No. 762,712. PATENTED JUNE 14, 1904.

T. D. HARRIS.

WHEEL SPOKE VISE.

APPLICATION FILED AUG. 29, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

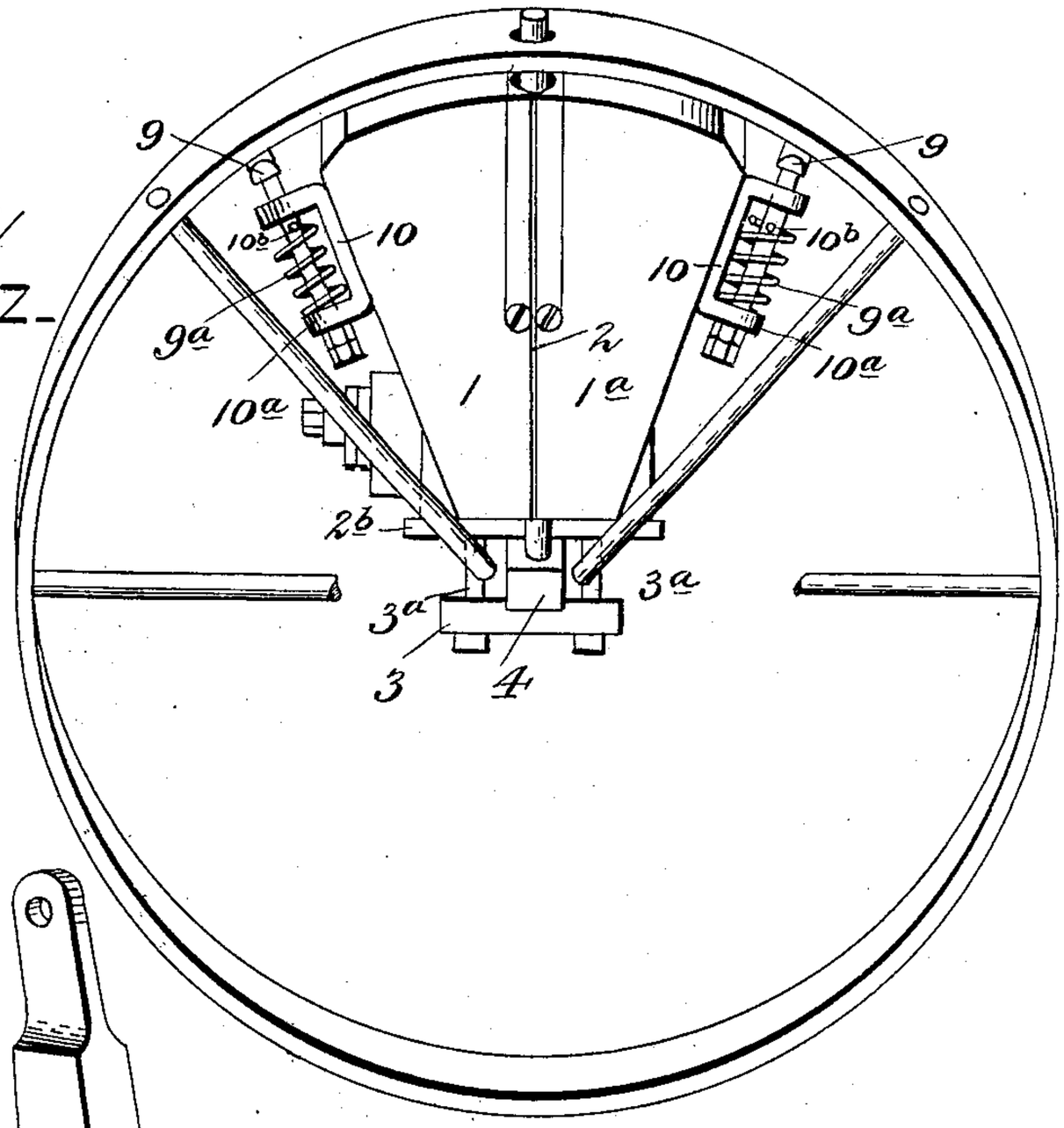
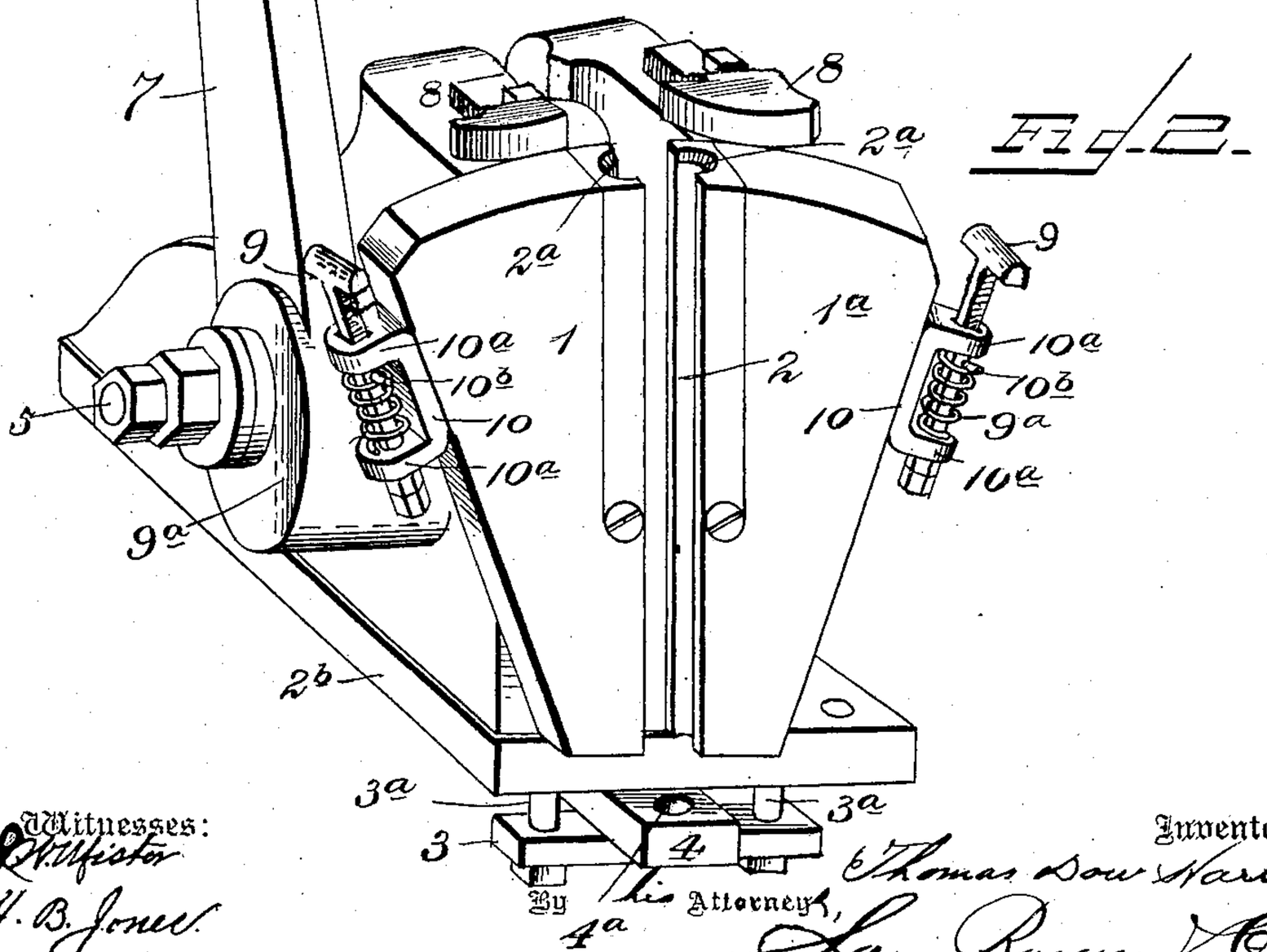


Fig. 2.



