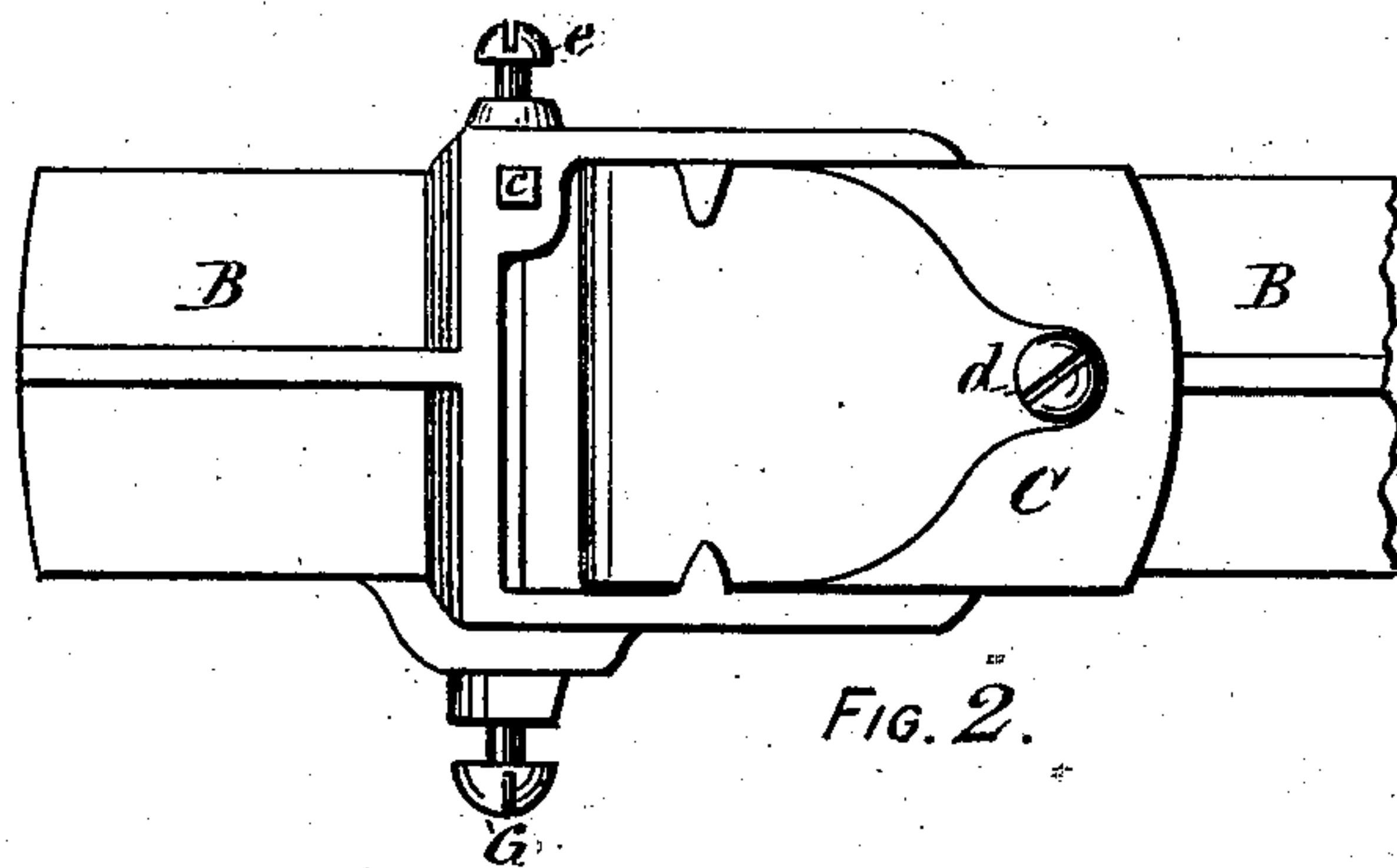
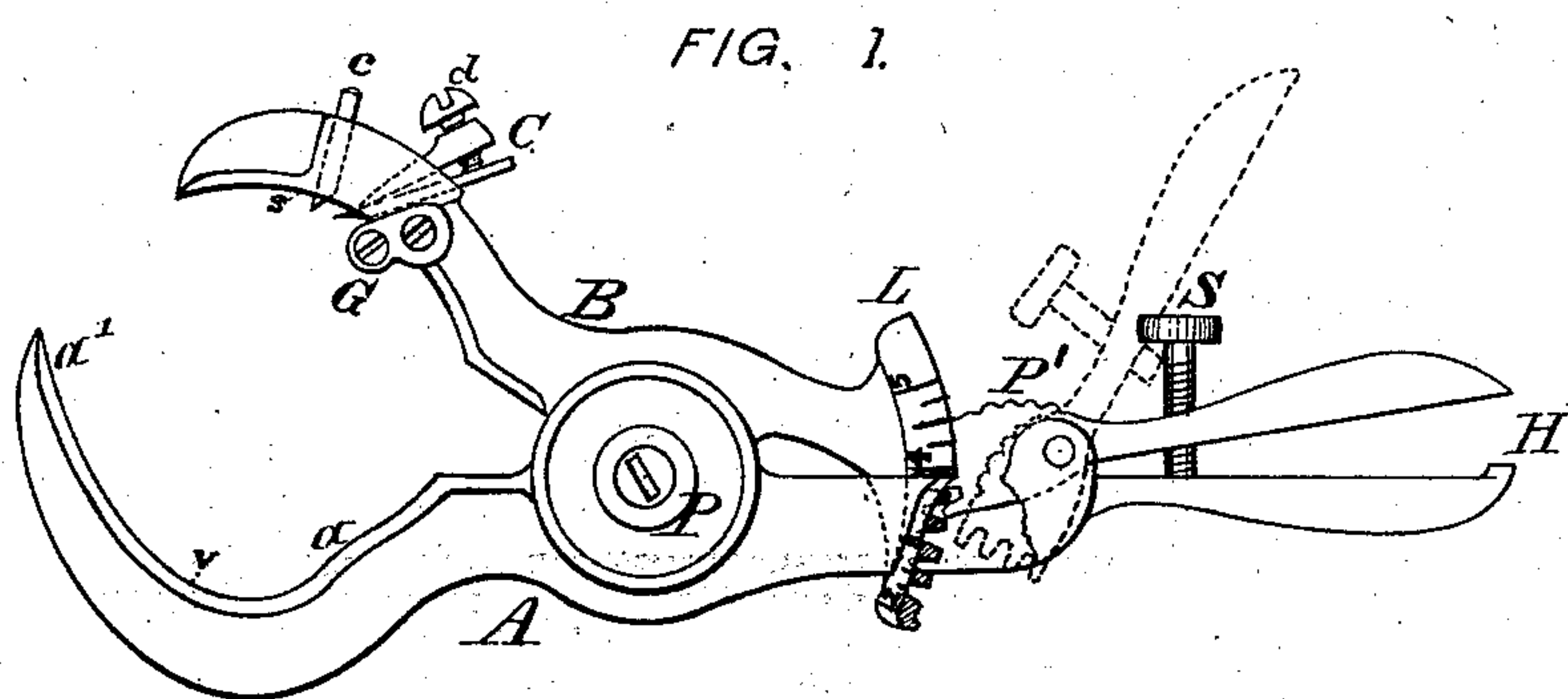


