No. 749,290. PATENTED JAN. 12, 1904.

C. W. HASSLER.

RACER FOR BRAIDING MACHINES.

APPLICATION FILED AUG. 15, 1902.

NO MODEL.

Fig. 1.

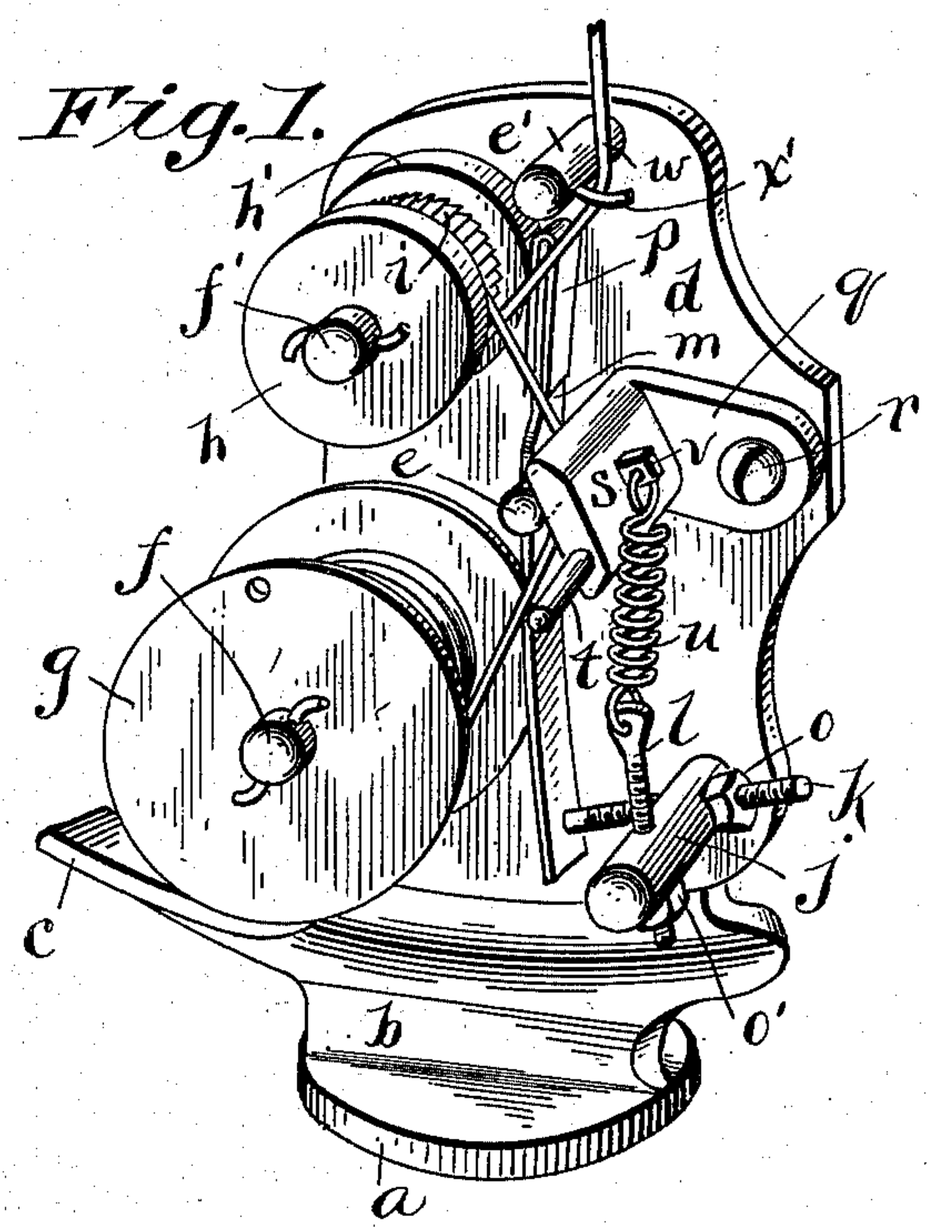
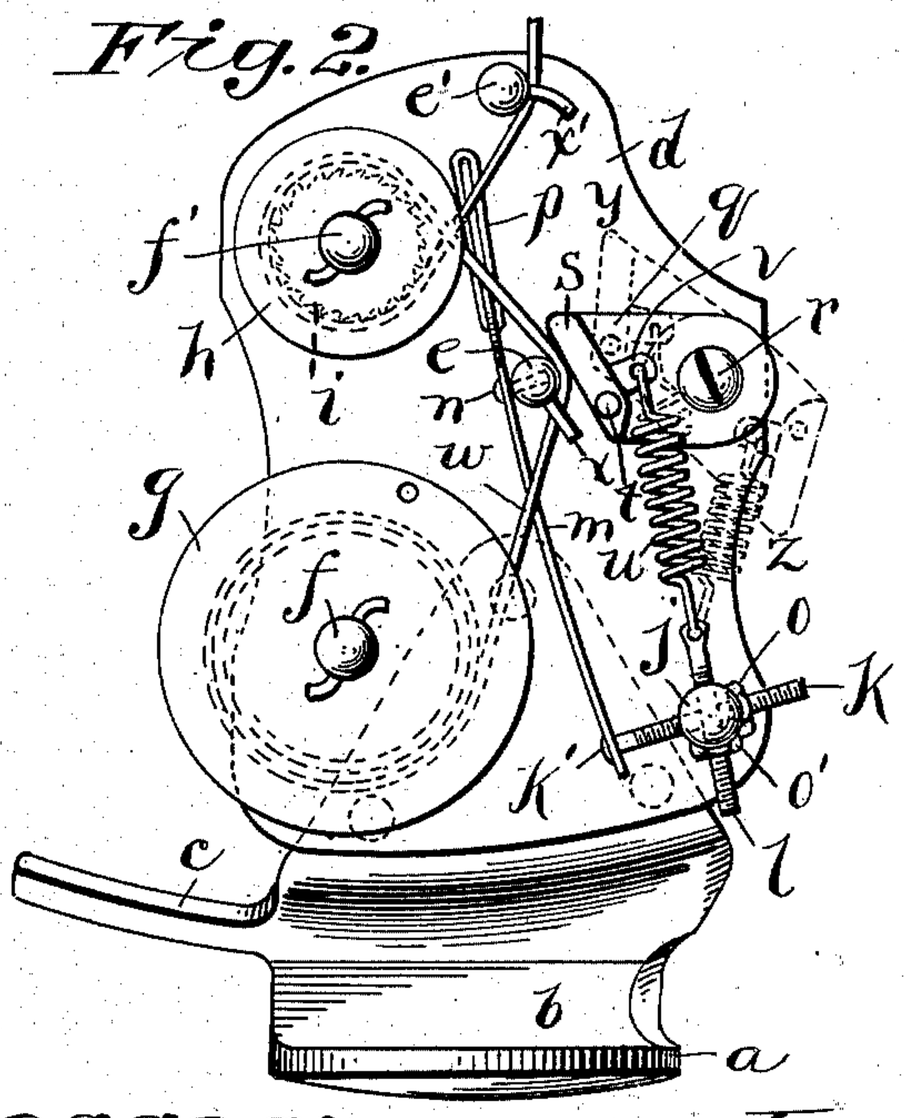