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NO MODEL. 2 SHEETS—SHEET 2.

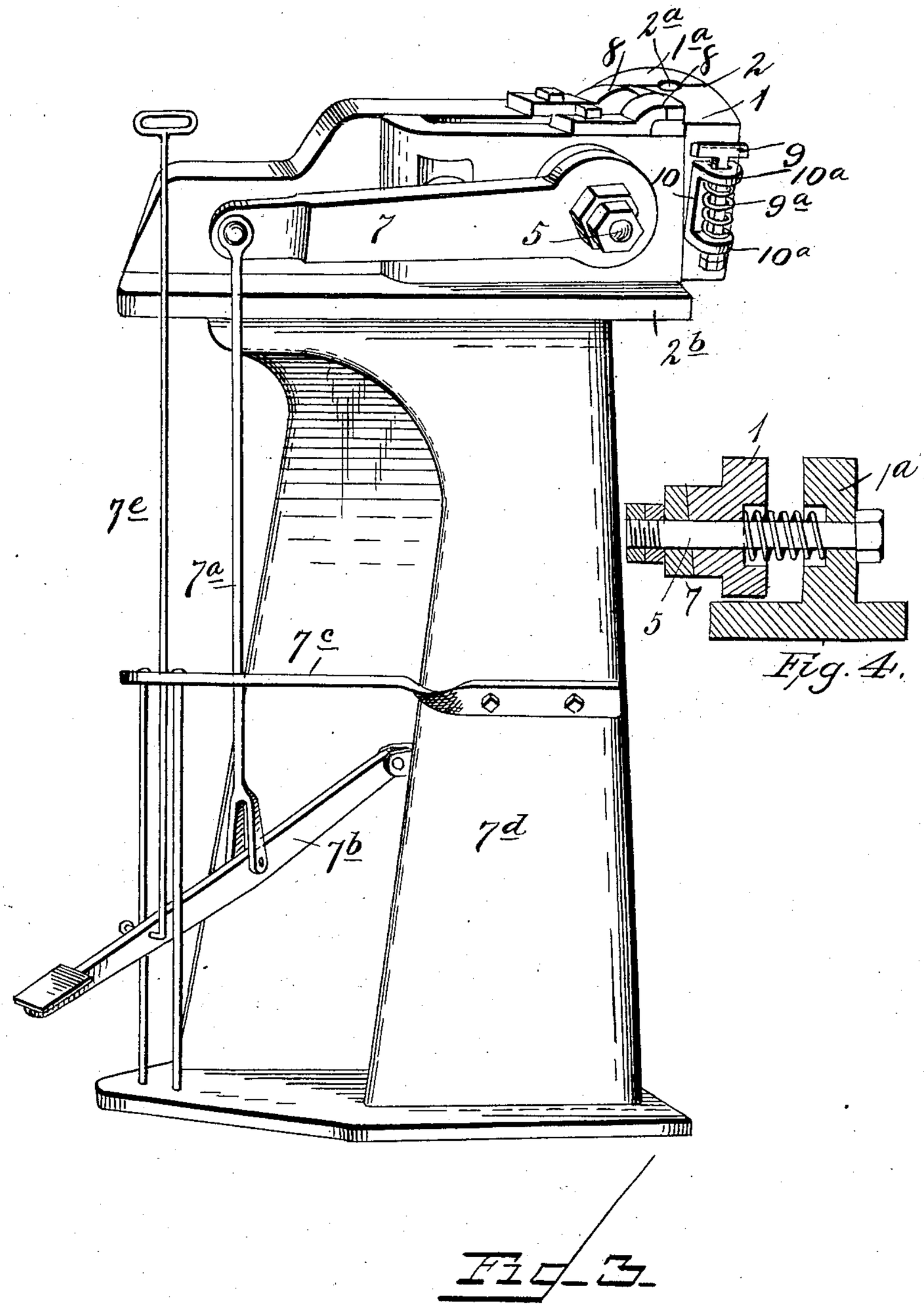

Fig. 3.

