Aug. 28, 1923. 1,466,430

H. FLICK

SPOKE INSERTING MACHINE

Filed Oct. 4, 1921

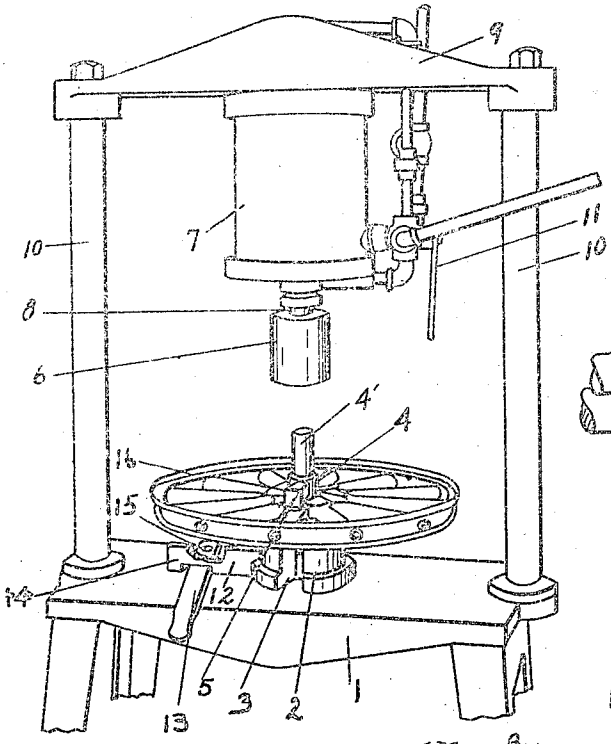

Fig. I.

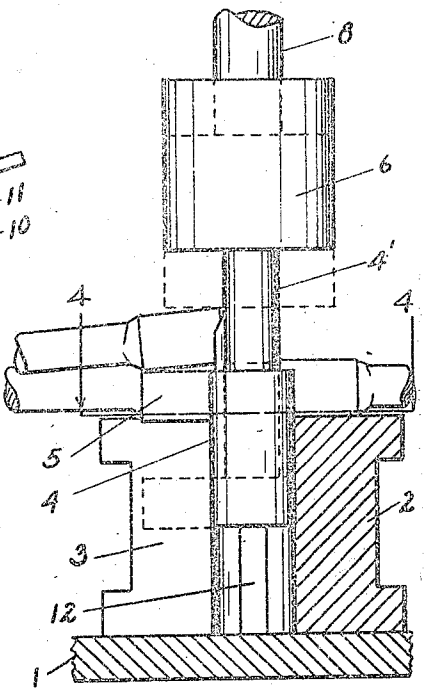

Fig. III.

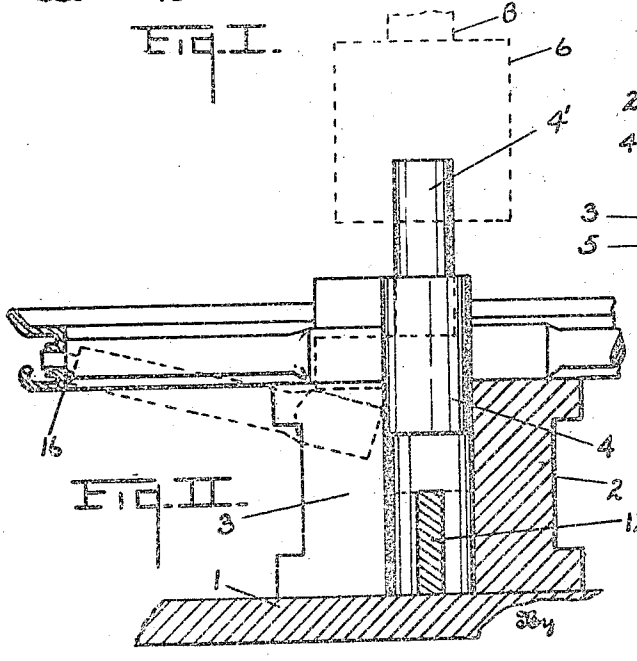

Fig. II.

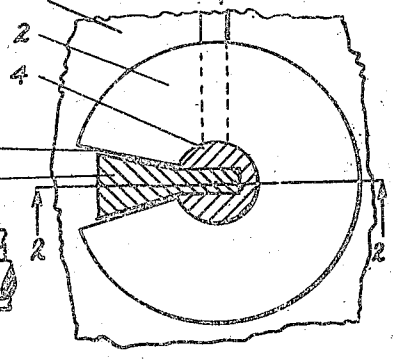

Fig. IV.

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UNITED STATES PATENT OFFICE.

HENRY FLICK, OF JACKSON, MICHIGAN, ASSIGNOR TO HAYES WHEEL COMPANY, OF JACKSON, MICHIGAN.

SPOKE-INSERTING MACHINE.

Application filed October 4, 1921. Serial No. 505,247.

