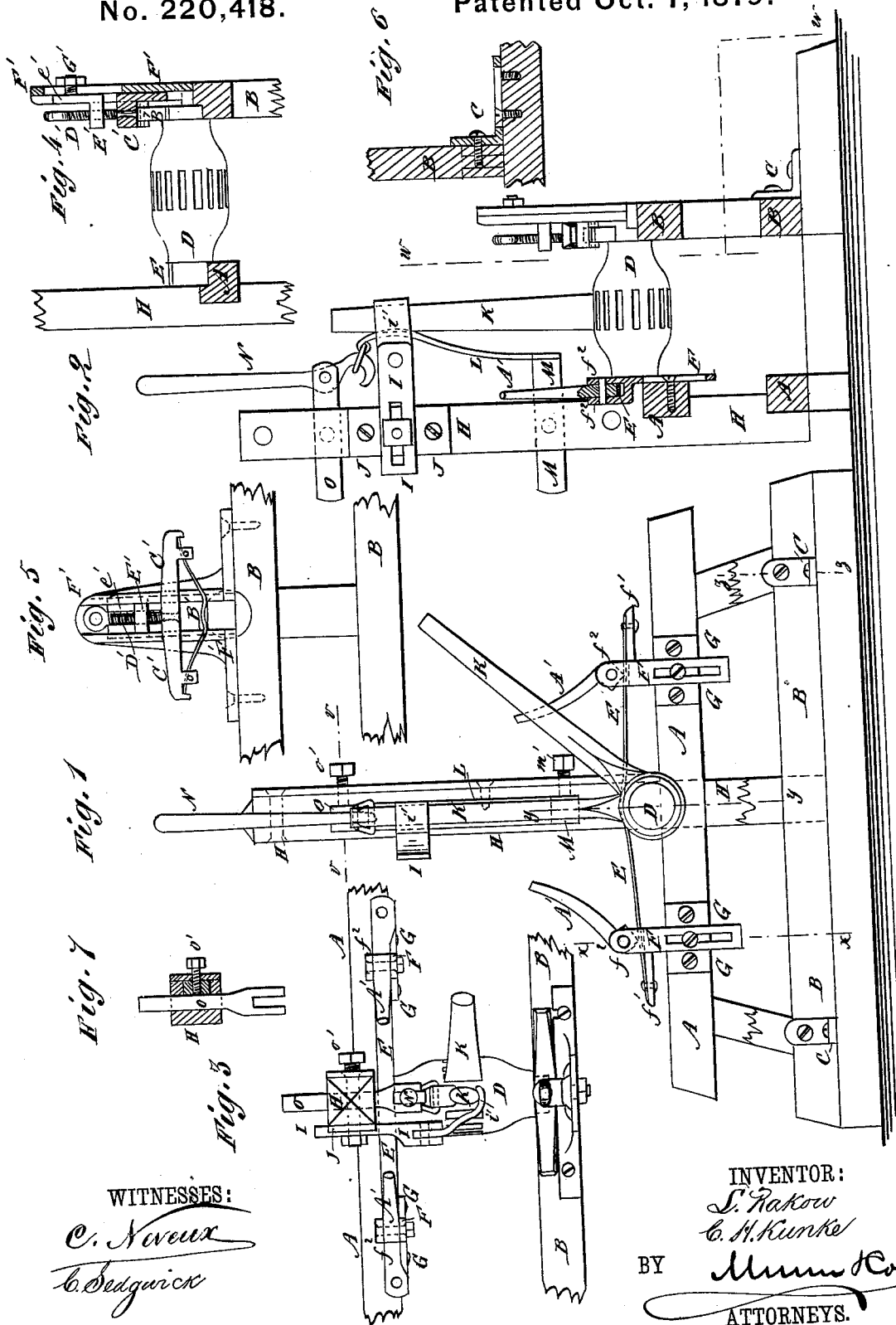


L. RAKOW & C. H. KUNKE.
Spoke-Driving Machine.

No. 220,418.

Patented Oct. 7, 1879.



UNITED STATES PATENT OFFICE.

LOUIS RAKOW AND CHARLES H. KUNKE, OF GILBERT'S, ILLINOIS.

IMPROVEMENT IN SPOKE-DRIVING MACHINES.

Specification forming part of Letters Patent No. **220,418**, dated October 7, 1879; application filed August 19, 1879.

To all whom it may concern:

Be it known that we, LOUIS RAKOW and C. H. KUNKE, of Gilbert's, in the county of Kane and State of Illinois, have invented a new and useful Improvement in Spoke-Driving Machines, of which the following is a specification.

Figure 1 is a front view of our improved machine, part being broken away to show the construction. Fig. 2 is a vertical section of the same, taken through the line *x x*, Fig. 1. Fig. 3 is a top view of the same. Fig. 4 is a detail section taken through the line *y y*, Fig. 1. Fig. 5 is an inner-side view of the front holder. Fig. 6 is a detail section taken through the line *z z*, Fig. 1. Fig. 7 is a detail section taken through the line *v v*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved machine for holding the hubs and spokes of wheels while the said spokes are being driven, which shall be simple in construction and convenient and reliable in use.

