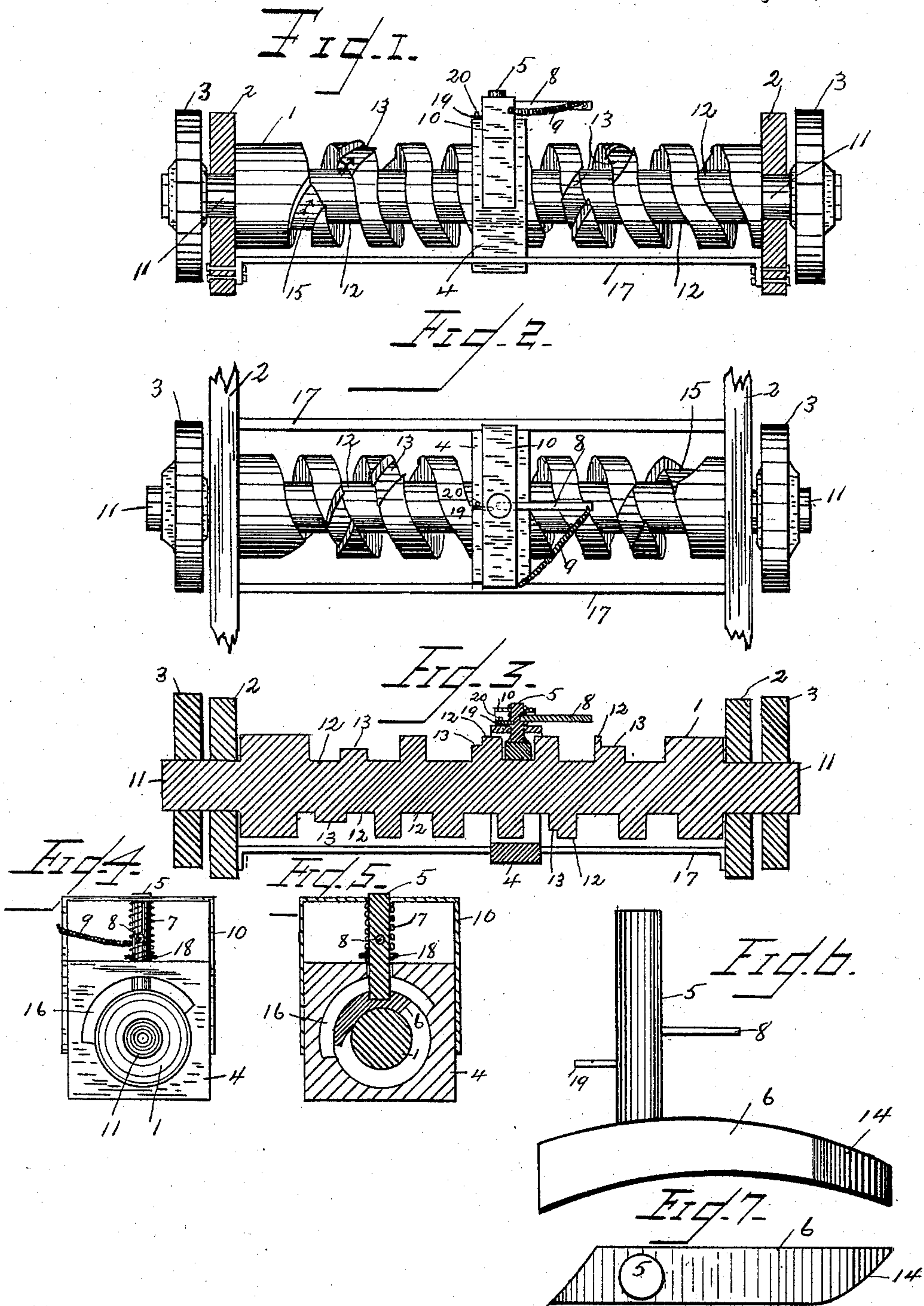


(No Model.)

B. F. & F. B. MARTINDALE.  
REVERSIBLE SCREW MECHANICAL POWER.

No. 585,825.

Patented July 6, 1897.



Witnesses

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# UNITED STATES PATENT OFFICE.

BENJAMIN F. MARTINDALE AND FRANKLIN B. MARTINDALE, OF WICHITA, KANSAS, ASSIGNORS OF ONE-HALF TO RODOLPH HATFIELD, OF SAME PLACE.

## REVERSIBLE-SCREW MECHANICAL POWER.

SPECIFICATION forming part of Letters Patent No. 585,825, dated July 6, 1897.

Application filed September 22, 1896. Serial No. 606,653. (No model.)