Fig. 4.

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No. 762,712. Patented June 14, 1904.

UNITED STATES PATENT OFFICE.

THOMAS DOW HARRIS, OF ASHBORO, NORTH CAROLINA, ASSIGNOR OF ONE-HALF TO EMMETT LEONIDAS MOFFITT, OF ASHBORO, NORTH CAROLINA.

WHEEL-SPOKE VISE.

SPECIFICATION forming part of Letters Patent No. 762,712, dated June 14, 1904.

Application filed August 29, 1903. Serial No. 171,270. (No model.)

To all whom it may concern:

Be it known that I, THOMAS DOW HARRIS, a citizen of the United States, residing at Ashboro, in the county of Randolph and State of North Carolina, have invented new and useful Improvements in Wheel-Spoke Vises, of which the following is a specification.

My invention relates to certain improvements in the manufacture of wheels, more especially in spoke-holding devices or clamps.

It has for its object to provide for the insertion of the spokes into their tire or rim and the clamping or fastening thereof in place therein in an expeditious and effectual manner.

Said invention consists of a peculiarly-constructed clamp and former, substantially as hereinafter more fully disclosed, and specifically pointed out by the claims.

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a view showing it as applied for use. Fig. 2 is a perspective view looking at the same from an angle at the front of said invention. Fig. 3 is a side elevation, together with appliances for the actuation of said clamp. Fig. 4 is a broken or fragmentary section produced through the inner end of the jaw-actuating lever and the engaged jaw, disclosing more especially the inclined surfaces therebetween.

In the carrying out of my invention I provide duplicate clamping members or jaws 1 1^a, each preferably having a right-lined or perpendicular inner edge and an outer diagonal or inclined lateral edge, the two opposed perpendicular edges of said jaws having formed therein opposite corresponding vertical grooves 2 for the reception of a spoke, said grooves having their upper ends terminating in cavities or depressions jointly forming a countersink 2^a, the purpose of which will presently appear. The stationary jaw or member 1^a is fixed or cast with a base-piece 2^b, to the under side of which at the forward edge is connected a clamp-bar 3 by parallel screw-threaded headed pins or bolts 3^a passing through said clamp-bar and screwing into said base-piece. An anvil 4, suitably clamped between said base piece or plate and clamp-bar, has a depression or cavity 4^a to receive the lower or inner end of the spoke, the spoke-holding jaws projecting beyond said base-plate and having their spoke-receiving grooves arranged in parallel vertical planes with said cavity or depression. Said jaws have passing transversely through them a rod 5, suitably secured at one end to the fixed or stationary jaw, and upon said rod is arranged a spring 6, whose action is to automatically throw said jaws apart, said spring being consequently compressed when said jaws are brought into operative position. Upon said rod 5, outside of the movable jaw 1, is pivoted an arm or lever 7, held thereon, as against lateral displacement, preferably by nuts and washers placed upon the end of said rod, projecting beyond said lever, as shown. The engaging or contacting disk-like portions or surfaces between said lever and the movable jaw are adapted to have a cam action—*i. e.*, as said lever is moved downwardly it will bind against said jaw after the manner of moving two oppositely-inclined planes in contact with each other, and thus force said movable jaw against the spoke and clamp the last named between said jaw and the fixed jaw, holding the same firmly in place. The two jaws are provided upon their upper surfaces with two pivoted suitably-shaped dogs 8, adapted by suitably moving the same manually to be engaged with the lateral edge of the wheel tire or rim to aid the retention of the latter firmly in place. Said jaws are rounded or convex upon their upper forward edges to laterally engage the surface of the wheel rim or tire in practical application of the clamp and mold, as presently seen. Said jaws are provided or equipped laterally with preferably approximately T-shaped bars or rods 9, normally standing in a plane or arc beyond that of the upper edges of said jaws to hold initially the tire or rim somewhat above said upper edges or sufficiently thereabove to first permit by the hammering of the outer end of the spoke, as in forming a head thereon, the bringing of the tire or rim into its final or normal position down upon said edges of the jaws con-

