

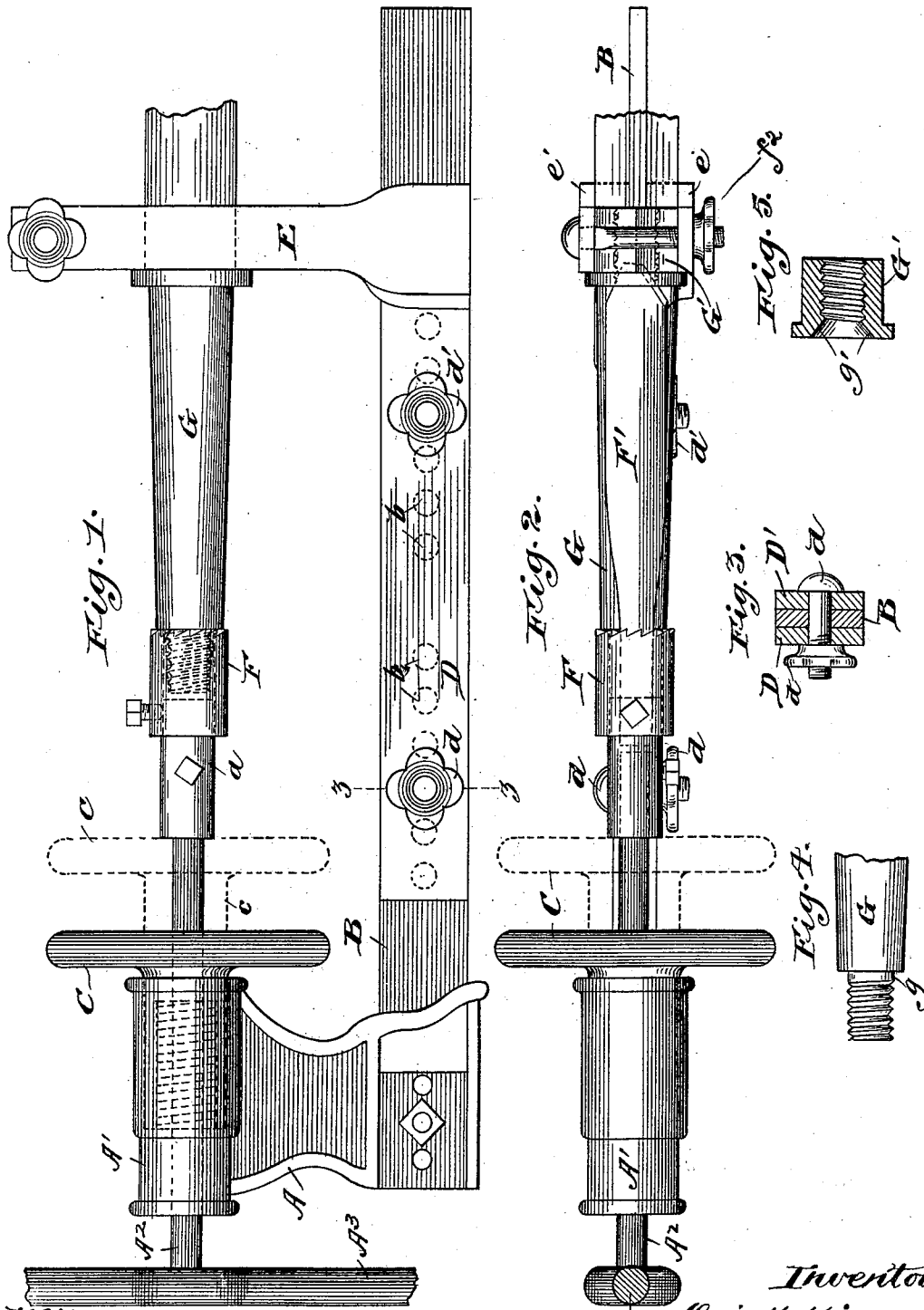
(No Model.)

O. H. KING.

MACHINE FOR REPAIRING AXLES AND SPINDLES.

No. 552,186.

Patented Dec. 31, 1895.



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MACHINE FOR REPAIRING AXLES AND SPINDLES.

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To all whom it may concern:

Be it known that I, ORRIN H. KING, residing at Crete, Will county, Illinois, have invented a Machine for Repairing Axles, Spindles, &c., of which the following is a specification.

The object of my invention is to provide a simple, economical, and inexpensive device whereby spindles or axles of vehicles may be repaired and the play of the wheels caused by wear in use thereby taken up without the use of washers or similar expedients. After continued use the box in the wheel and other parts become worn, but the nut cannot be screwed up farther to compensate for such wear, which it is the particular design and purpose of my invention to provide for. At a slight expense, therefore, the wheels can be adjusted to their respective axles after long usage and be caused to run as smoothly as at the beginning, and in addition the wheels may be made dust and dirt proof; and my invention consists in the method and features and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of my device showing the cutter acting upon the end of a spindle; Fig. 2, a plan view of my device showing the action of the reaming-tool upon the nut or bur; Fig. 3, a section taken on line 3 3 of Fig. 1; and Figs. 4 and 5, detail views of the end of the axle and of the bur, respectively, after being operated upon by the tools.

