

J Taggart. Braiding Mach.

N^o 52,936.

Patented Feb. 27, 1866.

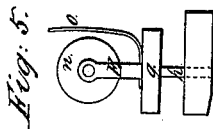
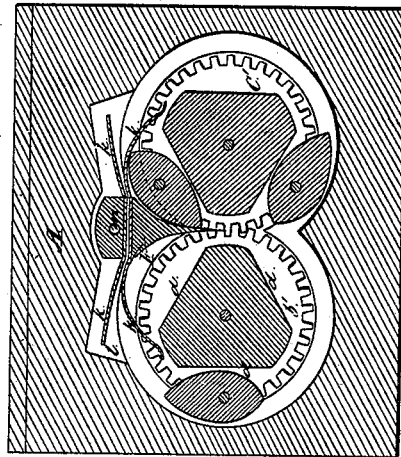
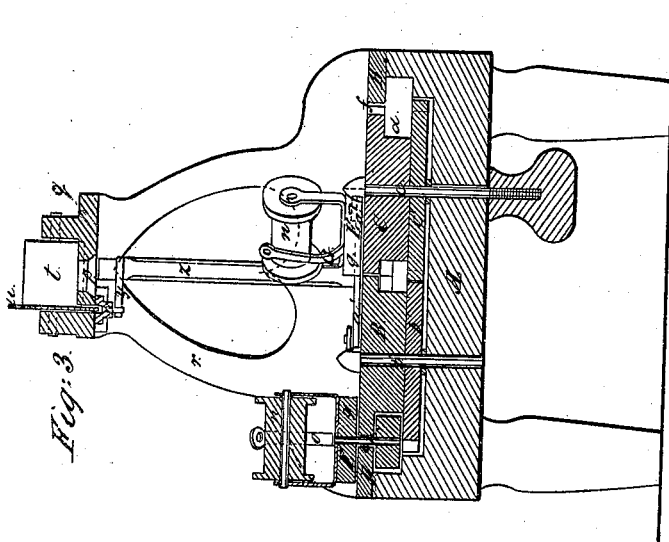


Fig. 4.

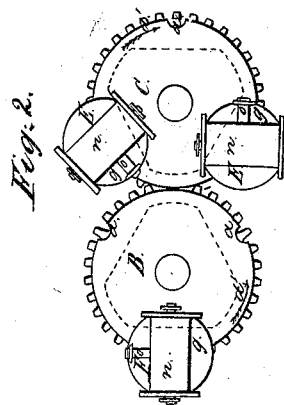
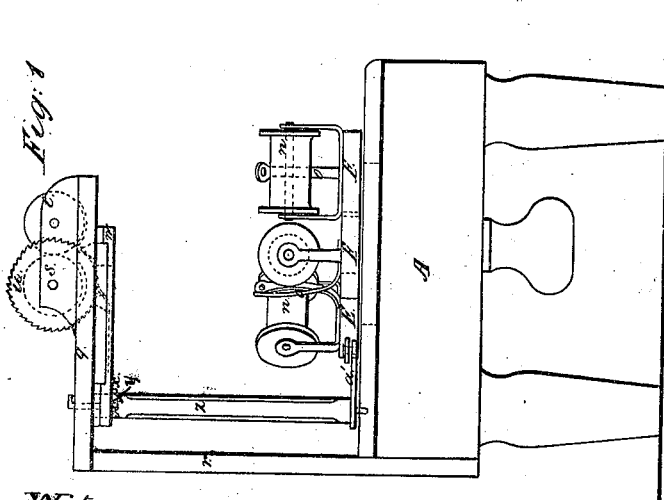


Fig. 2.

Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN TAGGART, OF ROXBURY, ASSIGNOR TO HIMSELF, J. H. LESTER, AND
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IMPROVEMENT IN BRAIDING-MACHINES FOR MAKING THREE-STRAND BRAID.

Specification forming part of Letters Patent No. 52,936, dated February 27, 1866.

To all whom it may concern:

Be it known that I, JOHN TAGGART, of Roxbury, in the county of Norfolk and State of Massachusetts, have invented a new and useful Machine for Making Three-Strand Braid; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is an end elevation; Fig. 2, a top view of the carrying-plates and their racers. Fig. 3 is a vertical section taken through the carrying-plates. Fig. 4 is a horizontal section taken through the frog and the feet of the racers. Fig. 5 is a side view, and Fig. 6 an under-side view, of one of the racers.

In these drawings, A denotes the frame of the machine, it being suitably constructed for supporting the operative parts upheld by it.

B and C are two circular disks or racer carrier-plates, arranged close together at their peripheries and horizontally in the bed-plate of the frame A. Each of these plates B C has three notches or recesses, *a a a*, made in its circumference, and at equal distances apart, those of one carrying-plate being so arranged with respect of those of the other as to cause each, during each revolution of the plate, to come into such contiguity with some one notch of the other plate as to open into it in a manner to enable a racer to pass from the one notch of one plate into the other notch of the other plate.

