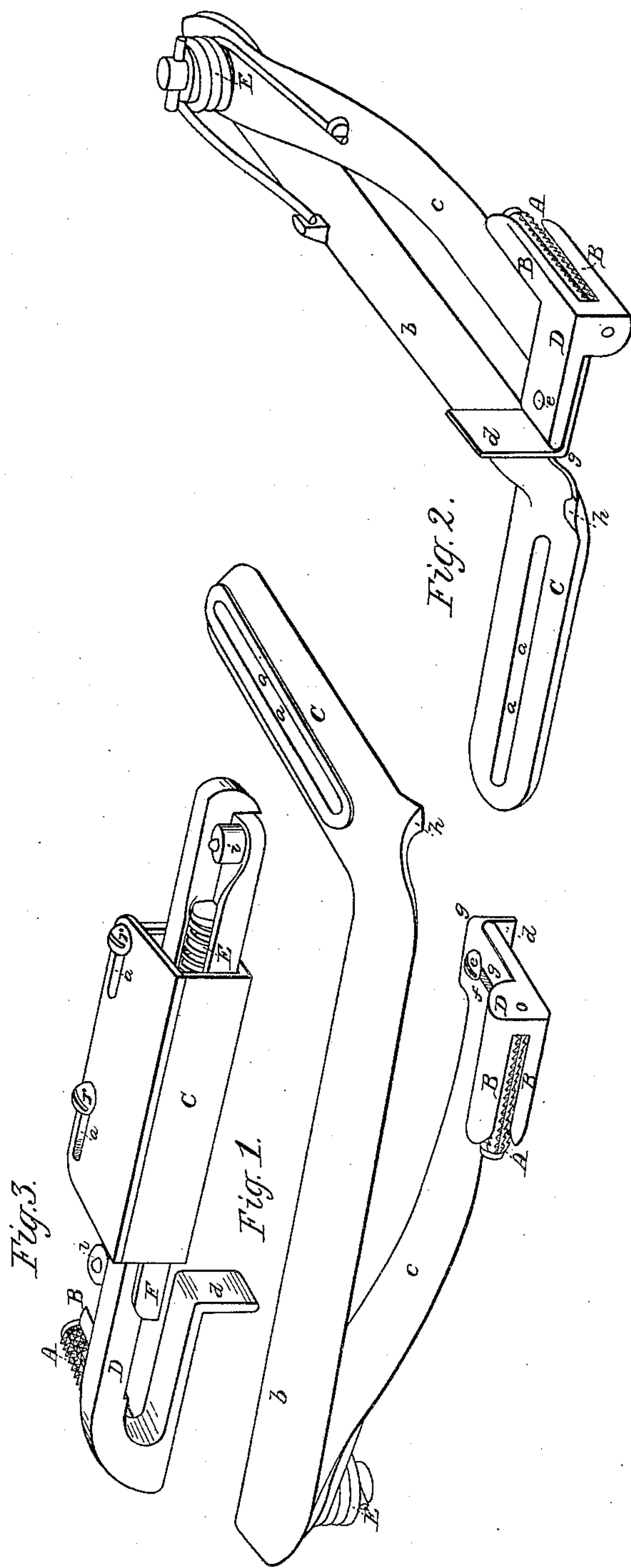


*E. & W. W. Dutcher.*  
*Loom Tensile.*

*Sheet 1-2 Sheets.*

*Nº 9502.*

*Patented Dec. 28, 1852*



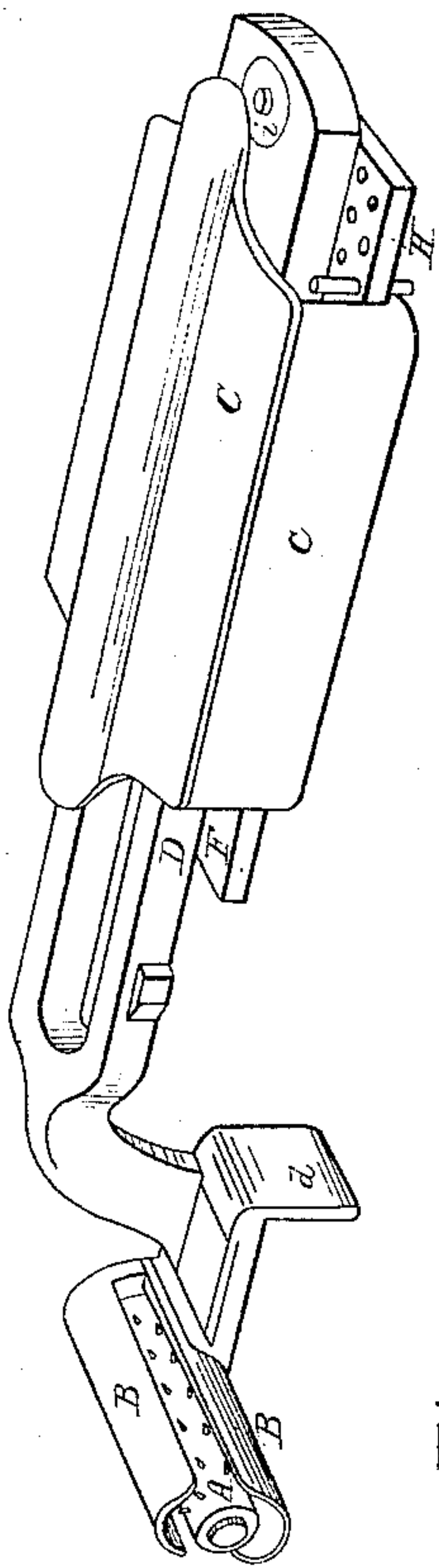
*E. & W. W. Dutcher.*  
*Loom Tangle.*

*Sheet 2-2 Sheets.*

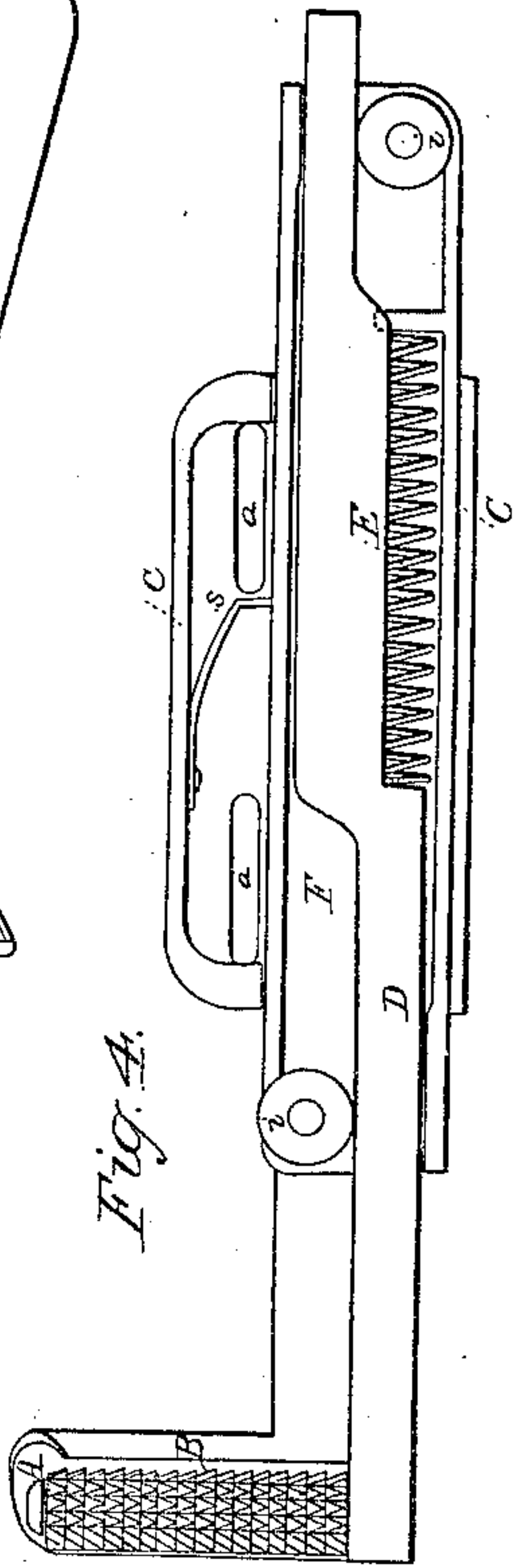
*Nº 9,502.*

*Patented Dec. 28, 1852.*

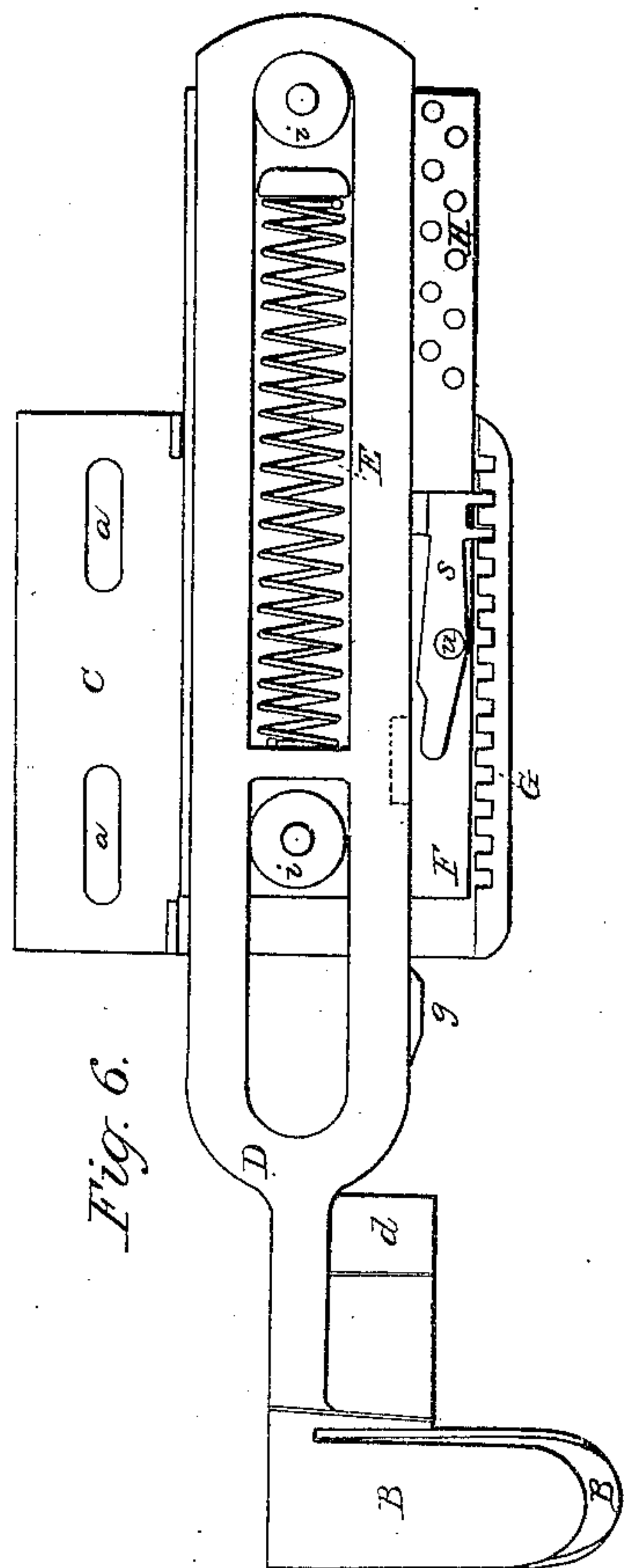
*Fig. 5.*



*Fig. 4.*



*Fig. 6.*





# UNITED STATES PATENT OFFICE.

ELIHU DUTCHER AND WARREN W. DUTCHER, OF NORTH BENNINGTON,  
VERMONT.

## IMPROVEMENT IN TEMPLES FOR LOOMS.

Specification forming part of Letters Patent No. 9,502, dated December 28, 1852.

*To all whom it may concern:*

Be it known that we, ELIHU DUTCHER and WARREN W. DUTCHER, of North Bennington, in the county of Bennington and State of Vermont, have invented certain new and useful Improvements in Temples for Looms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form part of this specification, and in which—

