H. Burnham.

Spinning Mach.

No. 2,680. Patented Jun. 22, 1842.

Fig. 1

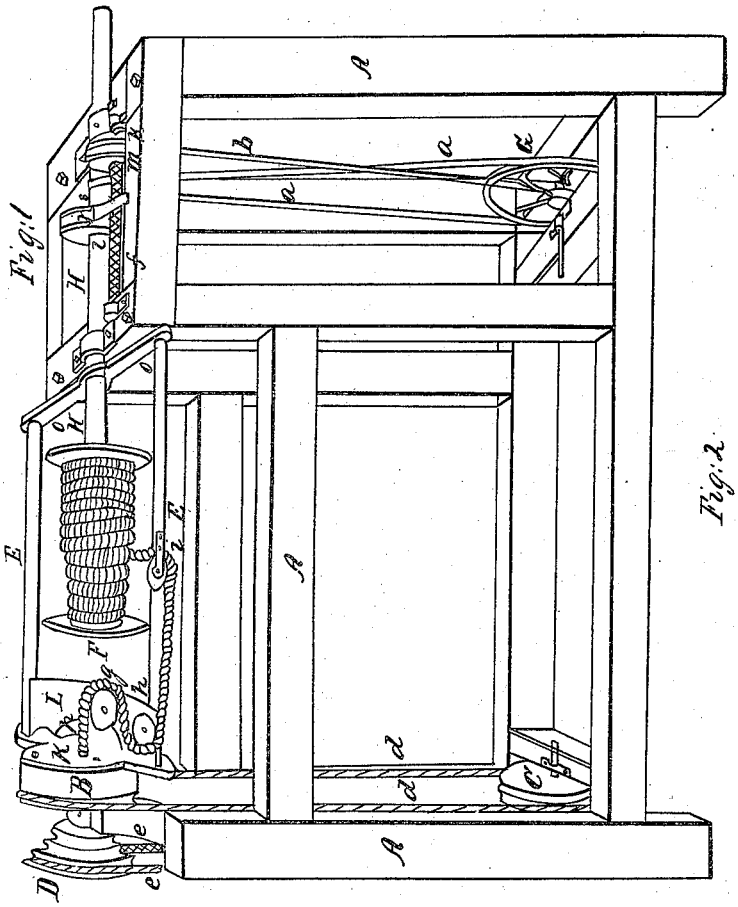


Fig. 2

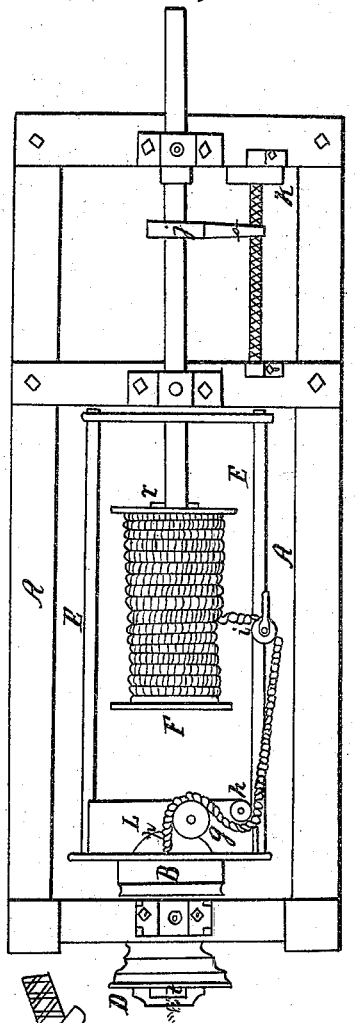


Fig. 3

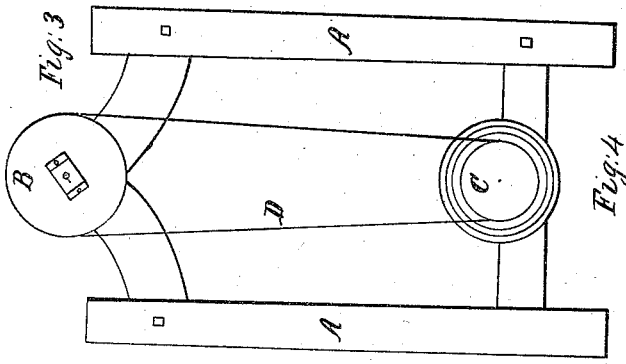


Fig. 4

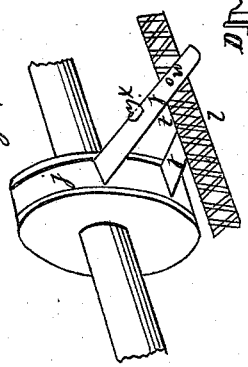
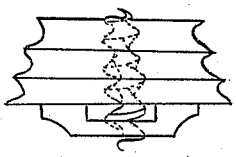


Fig. 5

Fig. 6



UNITED STATES PATENT OFFICE.

HIRAM BURNHAM, OF NEW YORK, N. Y.