*To all whom it may concern:*

Be it known that we, BENJAMIN F. MARTINDALE and FRANKLIN B. MARTINDALE, citizens of the United States of America, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Reversible-Screw Mechanical Power, of which the following is a specification, reference being had therein to the accompanying drawings, and the figures of reference thereon, forming a part of this specification, in which—

Figure 1 is a side view of our improved reversible-screw mechanical power. Fig. 2 is a top plan view of the same. Fig. 3 is a longitudinal section of the same. Fig. 4 is an end view of said mechanical power. Fig. 5 is a cross-section of the same. Fig. 6 is a side view of the screw-nut, and Fig. 7 is a top plan of the same.

This invention relates to certain improvements in reversible screws for mechanical power or motion; and it consists of a cylinder or screw having screw-threads of different depths running in opposite directions, and a nut adapted to run in each of said screw-threads alternately, and means for adjustably holding said nut in each of said threads.

Referring to the drawings, 1 represents the screw or cylinder. 2 represents a portion of a frame in which said cylinder is journaled.

3 represents pulley or driving wheels.

4 represents a driving head-block.

5 represents a standard, with the nut 6 integral at one end. 7 represents a coil-spring for automatically holding said nut 6 in the threads. 8 represents an arm transversely secured to said standard 5. 9 represents a spring, one end secured to the outer end of said arm 8 and the opposite end secured to the standard-support 10. 11 represents the bearings of said cylinder 1. 12 represents a deep thread in said cylinder. 13 represents a shallow thread running in an opposite direction and crossing said deep thread. 14 represents the long end of said nut 6, curved on one side to more readily guide said nut

from one thread to the other in reversing at either end.

15 represents the deep thread at either end running on an incline to correspond to the depth of the shallow thread.

16 represents a portion cut away in the driving head-block 4 to admit of the oscillating and vertical movement of the nut 6.

17 represents a track or guide to prevent the head-block from rotating, thus compelling a lateral movement of said head-block through the medium of the screw and nut.

18 represents a stop or pin secured to the standard 5, through the medium of which said spring 7 holds said standard and nut in the screw-threads 12 and 13.

19 represents a pin projecting out from the standard 5, and 20 represents a pin or lug secured to the sliding head-block.

The deep thread 12 makes larger number of turns around the cylinder in a given distance than the shallow thread, thus giving a larger amount of power to the driving head-block 4 when the nut 6 is in said deep screw, and a greater speed in the reverse movement when said nut 6 is in the shallow thread. The spring 7 is sleeved on said standard 5, with one end pressing against the pin 18, which is secured to the standard 5, and the opposite end pressing against the standard-support 10, thus yieldingly holding said nut 6 in the threads 12 and 13.

The cylinder 1 is rotated through the medium of the driving-pulley 3 or its equivalent. When the nut 6 is in the deep thread and the cylinder is rotated, the driving head-block 4 will be forced from end to end of said cylinder. As shown in Fig. 1, when said head-block reaches the left end of said cylinder, the incline 15 of said deep thread, the nut 6 will yieldingly follow said thread 15, as represented by arrows in Fig. 1, to the shallow thread 13. Said nut is made longer from the standard at one end than at the other and provided with the curved and pointed end, so as to guide said nut 6 from one thread to the other at either end. The spring 9 and



arm 8 are for holding the curved end 14 of said nut 6 against the threads. The pins 19 and 20 are for preventing the spring 9 from drawing said nut 6 too far around.

5 Having thus described our invention, what we claim as new and useful, and desire to secure by Letters Patent, is as follows:

1. In a mechanical movement, the combination of a cylinder having two threads cir-  
10 cumscribing said cylinder in opposite directions, said threads being of different depths, the deeper of said threads having an incline at each end, and terminating the same, connecting it with the shallower thread, a nut  
15 adapted to alternately travel in each of said threads, and a sliding head-block adapted to yieldingly hold said nut in said threads.

2. In a mechanical movement, the combination of a cylinder having two threads cir-  
20 cumscribing said cylinder in opposite directions and at different degrees of angle, said threads being of different depths, the deeper of said threads having an incline at each end, and terminating the same, connecting it with

the shallower thread, a head-block adapted  
25 to move laterally from end to end on said cylinder, a nut yieldingly secured to said head-block, and adapted to ride in each of said threads, and means for guiding said nut from one to the other of said threads. 30

3. In a mechanical movement, the combination of a cylinder having two threads cir-  
cumscribing said cylinder in opposite direc-  
35 tions, and at different degrees of angle, said threads being of different depths, the deeper of said threads having an incline at each end, and terminating the same, connecting it with the shallower thread, a head-block sleeved  
on said cylinder and adapted to move later-  
ally, a nut having a standard, a coil-spring  
40 sleeved on said standard for yieldingly holding said nut in said threads.

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Witnesses:

FRED BROWN,  
RODOLPH HATFIELD.