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES W. HASSLER, OF WESTFIELD, MASSACHUSETTS.

RACER FOR BRAIDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 749,290, dated January 12, 1904.

Application filed August 15, 1902. Serial No. 119,766. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. HASSLER, a citizen of the United States of America, residing in Westfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Racers for Braiding-Machines for the Braiding of Whip-Lashes, Whips, &c., of which the following is a specification.

My invention relates more particularly to means for imparting tension to the strand.

The objects of my invention are principally to provide a racer for braiding-machines, which shall be of simple construction and wherein a uniform tension may be maintained, and I accomplish these objects by the construction herein shown.

In the accompanying drawings, in which like letters of reference indicate like parts, Figure 1 is a perspective view of a racer embodying my improved construction. Fig. 2 is a front elevation of the same.

In the construction of my device the usual foot *a*, shank *b*, guide *c*, plate *d*, and reel or spool *g* are employed. A tension-wheel, preferably comprising the parts *h*, *h'*, and *i*, is mounted upon a post *f'*, the latter being mounted on the plate *d*. A resilient brake comprising a tension-spring *m* is arranged to bear against the periphery of the tension-wheel at one side of the portion of said tension-wheel which is engaged by the strand, and I prefer that this portion of the spring *m* be provided with a cover or shoe *p*, which may be renewed when required. The intermediate portion of the spring *m* bears against a post *e*, and the end portion of the spring opposite that which bears upon the tension-wheel is in engagement with adjusting means, so that it may be moved and cause the head of the spring to bear with greater or less pressure against the periphery of the tension-wheel, as may be desired, so as to regulate the force required to rotate the tension-wheel. The adjusting means illustrated in the drawings comprises a threaded rod *k*, having a head or upset part *k'* in engagement with the free end portion of the brake-spring *m*, the rod *k* being arranged to pass through a post *j* and having a nut *o* in threaded engagement with the rod. It will therefore be readily seen that the turning of the nut *o* on the rod *k* will cause the head of the brake-spring *m* to bear with greater or less force upon the periphery of the tension-wheel, depending upon the direction in which the nut *o* is rotated. To prevent accidental disarrangement of the tension during the operation of the machine and as a convenient means to lock the nut in position, I provide a recess in the post *j*, adapted to receive the nut, the recess being so shaped as to prevent the rotation of the nut while it is seated in the recess.

The strand to be braided is passed around the tension-wheel a sufficient distance and held with sufficient force to prevent the strand slipping, so that as the strand is drawn out the tension-wheel is compelled to revolve, and the tension is measured by the force required to produce such revolution of the tension-wheel. The portion of the tension-wheel which receives the strand should be roughened or serrated in order to give the best result, and I prefer that these teeth be in the form commonly termed "ratchet-teeth" and be sufficiently sharp at their edges to effectively prevent slipping of the strand, yet they should not be so sharp as to cut or in any manner injure the strand. I prefer also that the central portion *i* of the tension-wheel be of less diameter than the side portions, this being a convenient means of maintaining the strand in the desired position on the tension-wheel and preventing its accidental movement laterally from the desired position. It will be observed that by this arrangement of tension device the regulation of the tension is not dependent upon the degree of pressure placed upon the strand itself, but is dependent solely upon the degree of pressure exerted between the head of the resilient tension-spring brake and the periphery of the tension-wheel against which the head bears. I attain the best result by carrying the strand almost completely around the tension-wheel, although a like result might be attained if the strand passed around the tension-wheel to a greater or less extent, it being necessary, however, in all cases that the strand should bear against the periphery or be wrapped around

the tension-wheel a sufficient distance to cause said wheel to rotate as the strand is drawn out, and thus the restrained tension-wheel will exert the necessary restraining effect upon the strand in its passage to produce the desired tension.

For convenience in some instances I employ a guide-post e', which receives the strand after it leaves the tension-wheel, and its position with reference to the tension-wheel will govern to some extent the amount of wrap of the strand around the tension-wheel. In the illustration I have shown it so arranged that the strand is guided away from the tension-wheel after the strand has passed almost around the latter. The tension device is, however, operative without the employment of the guide-post e'. To prevent the strand from accidentally moving laterally off the end of the guide-post e', I provide the guide-post with a pin x'.