G. N. STEARNS.
Hub-Trimmer.

No. 224,308.

Patented Feb. 10, 1880.



WITNESSES.

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GEORGE N. STEARNS, OF SYRACUSE, NEW YORK.

HUB-TRIMMER.

SPECIFICATION forming part of Letters Patent No. 224,308, dated February 10, 1880.

Application filed April 15, 1879.

To all whom it may concern:

Be it known that I, GEORGE N. STEARNS, of the city of Syracuse, county of Onondaga, and State of New York, have invented certain new and useful Improvements in Hub-Trimmers; and I declare the following to be such a full and complete description of the same as to enable any person skilled in the art to which it appertains to make and use the same.

The object of my invention is to provide a device for trimming or boring wagon-hubs for the reception of the hub-bands. These bands are made of metal to standard sizes, and the hubs are trimmed down ordinarily with a saw, chisel, and rasp, so the band will fit on snugly. This process was necessarily tedious, and upon fine work required a considerable expenditure of time and skill. With my device the labor is greatly lessened, and the operation is made positive by means of an ingenious combination of adjustable movements.

The device employed to obtain the desired result consists of two jaws pivoted together, the upper being provided with cutters and terminating in a graduated limb provided with a rack. The lower jaw has a peculiarly-curved recess, and is provided with lugs, between which a pinion is journaled, operating to engage the rack on the limb of the upper jaw. An adjusting-screw passing through the handle of the pivot serves to compensate for variations from standard size of the hub-bands or for minute adjustments in fine work. An extension of the lower jaw, in conjunction with the pinion, forms a handle, with which the device is held in the operation of trimming or tenoning hubs.

For a more specific description of my newly-invented hub-auger, reference is had to the accompanying drawings, forming a part of this specification—like letters indicating corresponding parts—in which—

Figure 1 is a side view of the tool, showing the device adjusted for use. Fig. 2 is a plan view of the upper or cutter jaw, B.

The letter A represents the lower jaw, constructed with the peculiarly-curved recess *v*, having the swell *a* and incline *a'*, which form bearings for the lower portion of the hub at two points of its periphery, the graduation of the swell-curve *a* and incline *a'* of the recess

being coincident to the varying diameters of standard hub-bands, in order to secure the necessary bearing in trimming hubs for the different-sized bands. The jaw A terminates in a half-handle, H. A disk-shaped joint directly back of the curve is provided, and the upper jaw is pivoted thereto by a screw-bolt, P. Midway between the pivot P and handle H a slotted mortise is cast on, terminating in two lugs, between and upon which the segmental rack P' is journaled.

