th day of March 1857—deeming it unnecessary prolixity to recite these specifications in this, inasmuch as my claim, herein, is for a mode of producing an effect, by a combination of machines, which are patented, and the descriptions on record, or on file.

I do not claim the method of forming a

bat of fibers deposited lengthwise, for that is open to the public; nor the method of forming a bat by alternating layers of lengthwise and transverse fibers, for that is covered by the Arnold patent referred to; but

What I claim and desire to secure by Letters Patent is,—

The arrangement of the machines (Figs. 1, 2, and 3,) or their equivalents, in the manner substantially as described; operating in combination for the purpose of forming a bat, by the interposition of a layer or sliver of diagonal fibers between the alternating layers of longitudinal and transverse fibers as set forth.

THOS. B. BUTLER. [L. S.]

Witnesses:

T. P. WILDER,

JEREMY W. BLISS.