In order to prevent the accidental slipping of the strand or thread upon the periphery of the tension-wheel, thus destroying the tension, I provide means for holding the strand taut to a limited extent. This may be accomplished in various ways, and any means which will prevent such slipping will be sufficient to put the tension-wheel in operation and utilize the benefits of my invention. A convenient device to prevent such slipping comprises a post e, over which the strand or thread passes, and a latch pivotally mounted on the plate and bearing toward said pin, so as to bear against the strand with the desired pressure. I prefer to hold this latch in its bearing position by the employment of a spring u, one end of which is attached to the lug v on head s of the latch and the opposite end to a bolt l, having a threaded portion which passes through the post j and is provided with a nut o', resting within a recess similar to that before described with reference to the nut o. The latch may be provided with a finger-piece t to render it more convenient to turn it upon its pivot r out of position and, if desired, throw it entirely away from the post e, as indicated in dotted lines in Fig. 2. In adjusting the device to give the desired tension the pressure of the latch against the strand should be only sufficient to prevent the strand slipping on the periphery of the tension-wheel, as a greater degree of pressure of the latch against the strand will tend to render the tension uneven, variable, and unreliable. In some instances it is convenient to throw the latch completely out of the way, and for this purpose the latch may be pivoted to the plate, as shown in the drawings, to permit it to be turned away from the post e to the position shown in dotted lines in Fig. 2, and the spring u will then hold the latch permanently away from the post e.

The tension-wheel preferably comprises a construction having a serrated central portion i and two side portions h h' and is mounted on a post f'. The reel g for holding the supply of material to be braided is supported on a post f.

I prefer that the spring-brake m be fastened to the post e loosely by a pin or rivet n and that the post e be provided with a pin x to prevent the accidental displacement of the strand.

The preferred form of latch comprises a base portion q, having a head s, although, as will readily be seen, any other form of latch, whether pivoted or otherwise, will serve the purpose, provided it hold the strand sufficiently to prevent slipping of the strand on the tension-wheel. In the drawings the strand is indicated by the letter w. The letter z indicates the dotted-line position of the latch when it is opened completely away from the post e and held in such opened position by the action of the coil-spring u.

Having therefore described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a racer for braiding-machines, a tension device comprising a supporting part, a rotating tension-wheel supported thereby, and a resilient brake arranged in frictional contact with the periphery of said tension-wheel.

2. In a racer for braiding-machines, a tension device comprising a supporting part, a latch mounted thereon, a stop fixed in the path of said latch, means to force said latch toward said stop, a revolving tension-wheel, and a resilient brake arranged to bear against the periphery of said tension-wheel.

3. In a racer for braiding-machines, a tension device comprising a supporting-plate, a revolving tension-wheel mounted thereon, a resilient brake arranged to bear directly on the periphery of said tension-wheel to retard its motion, and adjusting means for changing the extent of pressure of the brake against the periphery of the tension-wheel.

4. In a racer for braiding-machines, the combination of a suitable supporting-plate, a reel mounted thereon, a rotating tension-wheel, a resilient brake bearing at one end in frictional contact with the periphery of said tension-wheel, a post e mounted on the plate at a point between the ends of said spring and with the spring bearing against the post and means to hold the free end of the spring in position, substantially as shown.

5. In a racer for braiding-machines, a tension device comprising a rotating tension-wheel having its intermediate portion serrated or roughened and the portions at each side thereof of larger diameter than the central portion, and a resilient brake, bearing against the periphery of one of said larger portions of said tension-wheel, and means to regulate the pressure of said brake against said periphery.

6. In a racer for braiding-machines, the combination of a suitable supporting-plate, a

rotating tension-wheel mounted thereon, a resilient brake arranged in frictional contact with the periphery of said tension-wheel, means to regulate the pressure of said brake against said tension-wheel, and means to hold the strand taut with sufficient force to prevent its slipping on the periphery of the tension-wheel.

7. The combination in a racer for braiding-machines, of a suitable supporting-plate, a rotating tension-wheel, a resilient brake bearing with direct frictional contact against the periphery of said tension-wheel, a stop-post *e*, a latch bearing toward the same, a spring adapted to force the latch in the direction of the post, said latch being arranged to be turned completely away from the post and held therefrom by said spring, substantially as shown.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES W. HASSLER.

Witnesses:

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F. A. CUTTER.