

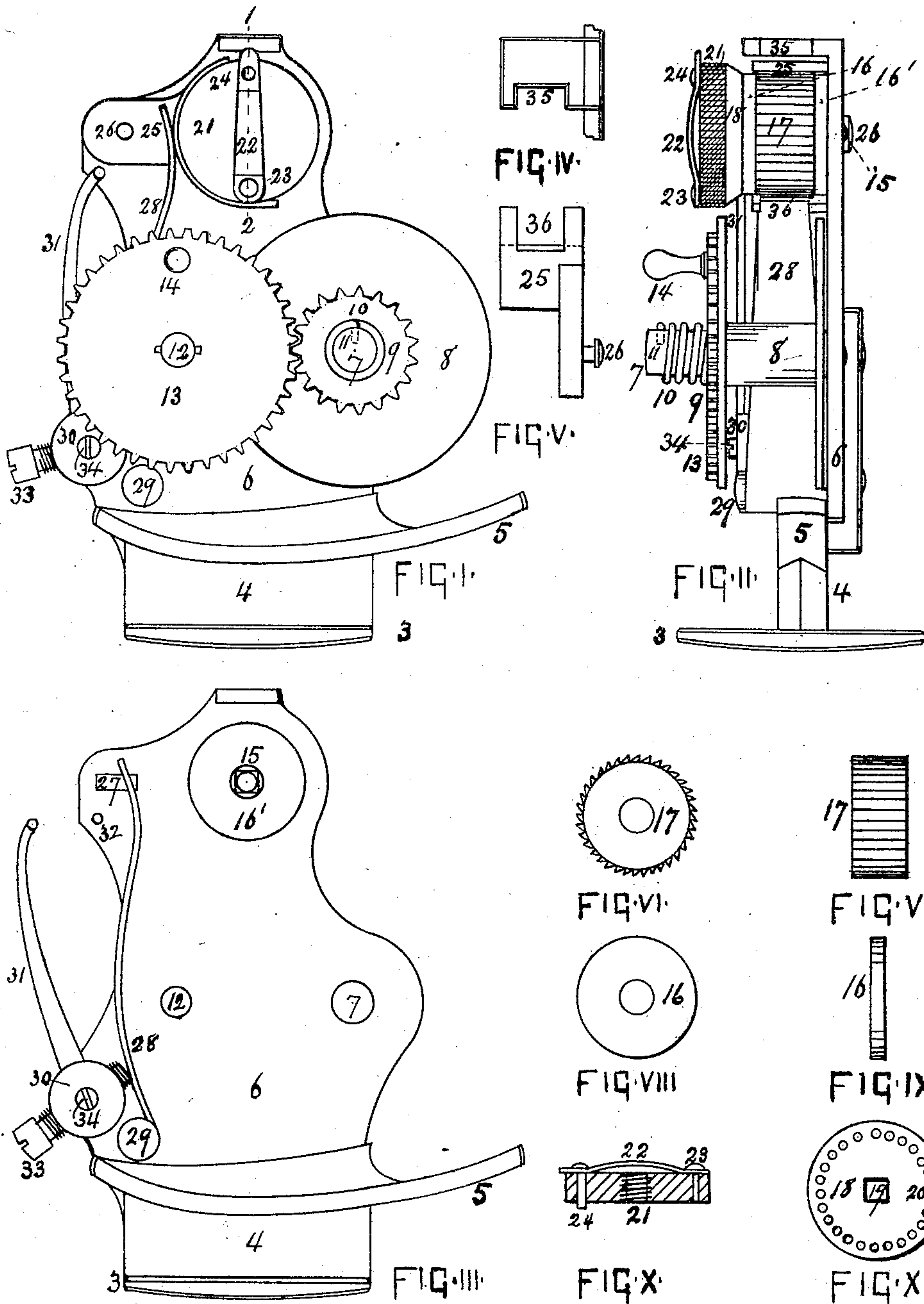
(No Model.)

J. A. TURNER.

RACER ADAPTED TO THE BRAIDING OF WHIP LASHES AND THE LIKE.

No. 432,582.