In constructing my axle or spindle repairer I first make a suitable frame consisting of a vertical member A and a horizontal member B. The part A is provided with a hollow head or sleeve A', in which is loosely mounted the shaft or spindle A², carrying at its outer free end an arm A³, whereby the shaft may be rotated or moved by hand. A hand-wheel or other suitable device, however, may be employed. The other end of the spindle is provided with any suitable stock *a* for holding the tools.

As shown in Fig. 1, a portion of the sleeve is enlarged and provided with internal screw-threads adapted to engage corresponding threads on the hub or sleeve *c* of a small hand-wheel C, which plays idly upon the spindle A². The position of this hand-wheel may be shifted

by rotation to the position shown in dotted lines, whereby the backward movement of the spindle to the left, Fig. 1, will be prevented. The object of this arrangement is obviously to feed the operating-tools to the work.

Upon either side of the base member B of the frame are sliding plates D D', to which are secured the upright portion or arms *e e'* of a clamp E for holding the axle and nut or bur to be operated upon. The plates are securely bound to the frame by means of a pair of bolts *d d'* passing through the parts and provided with suitable thumb-nuts, as shown in Fig. 3. The base member is preferably provided with a series of holes *b* with which the openings in the sliding plates may register. The free end of the clamp is provided with a bolt *f*², whereby the arms may be sprung together to clamp the axle or bur, as desired.

The tools required are a cutter F and a reamer F'. The cutter is secured upon the stock *a* in a convenient manner and is provided with cutting-teeth. The reamer may be attached to the stock in any desired manner or, as shown in Fig. 2, one end may be received by the hollow cutter, which latter method will be found very convenient in practice.

My method is carried out and the device is operated in the following manner: The axle G is first clamped, as shown in Fig. 1, and the cutter is moved up to the work and held against it by the hand-wheel. Then by rotating the spindle a portion of the spindle will be cut away and a shoulder *g* formed back of the usual screw-threads. This operation is continued until a sufficient cut is made so that all play of the wheel will be compensated for after the nut is screwed on, as hereinafter mentioned. The axle is then removed and the nut or bur G' is secured in the clamp, as shown in Fig. 2. The reamer is inserted the interior of the hollow cutter and then rotated, thus reaming out the bur to form preferably a bevel *g'*. It is obvious that after this treatment of the parts the bur when screwed upon the axle will fit closer to the box of the wheel and prevent play. The cut-away portion of the bur will fit over the shoulder so that it may be screwed farther upon the spindle than heretofore. The old axle or spindle

may thus be repaired simply and economically and without the expensive work of cutting threads.

5 The device is comparatively inexpensive and can be operated by any one, even if not a mechanic.

10 Although I have described more or less precise forms and details of construction, I do not intend to be understood as limiting myself thereto, as I contemplate changes in form, proportion of parts and the substitution of equivalents as circumstances may suggest or render expedient without departing from the spirit of my invention, and I also contemplate 15 using and practicing my invention wherever applicable.

I claim—

1. The device for repairing spindles and the like which consists of a frame provided with 20 clamping mechanism for holding the work, a rotatable shaft mounted in the frame, a hollow cutting tool arranged upon the free end of the shaft and adapted to cut a shoulder upon the spindle back of the thread and a reamer adapted to be inserted within the hollow center of the cutting tool and adapted to 25 cut out a portion of the nut.

2. The device for repairing spindles and the like which consists of a frame provided with 30 clamping mechanism for holding the work, a rotatable shaft mounted in the frame, an annular cutting tool arranged to fit upon the

free end of the shaft and adapted to cut a shoulder upon the spindle back of the thread, and a reaming tool also arranged to fit upon 35 and be rotated by the shaft and adapted to cut out a portion of the nut.

3. The device for repairing spindles and the like which consists of a frame comprising portions A and B, a clamp E secured upon portion B, by means of adjustable plates D D', a 40 head or sleeve A' arranged upon the portion A, a rotatable shaft A² journaled therein, a hand-wheel C having a hub c adapted to screw into the sleeve and loosely mounted upon the shaft and a hollow cutter F mounted upon 45 the free end of the shaft.

4. The device for repairing spindles and the like which consists of a frame comprising portions A and B, a clamp mounted upon adjustable plates D D' adapted to slide upon the portion B, means for clamping the parts together, a sleeve arranged upon the portion A, a shaft rotatable therein, a hand wheel C 55 having a hub adapted to screw into the sleeve and loosely mounted upon the shaft and a cutting tool mounted upon the free end of the shaft and adapted to operate upon work held in the clamp.

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