Figure 1 is a view in perspective of our improved temple as seen from the upper side; Fig. 2, a view in perspective of the same as seen from the under side. Fig. 3 is a view in perspective of a modification of the same improvement; Fig. 4, a top view or plan of the same modification with the upper plate or cover of the case removed. Fig. 5 is a view in perspective of a further modification, and Fig. 6 a top view thereof with the cover removed.

Our invention consists in arranging a reciprocating "roller-temple" so as to accommodate itself to the back-and-forth or yielding motion of the cloth as produced by the beat of the lay, whereby the temples may be set up closer than usual to the reeds without danger of the latter being damaged by striking the former.

In the drawings, the roller A of the temple is provided with oblique teeth on its periphery, or may be studded with needle-points, according to the description of cloth they are designed to be applied to. Each roller is mounted within an arched sheath B, between which and the roller the selvage of the cloth runs to be held and stretched in the usual manner. In rotary temples permanently connected with the breast-beam it is obvious that the toothed rollers must be kept at a considerable distance from the reeds when beating up against the cloth to prevent the reeds from hitting the temples. By such an arrangement the temples are prevented from stretching the cloth as close to the weaving-point as in many descriptions of woollen and other thick cloth is desirable in order to lessen the tendency of the cloth to contract by the beating up. To admit, therefore, of the temples being brought up closer to the reeds we propose to give the temples a reciprocating action, whereby in the forward stroke of the