Patented July 22, 1890.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JULIUS AUGUSTIN TURNER, OF SOUTHFIELD, MASSACHUSETTS.

RACER ADAPTED TO THE BRAIDING OF WHIP-LASHES AND THE LIKE.

SPECIFICATION forming part of Letters Patent No. 432,582, dated July 22, 1890.

Application filed March 25, 1890. Serial No. 345,628. (No model.)

To all whom it may concern:

Be it known that I, JULIUS AUGUSTIN TURNER, a citizen of the United States, residing at Southfield, in the county of Berkshire and Commonwealth of Massachusetts, have invented an Improvement in Racers Adapted to the Braiding of Whip-Lashes and the Like, in which a large thread or strand is used and a strong even tension is practically indispensable.

My improved racer is adapted to be used in machines of the nature of those referred to and described in the patent to Ephraim Sizer, and another, No. 10,718, March 28, 1854. These machines were adapted to and used for the braiding of the covers of whip-stocks and the like, in which case the spool of the racer carried a comparatively small light thread needing but little tension, and that not necessarily even, and the same both when the spool was full and when it was nearly empty; but this arrangement is not adapted to the braiding of whip-lashes, which demands a strong and continuously-even tension, and an apparatus so constructed that the speed or running of the machine shall not change or derange the tension during the operation of braiding.

It is the object of my invention to provide a racer having the requisite tension for the braiding of whip-lashes, which tension will not be changed or deranged by the speed or running of the machine.

The following is a specification of my improved racer, reference being had to the accompanying drawings, in which—

Figure I is a side elevation of my improved racer; Fig. II, an edge elevation of the same; Fig. III, a side elevation of the racer-foot and frame the same as Fig. I, except that the spool with its winding-gear, and the tension-ratchet with its set-nut and dog have been removed; Fig. IV, a plan of a detached portion of the frame, showing the upper guide to the thread or strand; Fig. V, an elevation of the saddle detached and so arranged as to show the lower guide for the thread or strand; Fig. VI, an elevation of the disk of the tension-ratchet detached; Fig. VII, an edge elevation of the last named; Fig. VIII, an elevation of the disk of one of the tension-washers; Fig. IX, an edge elevation of the last named; Fig.

X, a section of the ratchet set-nut through line 1 2 of Fig. I, certain parts being shown in elevation; Fig. XI, a plan of the disk of the dog for holding the tension set-nut.

In carrying out my invention I make use of the same foot 3, shank 4, and tail-piece or guide 5 as are used in the machine of Sizer and others above alluded to, and to these I attach by suitable means or as an integral part the back or frame 6, to support and carry the other parts of the racer. I provide the back or frame 6 with a projecting pivot 7. I also provide the spool 8, adapted to receive the pivot 7 through its central eye and turn thereon. I also provide the outer end or head of the spool with a small toothed wheel or gear 9. I also provide the spiral spring 10, adapted to be arranged on and surround pivot 7, where it is retained by the outer end being pressed into a small hole 11 in pivot 7, as indicated in Fig. II, while the inner end of such spring presses against the gear and spool-head sufficiently to prevent the spool from revolving unless some slight power be applied thereto. I also provide another projecting pivot 12 and a larger toothed wheel or gear 13 adapted to revolve thereon, the pivot 12 being so arranged in the frame 6 that the gears 9 and 13 shall mesh into each other. I also provide the gear 13 with a small handle 14 for turning the gears and thereby the spool without removing it from the racer; and then by providing the quill of the spool with some adhesive wax and placing one end of the thread or strand thereon it adheres and is quickly wound upon the spool. I also provide the frame 6 with another projecting pivot 15 for carrying the tension device proper. I also provide the tension device proper, which is composed of the washers 16 16', the ratchet 17, the dog 18, and the set-nut 21. I make the washers 16 16' of leather, rubber, or other suitable material. They may be dispensed with, but to the detriment of the machine. The ratchet 17 is adapted to revolve on the pivot 15, while the teeth on its rim are adapted to catch or engage the thread or strand as it is pressed thereon and passes thereover. I provide the dog 18 at its center with a square or angular hole 19, whereby it is adapted to the short angular neck of the pivot 15, whereon it is held and prevented from revolving.

