

No. 671,842.

Patented Apr. 9, 1901.

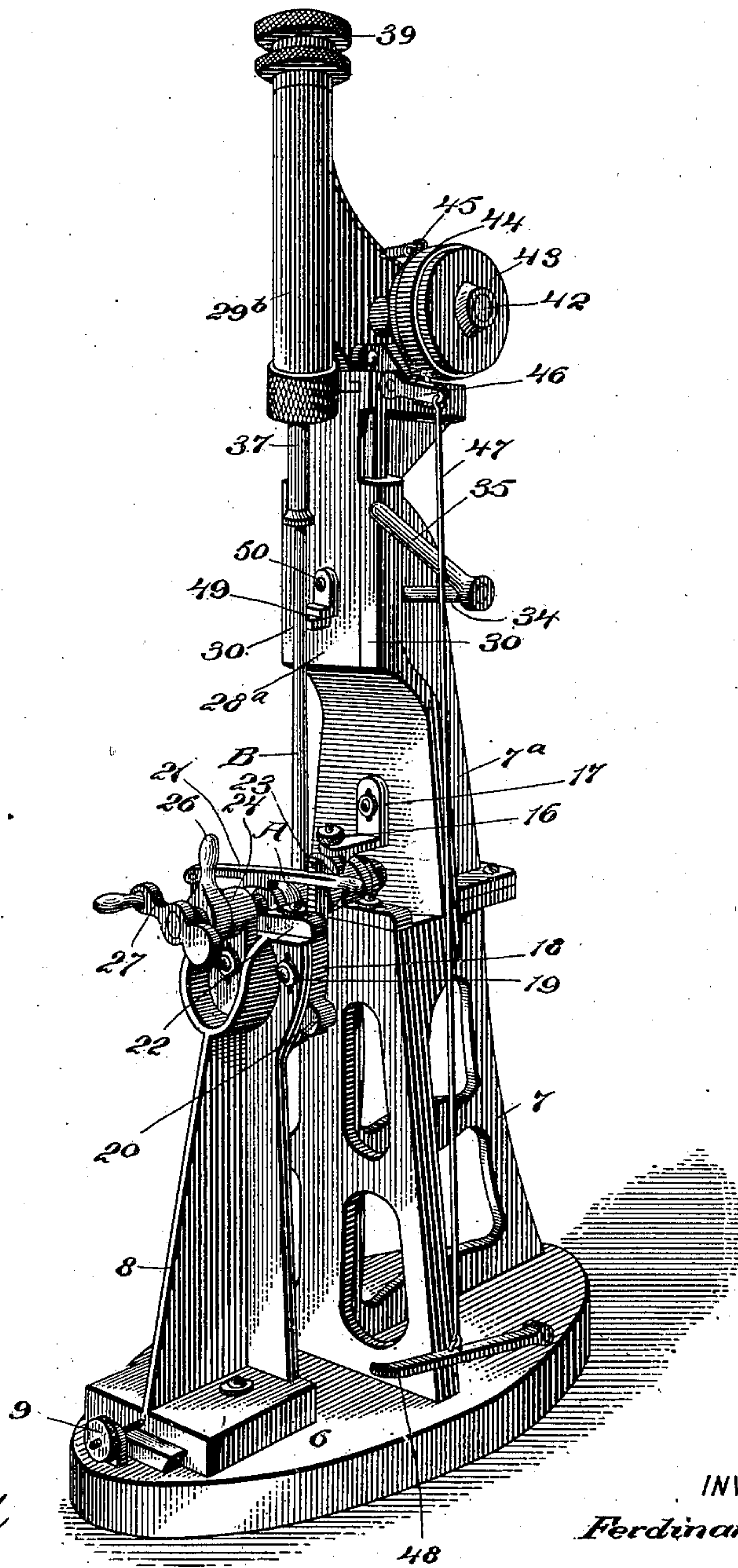
F. UNCKRICH.
SPOKE DRIVING MACHINE.