The upper jaw, B, is constructed, as shown at Fig. 1, with a segmental curve, *s*, and a disk-joint ground down to coincide with that of the lower jaw. The upper jaw is provided with a quadrant-limb, L, upon one side of which a graduated scale is marked, by which the size to be adjusted is indicated. A rack is cut upon this limb, and is engaged by the segmental rack P'. The horizontal or main cutter C is set in a box-mortise in the upper jaw, and securely retained at the proper adjustment by means of a cap resting against a stud upon each side of the mortise and a screw, *d*, passing through the cap and pressing against the cutter. An auxiliary chisel-shaped cutter, *c*, standing at right angles to the main cutter C, is retained by the screw *e*, and forms a lip, facilitating the operation of the tool. A gage, G, is screwed onto the side of the jaw, and operates to determine the width of tenon to correspond to that of the hub-band.

The segmental rack P', journaled between the lugs of the lower jaw, operates to engage the rack of the quadrant-limb and forms a positive adjustment and also a compound lever upon the fulcrum P of the upper and lower jaws. The segmental rack P' is extended so as to coincide with the extension of the lower jaw, and with it forms a handle, H, with which the tool is grasped and operated.

An adjusting-screw, S, passing through the pinion-handle and bearing upon that of the lower jaw, operates to compensate for variations from standard size of the hub-bands and for minute adjustments on fine work.

It will be remarked that any adjustment within the scope of the tool can be readily obtained by means of the rack-and-pinion movement, and this adjustment can be varied, as aforesaid, by the screw-adjustment.

To operate the rack and pinion in changing to different sizes, it is simply necessary to throw up the pinion-handle so as to disengage the pinion, when the upper jaw can be opened
5 or closed to the desired size, which is indicated by the graduated scale on the quadrant-limb.

It will be seen that the quadrant-limb works down through the mortise in the lower jaw.

I found it necessary, to make a tool of this
10 kind work successfully in practical use, to provide a device which could be readily placed upon the hub, and which would stop cutting automatically when the desired sized tenon was reached. The reason is obvious, as is also
15 the fact that this device accomplishes this desired result, for the reason that the tool is first set by the scale on the quadrant to the size of the hub-band, and it is then opened wide enough to fit over the wagon-hub, and as the
20 timber is cut away the jaws contract until the required size is reached, when the tool ceases to cut.

The jaw A, provided with the peculiarly-curved recess *v*, having swell *a* and incline
25 *a'*, not only forms an adjustable gaging-jaw, but also serves to keep the tool central on the hub, always presenting two bearing-points on the periphery of the hub, while the segmental curves *s* in the cutter-jaw B, forming
30 the third point of bearing, insures a true circular and uniform cut on the periphery of the hub throughout the different sizes.

The width or depth of tenon is determined by the screw-gage G, which can be set to the
35 required width, as desired.

All of the movements are simple and positive, and the entire device is made of metal, and is strong, compact, and durable.

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

1. The jaw B, provided with cutters C *c*, and quadrant L, pivoted to the jaw A, in combination therewith and the segmental rack P',
45 substantially as and for the purposes specified.

2. The jaw A, provided with a recess, *v*,

having swell *a* and incline *a'*, in combination with the cutter-jaw B, provided with a segmental curve, *s*, substantially as specified, and for the purpose set forth. 50

3. The quadrant L, provided with a graduated scale and rack, the segmental rack P', and thumb-screw S, in combination with each other and the pivoted expanding jaws, substantially as described, and as set forth. 55

4. The cutters C *c* and gage G, in combination with each other and the adjusting-jaws, substantially as specified, and for the purposes set forth.

5. The adjusting-gage jaw A, constructed as described, in combination with the cutting-jaw B, the said jaws being hinged together by pivot P and actuated by means of the quadrant L, having a rack and graduated scale on the side thereof, and the segmental rack P', to
60 cease cutting automatically when the desired sized tenon is reached, in the manner and for the purpose substantially as set forth and specified. 65

6. The segmental rack P', pivoted to a gage-jaw, A, of a device for trimming hubs, provided with an adjusting-screw, *s*, operating to compensate for variations in the teeth of segmental rack P', and to secure a fineadjustment
70 to desired size of hub-band, said segmental rack being combined with a corresponding rack constructed on a cutting-jaw, B, as herein specified and set forth. 75

7. In a tool for trimming hubs, the cutting-jaw B, provided with a quadrant, L, made integral therewith, and having an indicating-scale and rack, in combination with a segmental rack, P', pivoted to a gage-jaw, A, as herein specified, and for the purpose set forth.

In testimony that I claim the foregoing I
85 have hereunto set my hand this 26th day of November, A. D. 1878.

GEO. N. STEARNS.

Witnesses:

J. NEAL PERKINS,
HOMER WESTON.