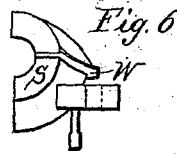
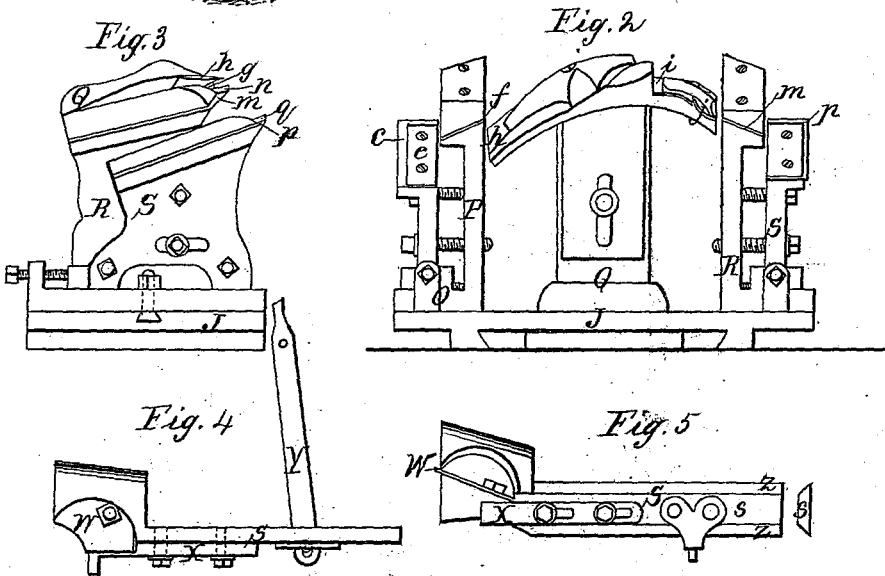
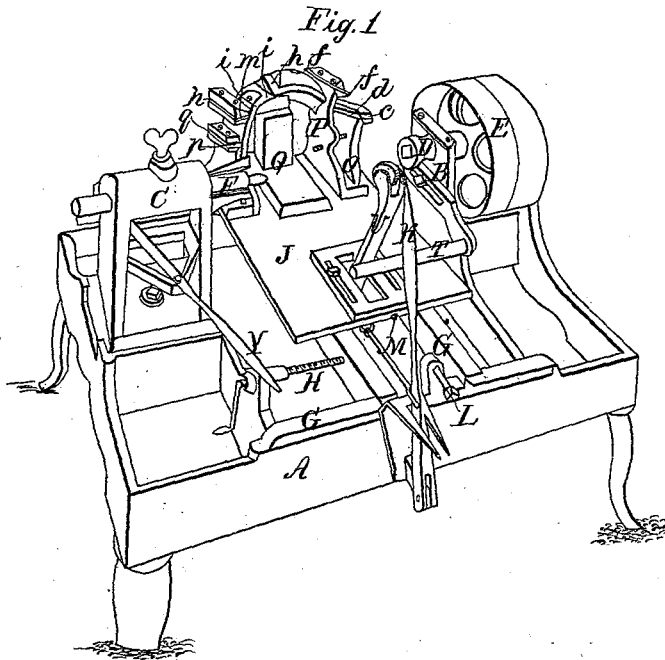


*A. Goodyear.*  
*Hub Turning.*

*No. 94,200.*

*Patented Aug. 31, 1869.*



*Witnesses*  
*W. F. Eberts*  
*L. C. Hoyle*

*Inventor*  
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*Thos. S. Sprague*

# United States Patent Office.

ANDREW GOODYEAR, OF ALBION, MICHIGAN.

Letters Patent No. 94,200, dated August 31, 1869.

## IMPROVEMENT IN LATHE FOR TURNING HUBS.

The Schedule referred to in these Letters Patent and making part of the same.