MACHINE FOR SPINNING, TWISTING, AND KINKING HAIR.

Specification of Letters Patent No. 2,680, dated June 22, 1842.

To all whom it may concern:

Be it known that I, HIRAM BURNHAM, of the city, county, and State of New York, have invented a new and useful machine for spinning, twisting, and kinking hair for the use of upholsterers in making mattresses and for any other uses to which such hair can be applied; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification.

Figure 1 is a perspective view of the machine entire.

A A A, &c., represent the frame; B, the driving pulley, which gives motion to the machine by a belt, either from above or below, as most convenient.

As the hair is spun, it passes into the machine through the conic pulley D, Fig. 1 and Fig. 2, having received a slight degree of twist, by the revolutions of said pulley. This pulley is operated and the first twist given, by the band *e e* in connection with the inverted conic pulley C, the large end only of which is seen, and which receives its motion by the band *d d*, from the main or driving pulley B, by passing around the end of the same. In the center of the pulley D is a spiral worm, which worm is separately shown at Fig. 5, and its situation shown by dotted lines on said pulley as Fig. 6. As the hair enters said pulley with its first slight twist it passes in going through it around the said spiral worm receiving thereby an inclination to kink, and while the main pulley B and the fliers are giving it additional twist, the kinking is completed into compact cord.

The ratio of increase between the outer or first twist and the second, which completes the kinking is regulated by changing and adjusting the band *e*, *e*, in the different scores of the two inverted conical pullies.

The fliers are fast connected with the main pulley by the plate K which is circular and in size corresponding with the end of said pulley to which it is firmly attached, by screws or otherwise, and having a projection from two opposite edges to which the two rods or horizontal bars E E which constitute the fliers, are attached, the opposite ends of said rods being attached to the cross bar, *o*, *o*, which has a circular expansion in the center, through which the main shaft H H passes, the fliers revolving on the shaft without communicating their motion to it.

At the head of the fliers, where the cord of kinked hair issues from the kinking operation, is a board or plate of wood or metal, L, Figs. 1 and 2, the ends of which are attached to the rods of the fliers, and one edge closely adjoining the main pulley. In the center of the length of this board is a semicircular space, *p*, cut out of the side next the pulley to give the kinked hair room to pass out, and as a further preventive of obstruction, the board is bent so as to remove the edge from before the passage. On this board is a pulley around which the hair passes at *q*, and turning outward passes around the pulley *h* which is attached to the rod of the flier, and passing along the rod to the pulley *i* again turns and is wound on the spool F by the inclination of said spool to remain at rest as the fliers revolve around it.

The spool is attached to the main shaft, as seen at *r*, Fig. 2 by a small projection from the end of the spool through which a pin passes and also through the main shaft, by which the shaft is made to revolve with the spool, as the latter is drawn around by the cord of hair.

To effect the traverse, by which the cord of hair is wound on the spool, alternately from end to end, the main shaft is made to traverse lengthwise the necessary distance, carrying the spool with it, which is thus effected. The belt *a a*, Fig. 1, passes over the shaft at *s*, Fig. 1, and around the wheel G, at the bottom, by which said wheel receives a reduced motion. On the axis of this wheel is a small pulley, giving motion, by the belt *b* to the pulley *k*, which pulley is attached fast to the right and left screw *l*, which is seen more distinctly at *l*, Fig. 4.

j j j represent a thin steel spring embracing a fast pulley on the main shaft, the upper end of which projects forward and rests on the screw, as seen at *w*, Fig. 4, and at *m*, Fig. 1. The opposite end of the spring projecting forward under the screw, the two ends are drawn together by the bolt and thumbscrew *x*, Fig. 4 which spring and screw serve by friction against the main shaft to adjust and regulate the taking up. On the underside of the end of the spring which rests upon the screw is a pin which

fits the concave thread of said screw, by which means, as the screw revolves, the said fast pulley and the shaft with it are carried right and left. If the traverse advances too fast, the screw is tightened and the friction increased and vice versa.

Fig. 2 shows a bird's-eye view of the principal parts of the machine, lettered the same as in Fig. 1.

Fig. 3 is an outline of the front or working end of the machine A A, the frame, B, the upper conic pulley, through which the hair enters, and which contains the spiral worm; C, the lower conic pulley, which transfers the power from the pulley B, to the said upper conic pulley by the bands, *d*, *d*, in Fig. 1, and D in Fig. 3.

Fig. 4 represents the apparatus producing the traverse, consisting of the fast pulley on the main shaft with the spring *j j j*, the reciprocating screw *l* and the thumb-screw *x*.

Figure 5 as has been already stated, the spiral worm.

What I claim as my invention and desire to secure by Letters Patent is—

1. The method of giving the first twist, or kink to the hair, by passing around the spiral worm in going through the first conical pulley as described.

2. I also claim the spiral around which the hair passes in combination with the conical pulley and also with the main pulley and flier, for the purpose and in the manner described.

HIRAM BURNHAM.

Witnesses:
H. HUNT,
W. B. THOMPSON.