I also provide the dog 18 near its rim with a series of holes or recesses 20. I also provide the nut 21 with a spring 22, made fast at one end by a rivet 23 or other suitable means, while the opposite end of the spring is provided with a small tooth or pin 24, extending through the body of the nut and adapted to enter the holes 20 in dog 18. I also provide the outer end of pivot 15 with a male thread or screw, so that it is adapted to receive thereon the nut 21. It is obvious that the more firmly nut 21 is screwed on the more firmly will ratchet 17 be held between such nut and the frame 6, and as the degree of tension depends upon the ease or difficulty with which the ratchet 17 turns on its pivot, the tension will be determined and controlled by the nut 21, and further, as the dog 18 has no revolution on pivot 15, the pin 24 prevents the turning of nut 21, and thereby prevents the change or derangement of the tension during the operation of braiding.

To hold the thread or strand as it is being unwound from the spool firmly in contact with the ratchet 17, I provide the irregularly-shaped piece which I call the "saddle" 25, which has a nearly semicircular fork, the prongs of which embrace the adjacent half of the ratchet 17, while the opposite end of saddle 25 is connected with the frame 6 by means of a bolt or rivet 26, adapted to move to and fro in the slot 27, (shown in Fig. III,) whereby the saddle is permitted to move to and from the ratchet, as it may be affected by the varying size of the thread or strand in process of braiding.

To press the saddle firmly against the ratchet or strand passing between it and the ratchet, so that the ratchet shall be turned by the passing strand, I provide the spring 28, extending from pivot 29, whereon it is adapted to turn for a short distance, and which latter is made fast in or projecting from frame 6. To hold the spring 28 against the saddle, I provide the block 30, pivoted to frame 6, a little to one side of and near the base of spring 28. I provide block 30 with a handle or arm 31, bent at the outer end and adapted to be sprung into and retained by a small hole or recess 32 in frame 6. I also provide the male screw 33, adapted to a female screw in block 30, through which it passes, and, in contact with spring 28, operates as an adjustable cam thereto, whereby the pressure of the saddle against the ratchet or the strand passing between them is regulated

and controlled. I also provide the set-screw 34, which is to set and hold the cam-acting screw 33, so as to permit no change in the action of spring 28 during the operation of braiding. I make the top of the frame 6 to project over and above the ratchet 17, and provide the part so overhanging the ratchet with a slot or recess 35. I also provide the lower prong of the saddle with a similar slot or recess 36, and these slots or recesses operate as the upper and lower guides to hold the thread or strand as it unwinds from the spool directly between ratchet 17 and saddle 25.

The device for turning the cam-screw 33 away from spring 28, and thereby relieving the saddle from pressure, is necessary for the insertion of new threads or strands in the racer as often as the spool is exhausted or emptied.

Thus having described my improved racer, what I claim therein as new is—

1. In a racer, the frame 6, provided with pivots 7 and 12, the spool 8, provided with gear 9, the spiral spring 10, and the gear 13, all arranged and combined in such a manner that the spool 8 may be wound or filled without removing from its place, but is prevented from accidental turning by the spring 10.

2. In a racer, the frame 6, provided with pivot 15, the ratchet 17, the dog 18, nut 21, spring 22, pin 24, and saddle 25, all so arranged and combined as to receive and produce the requisite tension on the thread or strand from the spool 8.

3. In a racer, the frame 6, provided with a pivot 29, the spring 28, the block 30, arm 31, cam-screw 33, and set-screw 34, all so arranged and combined that the screw 33 shall operate as an adjustable cam to produce pressure by means of spring 28 on saddle 25, while for the purpose of adjusting the thread or strand to the tension apparatus the spring 28 may be opened or thrown back from the saddle.

4. In a racer, the frame 6, bent or formed at the top with a recess 35, the ratchet 17, dog 18, nut 21, spring 22, pin 24, and saddle 25, the lower prong of the saddle having therein a recess 36, and all so arranged and combined that the recesses 35 and 36 shall operate as guides to the thread or strand passing between the ratchet and saddle.

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Witnesses:

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