

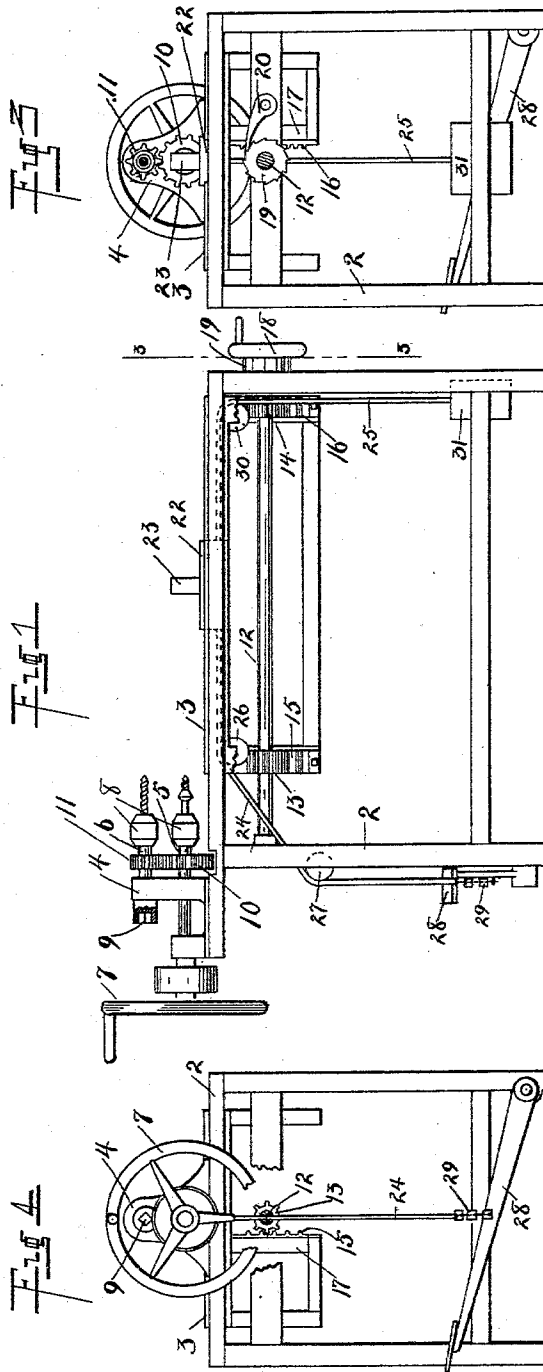
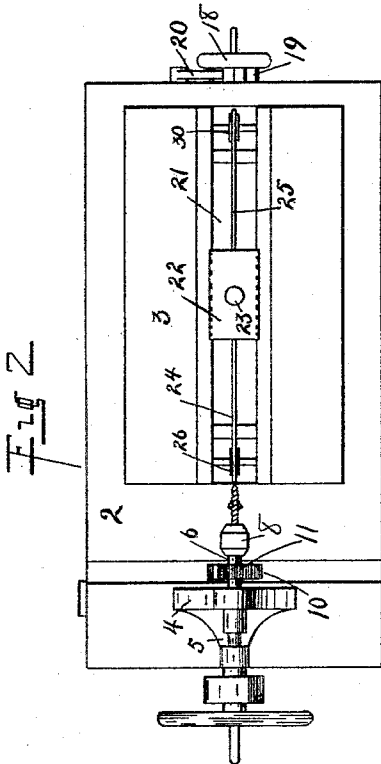
(No Model.)

W. M. HAMILTON.

MACHINE FOR SECURING TIRES TO WHEELS.

No. 563,856.

Patented July 14, 1896.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM M. HAMILTON, OF CONNERSVILLE, INDIANA.

MACHINE FOR SECURING TIRES TO WHEELS.

SPECIFICATION forming part of Letters Patent No. 563,856, dated July 14, 1896.

Application filed November 7, 1895. Serial No. 568,187. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. HAMILTON, a citizen of the United States, residing at Connerville, in the county of Fayette and State of Indiana, have invented a new and useful Machine for Securing Tires to Wheels, of which the following is a specification.

My invention relates to an improved machine for performing the operations necessary for securing tires to vehicle-wheels after the tires have been placed in position on the wheel.

The object of my improvement is to provide a machine whereby the drilling and countersinking of the tire, the boring of the fellys to receive the tire-bolts, and the tightening of the nuts upon the tire-bolts may be conveniently and quickly performed, all as hereinafter fully set forth.

The accompanying drawings illustrate my invention.

Figure 1 represents a side elevation of the machine. Fig. 2 represents a plan. Figs. 3 and 4 represent end elevations.

