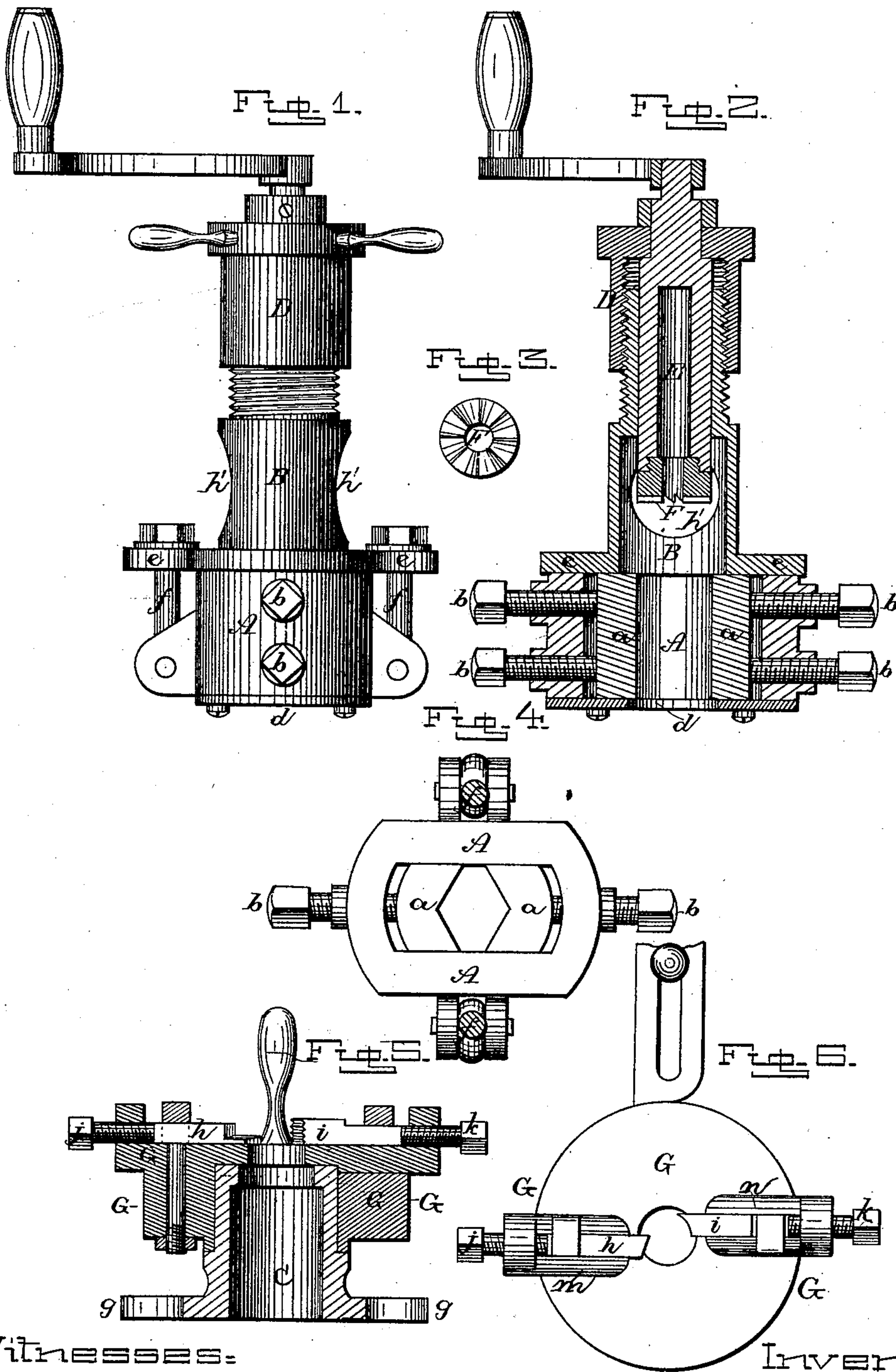


Device for Cutting and Screw-Threading Wagon-Axles.

No. 212,212.

Patented Feb. 11, 1879.



Witnesses.

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per
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN DEVICES FOR CUTTING AND SCREW-THREADING WAGON-AXLES.

Specification forming part of Letters Patent No. **212,212**, dated February 11, 1879; application filed October 12, 1878.

To all whom it may concern:

Be it known that I, FRANK F. GOKEY, of the village of Winooski, in the county of Chittenden and State of Vermont, have invented certain new and useful Improvements in Devices for Cutting and Screw-Threading Wagon-Axles; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

In the drawings, Figure 1 represents a side elevation of my axle-cutter. Fig. 2 is a sectional view of the same. Fig. 3 is a bottom view of the mill. Fig. 4 is a plan view of the part A. Fig. 5 is a sectional view of the part C. Fig. 6 is a plan view of the same.