(Application filed Nov. 13, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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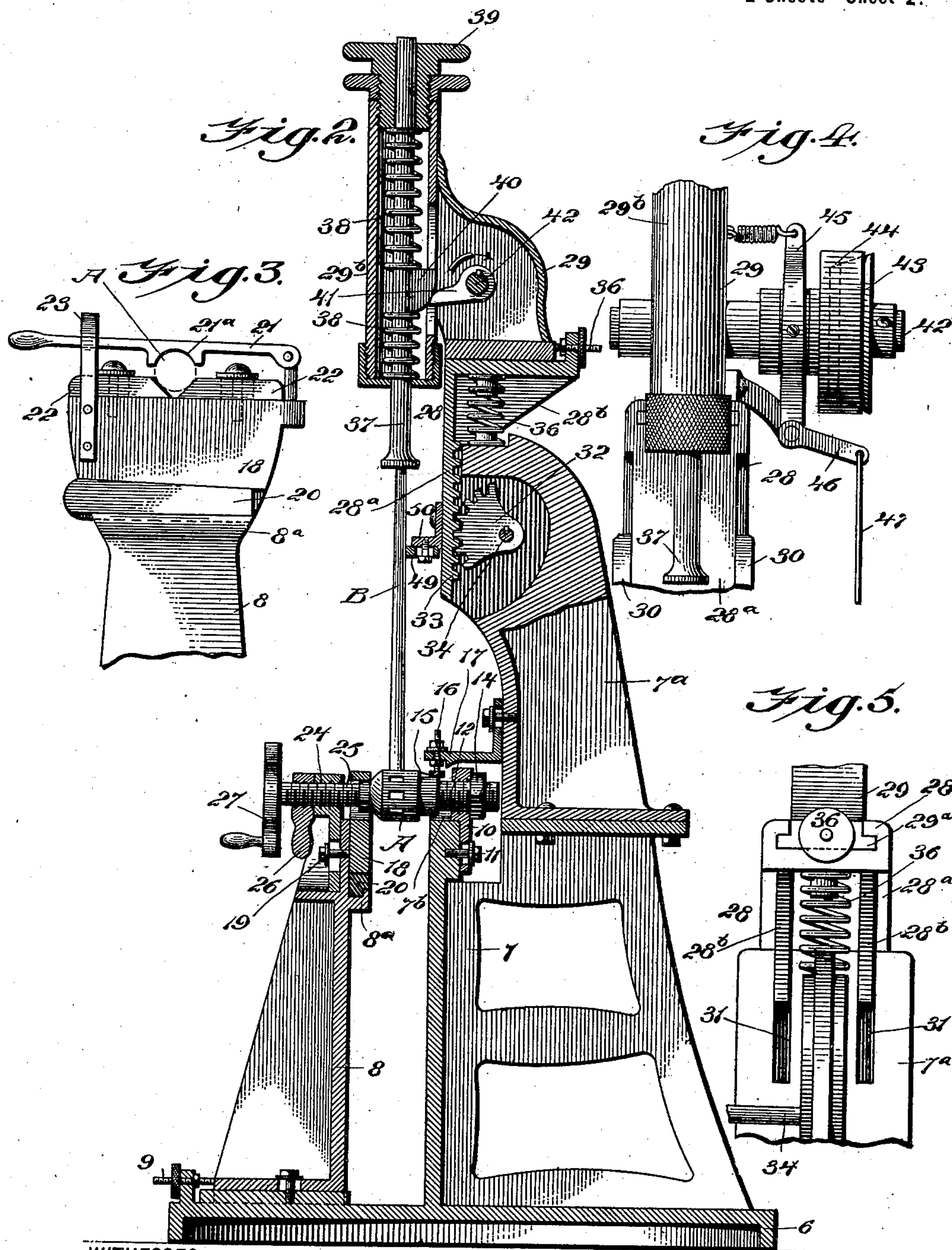
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

FERDINAND UNCKRICH, OF GALION, OHIO, ASSIGNOR TO THE FLICKINGER COMPANY, OF SAME PLACE.