The two plates are arranged in a bed-plate, D, and are mounted on vertical axes or shafts *b c*. Each of the said plates is provided with three recesses, *d d d*, for receiving the feet of the racers and maintaining them in their due positions to act with the frog. The plates B C run in two openings, *e f*, made in the plate D, and arranged and formed so as to communicate with each other in manner as shown in the drawings.

Three racers, E E E, are employed with the plates B C. The base *g* of each racer rests on the plate D, and also on one of the disks B C, the neck *h* of the racer being extended through one of the notches of the disk on which the racer may be sustained. The foot of each racer, formed as represented in Figs. 5 and 6, extends below the plates B C, and is arranged in the same plane with a frog or switch, F,

provided with four springs, *k k k k*, firmly secured in or to it and projecting from it, so as to be free to vibrate, and being formed and arranged with respect to it and in a recess, *l*, of the frame, as shown in Fig. 4. The frog, disposed as represented, is supported by and so as to be capable of being vibrated horizontally on a vertical pin, *m*. While each racer is in movement its broader end is in advance of its narrower one.

Each of the racers carries a spool, *n*, and a strand-guide, *o*. The strand from each of the spools, after going through the eye of the guide *o*, is to be extended upward through an elongated opening or slot, *p*, made vertically in a plate, *q*, arranged over the bed-plate and above the spools and projecting from a standard, *r*. From the slot the three strands go between two take-up rollers, *s t*, on the shaft of one of which there is a ratchet, *u*. A spring-pawl, *v*, attached to a slide, *w*, engages with the ratchet. The slide is placed underneath the plate *q* and duly supported so as to be capable of being moved longitudinally. It has two pins, *x x*, projecting from it. An arm, *y*, from a vertical shaft, *z*, extends between these pins. Such shaft, at its lower part, has two other arms, *a' a'*, projected from it in manner, and in the plane of the circular bases of the racers, as exhibited in the drawings.

The two carrying-plates B C of the racers have gears *b' c'* applied to their shafts and made to engage with each other, these gears being each alike in size and number of teeth.

By revolving one of the said shafts so as to put the carrying-plates simultaneously in revolution in the direction denoted by the arrows *d' d'* we shall cause each of the racers to travel through the entire raceway or circuit about the two plates, and not only do thus much, but accomplish it without interference from either of the racers. Furthermore, each racer-foot, after the passage of its racer from one into the other circle of the circuit or raceway, will so act against one of the frog-springs as to set the frog and hold it in its due position for it to guide the next approaching racer into that circle of the circuit from which the previous one may have just departed. And by the action of the circular bases of the racers against the lower arms, *a' a'*, alternately reciprocating rotary movements will be impart-

ed to the upright shaft *z*, whereby reciprocating longitudinal movements will be given to the slider *w* and its pawl *v*, the same serving to so operate the ratchet of the take-up rollers as to cause them to take up the braid as fast as it may be formed. If necessary, there may be a retaining-pawl applied to the ratchet for the purpose of preventing it from revolving backward.

The two outer or straight springs *kk* may have inelastic arms or rods substituted for them; but when they are springs instead of rods they render it unnecessary for either of the other two or the curved springs to move so far when moved by the racer-foot as would otherwise be the case.

In acting against either of the curved or main frog-springs a racer-foot will move the frog *F* and force the next adjacent straight spring up against the side of its recess, whereby the frog will be held stationary, or substantially so, while the racer-foot may be passing by the curved springs and the next approaching racer may be in the act of being deflected by the frog.

The advantage of employing the movable frog or switch and the setting-springs thereof rather than winglets, as ordinarily made and used in braiding-machines, and for the purpose of deflecting or guiding the racers in the

right directions, or from one race-circle into another, is that one of the setting-springs, while being pressed upon by a racer-foot, will cause the frog to turn on its pin *m*. The said spring and one of the straight springs will next aid in holding the frog set, and will spring under the pressure of the racer-foot so as to allow it to pass on in its course. As the sizes of the racer-feet vary more or less, especially after becoming worn by use, the inequalities will be compensated for by the action of the springs.

I claim—

1. The combination and arrangement of the four springs *k k k k* with the frog *F*, arranged with respect to the racer-circuit substantially as specified.

2. The arrangement and combination of the frog *F* and its four springs *k k k k* with the racers and their operative plates, constructed in manner and so as to operate as specified.

3. The arrangement and combination of the upright shaft *z* and its three arms, *y a' a'*, the slider *w*, and its pawl *v* with the draft-rollers, the three racers, and their operative plates and frog, as specified.

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Witnesses:

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