### To whom it may concern:

Be it known that I, ANDREW GOODYEAR, of Albion, in the county of Calhoun, and State of Michigan, have invented a new and useful Improvement in "Hub-Turning Machines;" and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and being a part of this specification, in which—

Figure 1 is a rear perspective view of my invention;

Figure 2 is a perspective view of the cutters from the front side of the apparatus;

Figure 3 is an elevation of the same, from the right side;

Figure 4 is a top view of the cup-moulder and its attachments;

Figure 5 is an elevation; and

Figure 6 is an end view of the same.

Like letters refer to like parts in each figure.

This invention relates to an improved machine for turning hubs, and consists in the employment of a steady-rest, of peculiar construction, for preventing chattering in the hub while being turned, and also in the combination and arrangement of the various parts.

The details of construction and manner of operation will be fully described hereinafter.

A, in the drawings, represents the frame of my hub-lathe;

B, the head-block; and

C, the tail-block, which last is adjusted longitudinally, for turning hubs of various lengths.

D is the live spindle, rotated by its fast pulley E, and provided with a square socket for the reception of one end of a tapered mandrel, which is driven through the hub, while its opposite end is centred on the tail-spindle F.

G is a carriage, travelling longitudinally in ways on the top of the frame A, and operated by the screw H.

J is a transverse carriage or slide-rest, travelling in suitable ways across the carriage G, and is operated by the hand-lever K, or any suitable device.

L is a stop-screw, projecting inward from the rear side of the frame, for determining the travel of the slide-rest, which has a rubber or other elastic cushion, M, fixed at its point of contact with the stop L, to enable the operator to take a very thin shaving from the periphery of the hub while finishing it.

U is a steady-rest, having its lower end pivoted to adjustable ears below the transverse carriage J, and its upper end provided with a friction-roller pressing against the hub, supporting and steadying it while turning, and producing a smoothly-finished hub without chatters or tool-marks, the back of the lever being held to place by the fulcrum T, secured to an adjust-

able arm projecting from the head-block, and pressing against the said fulcrum when the transverse carriage is drawn back.

At the front side of the transverse carriage J are secured the tool-posts O, P, Q, R, and S, adjustable with relation to each other and the carriage, the tool-post O carrying a knife, *c*, and spur, *d*, for cutting off the inner end of the hub.

P has its upper face inclined longitudinally and laterally, so that its knife *f*, having a bevelled edge, will turn the band-place of the hub with a "drawing-cut," while its spur *g* cuts off the fillet at the swell.

The tool-post Q is so arranged that its knives *h i j* will have a similar drawing-cut while turning the body and mouldings of the hub.

The tool-post R, with its knife *m* and spur *n*, is similarly arranged for turning the outer band-place, and

The tool-post S is similar in construction, and its knife *p* and spur *q* serve a similar purpose to those on the post O.

The hub being turned by the cutters as described, it is necessary to form a cup in its outer end. To effect this, in proper longitudinal ways *z*, on the front side of the tail-block, I place a cutter-head, *s*, sliding freely therein, and having secured to its outer end a moulding-iron, W, of the proper form to plane out the cup.

The cutter-head is moved back and forth by the hand-lever Y, as shown.

To regulate the depth of the cup, a stop, X, is secured to the cutter-head, and is adjustable by means of slots, through which the screws holding it to the cutter-head pass.

It will be seen, first, that by the peculiar arrangement of the knives and cutters in this apparatus, a "drawing-cut" will be produced in turning hubs therein; and, secondly, that all its parts are adjustable, enabling it to turn the various sizes of hubs required.

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

1. The lever-guide U, with or without a friction-roller, in connection with the fulcrum T, for steadying the hub while being turned, arranged and operating substantially as and for the purposes set forth.

2. In a hub-turning machine, of substantially the described construction, the curved, inclined, and bevelled-edged knives, in combination with the guide U and fulcrum T, as described for the purpose set forth.

ANDREW GOODYEAR.

Witnesses:

H. F. EBERTS,  
L. C. HYDE.