SPOKE-DRIVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 671,842, dated April 9, 1901.

Application filed November 13, 1900. Serial No. 36,353. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND UNCKRICH, a citizen of the United States, and a resident of Galion, in the county of Crawford and State of Ohio, have invented a new and Improved Spoke-Driving Machine, of which the following is a full, clear, and exact description.

This invention relates to an apparatus for holding wheel-hubs and for driving the spokes thereinto. By means of my invention the hub may be held and turned as each spoke is driven therein, and the spokes are placed in position with mechanical uniformity, at the same time permitting the work to be done more rapidly and effectively than by hand.

This specification is a specific description of one form of my invention, while the claims are definitions of the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the machine. Fig. 2 is a vertical section of the same. Fig. 3 is an enlarged elevation of one of the jaws. Fig. 4 is a fragmentary view illustrating the clutch-pulley and the parts adjacent thereto, and Fig. 5 is a fragmentary rear elevation showing particularly the manner of mounting the head of the machine.

The machine has a base 6, on which is erected a stationary main column 7, having an extension 7^a bolted thereto. On the base 6 is also arranged an auxiliary column 8, adjustable toward and from the column 7 by means of a screw 9, arranged in the usual manner. The column 7 carries an arm 10, vertically adjustable by means of a screw-bolt 11. This arm 10 has a screw 12 arranged therein and fitted in a lock-nut 14, the screw 12 serving to engage one end of the hub, which is indicated at A in Fig. 2, and thereby the screw 12 forms a jaw against which the hub is held. A shoe 15 is adapted to bear down on the adjacent end of the hub, and this shoe is supported by a screw 16, working in a bracket 17, fastened to the extension 7^a of the column 7. The column 7 has a seat 7^b formed therein just in front of the arm 10, in which seat the adjacent end of the hub A lies, so that the hub is held between the seat 7^b and the shoe 15

and is permitted to be turned between these two parts.

On the auxiliary column 8 is arranged a saddle-plate 18, held by bolts 19, one of which is shown in Fig. 1. This saddle-plate 18 may be adjusted vertically by a wedge 20, which bears under the saddle-plate and on top of a shoulder 8^a, formed on the column 8. Mounted on the saddle-plate 18 is an arm 21, having a sort of fork 21^a at its middle, this fork being adapted to engage with the top of the hub, which is indicated by dotted lines in Fig. 3, such view also showing the relation of the arm 21 to the hub. By means of this arm the hub may be forced downward against the saddle-plate 18, and the upper edge of the saddle-plate may be provided with adjustably-arranged bearing-blocks 22 to be engaged by the hub, as shown. A ratchet-plate 23 is fastened to the saddle-plate 18 to be engaged by the arm 21, whereby to hold the arm down in operative position. Fastened to the auxiliary column 8 is an arm or bracket 24, in which is arranged a screw 25, similar to the screw 12 and adapted to engage the end of the hub opposite the screw 12. The screw 25 is provided with a lock-nut 26 and with a crank 27. By means of the crank the screw 25 may be readily moved into and out of engagement with the hub, and when the screw is in the desired position it may be locked in such position by the nut 26. By the devices just described the hub is mounted so that it may be turned to any position desired, and by properly disposing the screws 12 and 25 the hub may be locked immovably, so that the spokes, one of which is indicated at B in the drawings, may be engaged with and driven securely into the hub.