tinuously with the forming of offsets upon the spokes below the tire or rim within the cavities or countersinks 2^a of the jaws 1, as presently will more fully appear. To effect the holding or retention of said bars or rods 9 normally elevated beyond said arc of said tire or rim, said bars or rods are equipped with springs 9^a, said bars or rods extending through the lateral extensions or arms 10^a of brackets 10, between the lower of which arms and pins 10^b are held said springs for delivering their tension or pressure upon said bars or rods 9. Said brackets are suitably secured to said jaws near their upper forward edges, and said pins 10^b pass transversely through said rods or bars 9, each at a point to sufficiently compress the springs 9^a to give the upper ends of said rods or bars the requisite elevation, as aforesaid.

To the lever 7 at its outer end is connected or pivoted a rod 7^a, and to said rod is connected or pivoted, preferably, a foot-lever 7^b, with one end adapted to be pivoted between lugs on the part 7^b, bolted to the support or standard 7^d, upon which is secured the base piece or plate 2^b of the jaws 1 1^a. Said foot-lever 7^b has also connected thereto at the required point a handhold-ended rod 7^e, passing through an opening in the arm or bar 7^c for its retention in convenient position for actuation by the hand.

It will be observed that the wheel tire or rim is placed in position upon the jaws or members 1 1^a, as indicated in Fig. 1, with a spoke-receiving hole previously produced in said tire alining the spoke-receiving grooves 2 in said jaws, said jaws of course being separated. A spoke is first heated to the requisite degree and thrust through the hole in said rim and into the grooves 2 of said jaws, its lower end resting in the cavity 4^a of the anvil 4, said tire being initially removed, as aforesaid, from the jaws—say about a fourth of an inch. The foot is applied to the foot-lever 7^b, actuating the arm or lever 7, in turn clamping the spoke firmly between the jaws 1 1^a. The spoke is now struck upon its upper end by a hammer in the hands of the operator. The initial or first blow forms the head on said end of spoke. As the hammering of the spoke is continued the hand forces the tire down upon the jaws, the action of the springs 9^a being thus overcome, and the metal of the spoke will be laterally displaced or offset by and within the countersink 2^a in said jaws below the tire, the offset being thus clamped against said side or surface of the tire by and simultaneously with the sinking or driving of the head of the spoke into its countersink in the tire within the plane of the last named, thus solidly uniting spoke and tire together. Of course in order to release the secured spoke it is necessary to only separate the jaws, which is effected by pulling upwardly upon the handle 7^e, reversely acting upon the lever or arm 7, allowing the jaws to be automatically thrown apart or separated by the action of the spring arranged therebetween, when said spoke, with the rim or tire, is shifted into position to bring another spoke-receiving hole into a like alinement with the spoke-receiving grooves and a second spoke similarly treated and placed in position. The several parts are now actuated, as in the previous operation, to effect the securing of said spoke to the tire, the same operation being continued until all of the spokes are thus secured to the tire.

I do not wish to be limited as to details of construction, as these may be modified in many particulars without departing from the spirit of my invention.

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

1. A clamp and former of the character described, embracing duplicate jaws constructed to conform to a spoke of a wheel and having the spoke-conforming portions thereof constructed at their upper ends, to provide for forming a lateral enlargement or offset upon the spokes, and spring-equipped bars or rods, arranged laterally upon said jaws to initially support the tire distantly from said jaws.

2. A clamp and former of the character described, embracing duplicate jaws constructed to conform to a wheel-spoke and having the spoke-conforming portions thereof constructed, at their upper ends, to provide for forming a lateral enlargement or offset upon the spoke, brackets secured laterally to said jaws, bars or rods passing through arms of said brackets and having cross-heads for initially supporting said tire or rim distantly from said jaws, said rods or bars having applied thereto springs to automatically retain them elevated.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

THOMAS DOW HARRIS.

Witnesses:
SAMUEL FRANKLIN PHILLIPS,
ELIJAH MOFFITT.