The object of my invention is to provide an effective device for cutting back the exterior extremity of a wagon-axle, which gradually projects beyond the face of the wheel-hub as the rear collar of the axle and the ends of the hub-box become worn by frictional contact with each other in the revolution of the wheel upon the axle.

By cutting back the exterior extremity of the axle, and continuing the thread of the screw end of the axle as far as the new shoulder thus made, the axle-nut can be screwed up closely to the box, thereby holding the wheel as firmly in place as when originally made, thus avoiding the expensive and objectionable use of washers to prevent the wobbling and rattling of the wheel in its revolution upon the axle.

In the drawings, A and B and A and C are two portions of the chuck. In the interior of the part A are movable jaws *a a*, held in position and made adapted to the size of the axle by the set-screws *b b*. These jaws may be retained in the chuck by the face-plate *d*, fastened to the exterior face of the part A of the chuck, or by any similar device. The portion B of the chuck terminates in a flange, *e*, in which are recesses for hinged screw-bolts *f f*, by means of which the two parts A and B of the chuck can be conveniently and firmly attached together. Screw-threads are cut in

the other end of the part B of the chuck to fit its feed-nut D. The spindle E is fitted to the interior of the feed-nut D, its outer extremity being adapted to a crank, by which it is revolved, and its other end fitted to hold a mill, F. This mill is of an annular form, the hole in its center being of a size sufficient to admit the screw end of the axle to be cut. Its face possesses one or more cutters or knives, so arranged that when the mill is revolved and made to impinge upon the face of the outer shoulder of the axle it cuts away the face of the shoulder smoothly and accurately. By turning down the feed-nut D, by means of the handles projecting from it, the pressure of the mill upon the face of the shoulder of the axle is uniformly regulated at will. The part C of the chuck terminates also in a flange, *g*, similar to the flange *e* of the part B, so that it can be joined to the part A by the hinged screw-bolts *f f*. From the center of this flange projects a short hollow shaft, around which revolves an adjustable collar, G, which is turned by a crank. In the center of the flange or face is an opening sufficiently large to admit the passage of the screw end of the axle. From the exterior face of the collar G project guides *m n*, within which slide knives *h* and *i*, which are horizontally adjustable by means of the set-screws *j* and *k*.

In operation, the end of the axle is passed through the part A of the chuck, and between the jaws *a a*, so that the portion to be cut will be visible through the opening *h'* of the part B of the chuck when the two parts are fastened to each other by the hinged screw-bolts *f f*; then, turning down the set-screws *b b*, the grasp of the jaws *a a* upon the axle is at once secured. The cutting-face of the mill F is then brought against the shoulder of the axle, to be cut away by turning down the feed-nut D, the screw end of the axle projecting into the central opening of the mill F; then with each revolution of the spindle E the face of the shoulder of the axle is cut away by the constant and firm pressure of the spindle, caused by gradually turning up the feed-nut D. The progress of the cutting can be readily watched and noted through the opening *h'*. When a sufficient portion of the axle is cut away the part C is substituted for the part B, and the

thread of the axle-screw continued as far as desired by the adjustable knife *i*, whose cutting-points are gaged to correspond with the thread of the axle-nut, so that the nut can be made to screw up to any desired approximation to the hub-box. The end of the axle which projects outside of the nut can then be cut off by the adjustable knife *h*.

If desired, the shoulder of the axle to be cut can be cut away by the parts A and C of the chuck by using in the place of the knives a cutter whose edge is adapted to the purpose.

What I claim as new, and desire to secure by Letters Patent, is—

1. The cylinder A, having the clamping-jaws *a*, set-screws *b*, and rods *f*, whereby the cylinder may be independently secured to the spindle, and then have either a screw-cutter, or a device for cutting away the end of the axle secured to it, substantially as shown.

2. The part C, adapted to be secured rigidly

upon the axle by means of the cylinder A, and provided with the collar G, handle for revolving the collar around, a thread-cutter, and a device for cutting off the end of the axle, substantially as described.

3. The combination of a cylinder, A, for clamping to the spindle, with a mechanism for cutting away the end of the axle and a screw-cutting device, the device for cutting away the end of the axle and the device for cutting the screw-thread being adapted to be alternately used by being clamped to the cylinder, substantially as set forth.

In testimony that I claim the foregoing as my own I do affix my signature in presence of two witnesses.

FRANK F. GOKEY.

Witnesses:

WM. E. ALLEN,

CHARLES E. ALLEN.