lay they may be worked back clear of the reed, and in the back movement of the lay they spring or move toward the receding reed. For the accomplishment of these results the temples may be connected to the breast-beam by the devices represented in Figs. 1 and 2, consisting of a stand C, which is designed to be stiffly but not immovably fixed on or across the breast-beam by bolts, securing it thereto and passing through a slot *a* in the stand, which has an arm *b* branching at a right angle, or nearly so, from it. On the extremity of the arm *b* is hinged or jointed a second arm *c*, having at its outer extremity a heel *d*, bending downward, and to this extremity of the arm *c* is affixed by a screw *e*, passing through a slot *f*, the frame D, carrying the toothed roller A and sheaths B, as already described. A coiled spring E is attached to the arms *b* and *c* in such manner as will give them a tendency to diverge. The stand C being bolted to the breast-beam of the loom, the roller A is first adjusted in relation to the heel *d* by means of the screw *e* and slot *f*, so that the measure from the front of the roller to the heel shall be enough less than the width of the "race-board" to prevent the reed from hitting the temple. The stand is next pushed up toward the reed by sliding it on the bolts that pass through the slot *a* until the front of the temple is even with the line to which the lay beats up. The front of the race-board when the lay beats up will then press against the heel and turn the arm of the temple back a distance equal to that which the cloth yields, thus producing a motion of the temple corresponding with and equal to the motion of the cloth, the lay in its forward stroke as it beats up the weft causing the temple to recede from the advancing reed by pressing in the arm *c* closer to *b* until the projection *g* on the heel nearly hits a projection *h* on the front end of the stand C; but on the back-stroke of the lay the spring E, which was compressed in the forward stroke, will throw the arm *c* out from *b*, thereby causing the temple to follow up the receding reed with the cloth, so that the web will be held by the temples close to the cloth-making point, so that the tendency of the latter to contract by the beating up of the weft will consequently be diminished.



The manner in which the roller-frame D is affixed to the arm *c* by the screw *e* and slot *f* admits of the roller being set at any required distance from the heel *d*, according to the relative positions of the reed and front side of the race-board, so that the race will hit the heel before the reed strikes the roller and shield.

Various modifications of this reciprocating temple may be adopted, one of which is exhibited in Figs. 3 and 4 and another in Figs. 5 and 6. In these modifications the reciprocating action of the temple is rectilinear; but the working of the temples is mainly the same, the mechanical arrangements merely being different. A brief description of these modifications will therefore be sufficient.

In Figs. 3 and 4 the toothed roller A and its sheath B project sidewise from the frame on bar D, which is made crooked at the front end to form a heel *d* for the front of the lay to strike, as before, the bar D extending backward and being guided through a frame F by rollers *i i*. The bar D thus arranged travels backward and forward lengthwise through the frame F as the heel *d* is struck by the lay, or a spring operates it in the opposite direction, thereby producing a reciprocating rectilinear motion. The frame F is seated within a case C, forming the "stand," which is set crosswise of the breast-beam to its proper position forward by screws *r r* passing through slots *a a*. In the regular working of the temple the frame F is immovable as regards its connection with the stand C; but to avoid breakage of the reeds should the shuttle stop short in its flight the frame D, in being pressed forcibly back, strikes the frame F and gives the temple increased back action by releasing the frame F from its connection with the stand C and driving it backward, the connection between the frame F and the stand being established by a spring-catch *s*, that bites into a notch in the side of the bar D and that is released from its bite by the concussion of the frames D and F striking. Figs. 5 and 6 illustrate a similar arrangement of devices, A being the toothed, roller B the sheaths, *d* the heel at-

tached to the sliding bar or frame D, which reciprocates longitudinally through a box or frame F. *i i* are guide-rollers for directing the travel of the bar D, E the spring for giving the alternate motion to the bar D, C the stand or case inclosing the box F and connected with the breast-beam by screws fitting through slots *a a*. The operation of these parts is the same as those in Figs. 3 and 4; but the connection of the box F with the stand is slightly different, it being made by a two-armed pawl or catch *s*, hung on a fulcrum *u*, attached to the box F, the one end of the pawl having teeth which bite into notches or between teeth of a rack G, arranged in the interior along one side of the stand, and the box F being released from its connection with the stand when the shuttle stops short, as before, by a projection *g* on the side of the bar D striking the front arm of the pawl, which is thereby thrown out of gear with the rack G, and thus permits the box F, together with the bar D, to slide back through the stand, the box F being adjusted to its proper position forward by gearing the pawl *s* with the rack G in any position required, and which when once set may be returned to the same position after the box F has been moved by means of a stop-pin fitted through any one of a series of perforations in a side plate H, the said stop-pin butting up against the back of the stand when the box F is pushed forward to its original position.

Having thus described our improved weaver's temple, what we claim as new therein, and desire to secure by Letters Patent, is—

The arrangement of parts so that the temples have a reciprocating action corresponding with the motion given to the cloth by the beat of the lay, substantially as herein set forth.

In testimony whereof we have hereunto subscribed our names.

ELIHU DUTCHER.

WARREN W. DUTCHER.

Witnesses:

L. G. WELCH,

A. DOTY.