The head of the machine comprises two sections—a lower or main section 28 and a crown-piece 29. The lower or main section 28 is mounted on the upper extremity of the extension 7^a of the column 7 by means of a slide 28^a, fitted between suitable guides 30 in the upper part of the extension 7^a, as shown best in Figs. 1 and 4. The lower part 28 of the head is also provided with ribs 28^b, which move vertically in slides 31, formed in the extension 7^a of the column 7. By these means the head of the machine is vertically mov-

able on the column 7^a, and for the purpose of effecting and controlling this movement I provide a toothed sector 32, which meshes with teeth 33, formed on the inner surface of the slide 28^a of the part 28 of the hub. This sector 32 is carried on a shaft 34, mounted in the upper part of the column 7^a and provided with a hand-lever 35 outside of the column, by which hand-lever the sector 32 may be thrown to raise or lower the head of the machine. An expansive spring 36 is arranged beneath the head, as shown in Figs. 2 and 5, thus tending to hold the head raised. When the head is moved down, therefore, it is moved against the action of the spring 36.

The upper part 29 of the head is provided with a slide 29^a, which works in a guide 28^c, formed in the lower part 28. The part 29 of the head is adjustable in the guide 28^c by a screw 36. The upper part of the head carries the hammer 37, which is in the form of a vertically-reciprocal bar, the stroke of which is cushioned by oppositely-acting springs 38, the parts 37 and 38 being arranged within the tubular casing 29^b, forming part of the section 29 of the head. The tension of the springs 38 may be regulated by a screw-cap 39, working in the top of the casing 29^b, through which cap the upper end of the hammer 37 moves. The hammer-bar 37 is provided with a laterally-projecting lug 40, adapted to be engaged by a wiper-cam 41, fastened to a rotary shaft 42, mounted in the upper part 29 of the head. This shaft 42 carries a fast friction-clutch member 43, which works with a loose clutch member 44, the member 44 also forming a band-pulley. The clutch member 44 is controlled by a fork 45, connected with an arm 46, which has a rod 47 attached. This rod 47 passes down to a treadle 48 on the base 6, and when the treadle is thrown down the fork 45 is moved to engage the clutch members 43 and 44 and cause the movement of the former to be transmitted to the shaft 42, causing the same to revolve in the direction of the arrow shown in Fig. 2, and thereby impart an upward movement to the hammer. The hammer is returned by the upper spring 38, which, together with the force of gravity, causes the hammer to be driven down and forcibly engaged with the spoke B, thus driving it into the hub. For gaging the inclination at which the spokes are set, and thereby regulating the "dish" of the wheel, I provide a gage-plate 49, adapted to engage the spokes, as shown in Fig. 2. This gage-plate is adjustably held by a bracket 50, fastened to the lower section 28 of the head of the ma-

chine. The operator by manipulating the arm 35 may move the head down until the hammer is in proper position for striking, and then by holding the spoke against the gage 49 and pressing down the foot-lever 48 the hammer will be started and caused to impart to the spoke a number of sharp blows delivered in rapid succession, thus driving the spoke into place. When one spoke has been driven, the screw 25 may be loosened and the hub turned to place another spoke in position for driving, and then the screw may be tightened again and the above-described operation repeated.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A spoke-driving machine, having a main column or frame, a head mounted thereon and comprising two parts one above the other, the lower part being vertically adjustable on the frame and the upper part being horizontally adjustable on the lower part, a hammer and its operating mechanism carried by the upper part of the head, and means carried by the frame below the head for holding the hub of the wheel.

2. A spoke-driving machine, having a main column or frame, a head mounted thereon and comprising two parts, one above the other, the upper part being adjustable horizontally on the lower part and the lower part being slidably mounted on the frame and formed with a rack, a toothed sector mounted on the column and meshed with the rack to raise and lower the head, a hammer and its operating mechanism carried by the upper part of the head, and means carried by the frame below the head for holding the hub of the wheel.

3. A spoke-driving machine, having a column or frame, an operated hammer mounted in the frame, and means for holding the hub of the wheel, such means comprising seats on which the end portions of the hub bear, jaws working oppositely to the seats and engaging the side of the hub, and clamping devices working axially of the hub and engaging the ends of the hub, for the purpose specified.

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

FERDINAND UNCKRICH.

Witnesses:

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