In the drawings, 2 indicates the bench, having an opening in its top in which is fitted a vertically-adjustable plate 3. Secured to the upper surface of bench 2, at one end, is a boring-head 4, carrying two spindles 5 and 6, arranged one above the other and parallel with the surface of the bench. The lowermost of said spindles, 5, is provided at its outer end with a hand-wheel 7, by means of which it may be turned in its bearings, and each of the spindles is provided with chuck 8 for holding boring-tools. The uppermost of said spindles, 6, is shorter than the other and is provided at its upper end with a socket 9, adapted to receive and hold the nut of the tire-bolt. Spindle 6 is rotated by means of a spur gear-wheel 10, secured to spindle 5, and intermeshing with a pinion 11, secured to spindle 6, the arrangement being such that by the rotation of spindle 5 spindle 6 is rotated at a greater speed.

Plate 3 is mounted so as to slide vertically in bench 2, and is adjusted by means of a shaft 12, mounted in bearings in the bench, and carrying a pair of pinions 13 and 14, which are secured to the shaft so as to turn therewith, and which engage rack-bars 15 and 16,

which are secured to legs 17, projecting downward from the plate. Shaft 12 is turned by means of a hand-wheel 18, and the plate is held in adjustment by means of a ratchet-wheel 19, secured to the shaft, and a pawl 20, pivoted to the frame of the bench and engaging the ratchet-wheel.

Plate 3 is provided, along its center, with a longitudinal slotted way 21, in which is mounted, so as to slide therein, a block 22, carrying a short stud 23, projecting upward from its upper surface. Block 22 is propelled along the way 21 in opposite directions by means of cords 24 and 25. Cord 24 is secured at one end to the block, and, passing forward over guide-pulleys 26 and 27, passes downward to a foot-lever 28, pivoted to the front end of the bench-frame. The lower end of the cord is provided with a short section of chain 29, by means of which the cord may be quickly and adjustably connected with the lever. Cord 25 is secured at one end to the block, and, passing backward over a guide-pulley 30, is secured to a heavy weight 31.

The operation of my device is as follows: The wheel to be operated upon, having its tire in position, is mounted upon block 22, so that the wheel extends horizontally above the bench, the stud 23 entering the center of the hub. Plate 3 is now adjusted vertically, so as to bring the center of the tire opposite the axis of spindle 5. The operator, placing his foot on lever 28, draws block 22 forward until the tire is brought in contact with the boring-tool carried by spindle 5, and, turning said spindle, proceeds to drill and countersink a bolt-hole in the tire, the wheel being fed forward to the drill by a continued pressure upon lever 28. Lever 28 being released the wheel is drawn off from and clear of the boring-tool, and the wheel being turned on stud 23 and the operation repeated, the several bolt-holes in the tire are successively drilled. All of the holes having been drilled in the tire, plate 3 is raised until the center of the tire is brought opposite the axis of spindle 6. The holes previously drilled in the tire are now continued through the fellys, the greater speed of spindle 6 being better adapted for boring through wood. The series of holes having been bored in the fel-

lies the tire-bolts are placed in position, their threaded ends projecting inside the fellyes, and the nuts are started thereon by hand. Plate 3 is now raised until the rim of the wheel is clear of the top of the boring-head. The wheel is then drawn forward, so that the inner edge of the felly will pass downward clear of the outer end of spindle 6, so that by lowering the plate the inner ends of the tire-bolts and the nuts carried thereon may be brought opposite the socket 9 in the end of the spindle. The foot-lever being released the wheel is drawn backward by means of weight 31 until the nut enters the socket, when the operator, turning the spindle 6 by means of the hand-wheel 7 and the intermediate connecting-gearing, screws the nut upon the bolt.

I claim as my invention—

In a machine for securing tires to wheels, the combination of the bench, the boring-head mounted thereon, said boring-head carrying a tool-holding driving-spindle and a

shorter spindle arranged above said driving-spindle and connected therewith so as to run at a greater rate of speed, said shorter spindle being provided with a tool-holding device at one end, and a recess adapted to hold a tire-bolt nut at the other end, the vertically-adjustable plate mounted in said bench, means for adjusting said plate vertically substantially as set forth, the block mounted in ways on said plate and arranged to traverse the plate toward and from the boring-head, means for securing a vehicle-wheel upon said block so that it may turn thereon, the foot-lever pivoted to the bench-frame and connected by a cord with one end of said block, and the weight connected by a cord to the other end of said block, all arranged to cooperate substantially as and for the purpose set forth.

WILLIAM M. HAMILTON.

Witnesses:

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