The invention consists in the combination of the stationary frame, the adjustable frame, the springs, and the adjustable holding-plates with each other for holding the rear end of a hub while the spokes are being driven; in the combination of the bent spring, the bar provided with guide-lugs and pins, the swiveled screw, the adjustable nut and its clamping-screw, and the slotted plate provided with a cross-head at its lower end to receive the fastening-screws with each other, and with the top bar of the forward frame for holding the forward end of a hub; and in the combination of the post, the adjustable gage-arm provided with a pivoted hook, the spring, the lever, and the adjustable arms and their set-screws with each other, and with the frames and their springs for gaging and holding the spokes while being driven, as hereinafter fully described.

A and B represent the two upright frames. The rear frame, A, is designed to be stationary, and is attached to the floor or to a bed-plate or base-frame. The forward frame, B, is secured to the floor, bed-plate, or base-frame by angle-irons C, the lower arms of which are slotted to receive the fastening-screws, so that the frames A B may be adjusted at such a dis-

tance apart as the length of the hub may require. In the upper side of the middle parts of the top bars of the frames A B are formed half-round notches to receive the ends of the hub D. The rear end of the hub D is secured in place by the pair of springs E. The inner ends of the springs E rest upon the upper side of the rear end of the said hub. The outer ends of the springs E are pivoted to the outwardly-projecting arm *f*¹ formed upon the upper ends of the plates F, which slide up and down between guides G, attached to the inner side of the top bar of the frame A. The plates F are slotted longitudinally to receive the screws or bolts by which they are secured to the said top bar, so that by loosening the said screws or bolts the springs E may be adjusted higher or lower, as the thickness of the hubs D may require.

The springs E are held down upon the end of the hub, to hold it securely in place, by the cam-levers A', which are pivoted to lugs *f*² formed upon the upper ends of the plates F, so that they may be turned down to press the said springs E down upon the end of the hub D, and turned up to release the said springs E and allow them to rise out of the way when putting in and taking out the hub. The forward end of the hub D is held down by the bent spring B', the middle part of which is slightly concaved to rest upon the said hub, and its ends rest against the lower side of the end parts of a bar, C', where they are kept in place by pairs of lugs formed upon the said bar and by pins passing through the said lugs. To the center of the bar C' is swiveled the lower end of a screw, D', which passes through a nut, E'. The nut E' is horizontal, and is provided with an upright arm, *e'*, which slides up and down in a dovetailed groove in the inner side of the upper part of a plate, F', where it is secured in place by a clamping-screw, G', which passes through a slot in the said plate F'. The plate F' is secured to the upper side of the top bar of the frame B by two screws, one of which passes through a screw-hole in one arm of the cross-head formed upon the lower end of the said plate F', and the other passes through a notch in the other arm of the cross-head, so that by loosening the said screw

the plate F' and its attachments can be swung around out of the way for convenience in putting in and taking out of the hub.

With this construction the holder can be adjusted to the size of the hub by loosening the screw G', and the hub can be clamped and released by turning the screw D' down and up.

To the outer side of the middle part of the rear frame, A, is attached the lower part of a post, H. To the side of the upper part of the post H is attached a horizontal bar, I, which is slotted longitudinally to receive the fastening screw or bolt, so that the said bar may be adjusted as the position of the spokes may require. The bar I is held in a horizontal position by two guards, J, attached to the post H, and between which the said bar is placed.

To the forward end of the bar I is attached, or upon it is formed, a hook, i', to receive the upper part of the spoke K, and serves as a gage to bring the said spoke K into proper position, and as a holder to hold it in position while being driven into the hub. The hook i' should be hinged to the gage-bar I, so that it may be turned up out of the way to allow the spokes to pass when driving a second row of spokes. The spoke K is held in the hook i' of the gage-bar I by a spring, L, the lower end of which is attached to the inner end of the arm M, and its upper end is connected with the lower end of a lever, N. The lever N is pivoted to the inner end of an arm, O.

The arms M O pass through holes in the post H, and are secured in place adjustably by set-screws m' o', which pass through nuts secured in recesses in the said post, and rest against the sides of the said arms M O, so that by loosening the said set-screws m' o' the said arms M O and the spring L may be adjusted as the position of the gage I i' may require.

With this construction, when the various parts of the machine have been adjusted as

the size of the wheels to be made may require, the spokes can be driven with facility and accuracy by any one, however unskilled he may be.

The frames A B may be made of such a height that the spokes K will not touch the floor when the hub D is turned; or the said frames A B may be made low, in which case a slot should be formed in the floor for the spokes K to pass through when the hub D is turned.

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

1. The combination of the stationary frame A, the adjustable frame B, the spring E, and the adjustable holding-plates F with each other for holding the rear end of a hub, D, while the spokes K are being driven, substantially as herein shown and described.

2. The combination of the bent spring B', the bar C' provided with guide-lugs and pins, the swiveled screw D', the adjustable nut and its clamping-screw E' G', and the slotted plate F', provided with a cross-head at its lower end to receive the fastening-screws, with each other and with the top bar of the frame B, for holding the forward end of a hub, substantially as herein shown and described.

3. The combination of the post H; the adjustable gage-arm I, provided with a pivoted hook, i', the spring L, the lever N, and the adjustable arms M O and their set-screws m' o' with each other, and with the frames A B and the spring E, substantially as herein shown and described.

LOUIS EAKOW.
CHARLES H. KUNKE.

Witnesses:

JOHN KELLY,
MICHAEL DARCY.