To all whom it may concern:

Be it known that I, HENRY FLICK, a citizen of the United States, residing at the city and county of Jackson, State of Michigan, have invented certain new and useful Improvements in Spoke-Inserting Machines, of which the following is a specification.

This invention relates to an improved spoke inserting machine, particularly adapted for replacing defective spokes in the manufacture of wheels with metal fellies and wood spokes.

The object of the invention is to provide an expeditious means of removing a defective or injured spoke and replacing it with a new one.

Objects relating to details and economies of construction and operation will definitely appear from the detailed description to follow.

The objects of the invention are accomplished by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of the invention is fully illustrated in the accompanying drawing, forming a part of this application, in which:

Fig. I is a detail perspective view of my improved spoke handling machine with portions broken away for the sake of clearness.

Fig. II is an enlarged detail vertical sectional elevation on a line corresponding to line 2—2 of Fig. IV, showing the plug depressed to the position of removing a defective spoke.

Fig. III is a similar sectional view showing the ram in position to insert a new spoke. the depressed position of the ram and plug being indicated by dotted lines.

Fig. IV is a detail sectional view on line 4—4 of Fig. III.

In the drawing similar reference numerals refer to similar parts throughout the several views and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Considering the numbered parts of the drawing, 1 is the base, 2 is the anvil on the base, which is cylindrical in form with a radial wedge-shaped portion cut away at 3, the same being of the angle of the miter of a single spoke. The anvil is hollow at its center containing a reciprocating plug 4 adapted to fit the bore between the inner ends of the spokes of a wheel. A wedge-shaped part 5 is disposed radially at one side of the plug 4 adapted to act upon the inner end of a spoke and force it downwardly into the recess 3.

A shank 4′ extends above the plug 4 to receive the ram 6 which is actuated from the air cylinder 7, the piston rod 8 of which is connected to said ram. The air cylinder 7 is carried by the cross beam 9 on the supporting columns 10, 10 which connect the same to the base 1. The usual throttle lever 11 is provided for hand manipulation.

A stop bar 12 projects along the base 1 into the bottom of the bore of the anvil 2 and is controlled by lever 13, which is pivoted in bracket 14 on the pivot 15 whereby the same can be readily manipulated by the hand of the operator.

In operation a wheel 16 is placed upon the anvil, the lower portion of the plug 4 is inserted within the spokes to support them in position, the wedge-shaped projection 5 is disposed over any defective spoke to be removed and the parts swung so that the spoke comes over the open space 3. The ram 6 is then forced down over the shank 4′ against the wedge-shaped block forcing the spoke out, as indicated by the dotted lines in Fig. II. The spoke is then pulled out by the operator and the tenon of a new spoke is inserted and the mitered end is disposed upon the wedge-shaped projection 5. The stop bar 12 is then in place to prevent the spoke being moved too far and to prevent any possible injury to the center of the wheel, the plug drops down, the wheel is removed the plug lifted up, a new wheel put in place and the operation repeated.

While an air cylinder is provided for exerting the pressure and is of great advantage on account of its facility, other means might be employed for forcing the ram down. It is desired, however, to claim the structure specifically and broadly as pointed out in the appended claims.

Having thus described the invention, what is claimed as new and desired to secure by Letters Patent, is:

1. The combination of a suitable base, an anvil block thereon with a central bore and a radially disposed wedge-shaped opening corresponding to a simple spoke miter, a plug with an upwardly projecting shank

and adapted to fit the said bore and of such dimensions as to fit the center of a spoke wheel, a wedge-shaped radially disposed block carried by the said plug corresponding to the miter of a spoke, an air cylinder, a ram carried thereby fitted to the shank of said plug, and a removable stop for supporting the said plug in the said anvil, coacting as specified.

2. The combination of a suitable base, an anvil block thereon with a central bore, and a radially disposed wedge-shaped opening corresponding to a simple spoke miter, a plug with an upwardly projecting shank and adapted to fit the said bore and of such dimensions as to fit the center of a spoke wheel, a wedge-shaped radially disposed block carried by the said plug corresponding to the miter of a spoke, an air cylinder, and a ram carried thereby fitted to the shank of said plug, coacting as specified.

3. The combination of a suitable base, an anvil block thereon with a central bore and a radially disposed wedge-shaped opening corresponding to a single spoke miter, a plug adapted to fit the said bore and of such dimensions as to fit the center of a spoke wheel, a wedge-shaped radially disposed block carried by the said plug corresponding to the miter of a spoke, an air cylinder, and a ram carried thereby and connected to said plug, coacting as specified.

4. The combination of a suitable base, an anvil block thereon with a central bore and a radially disposed wedge-shaped opening corresponding to a single spoke miter, a plug adapted to fit the said bore and of such dimensions as to fit the center of a spoke wheel, a wedge-shaped radially disposed block carried by the said plug corresponding to the miter of a spoke, and means to force said plug into said anvil, coacting as specified.

In witness whereof, I have hereunto set my hand and seal.

HENRY FLICK. [L. S.]