No. 767,317. PATENTED AUG. 9, 1904.

C. A. STRAND.

ADJUSTABLE SUPPORT FOR BORING TOOLS.

APPLICATION FILED JULY 17, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

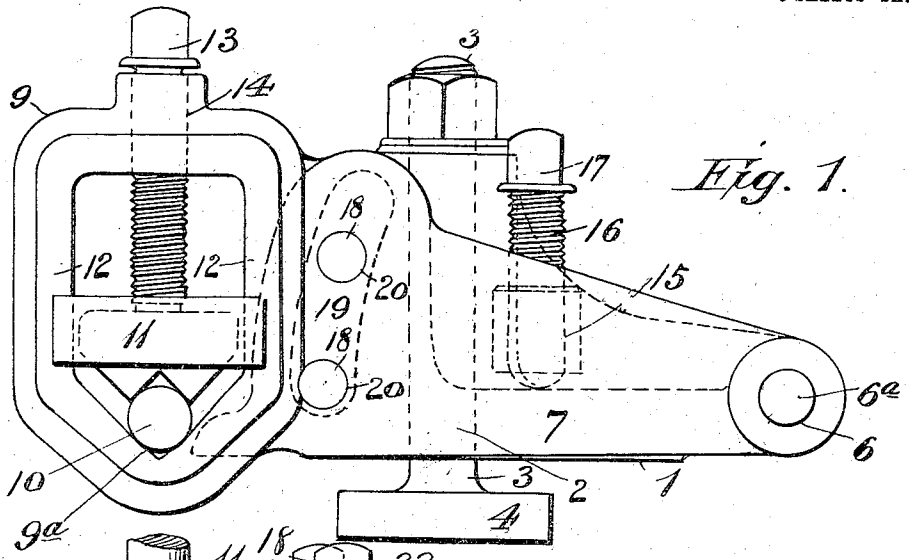


Fig. 1.

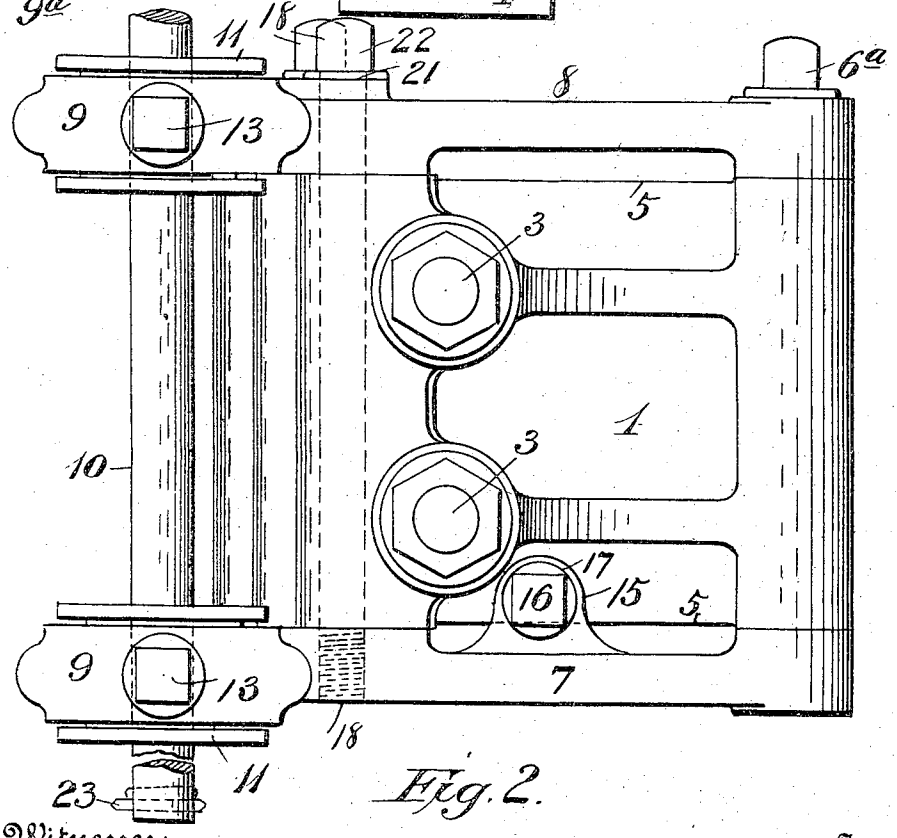


Fig. 2.

Witnesses:

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Frank G. Radcliffe.

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NO MODEL. 3 SHEETS—SHEET 2.

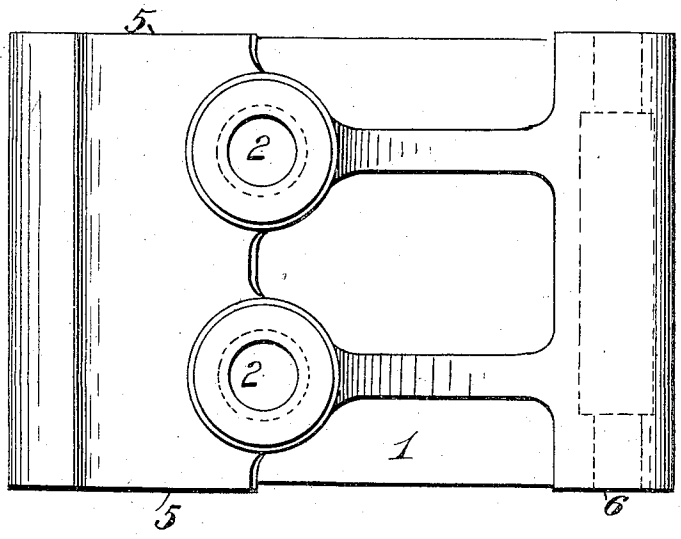


Fig. 3.

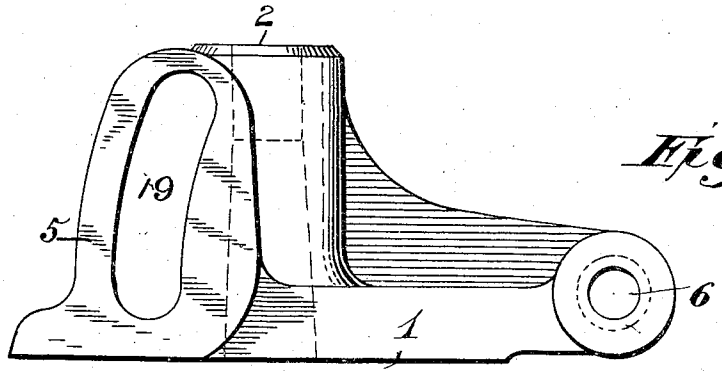


Fig. 4.

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NO MODEL. 3 SHEETS—SHEET 3.

Fig. 6

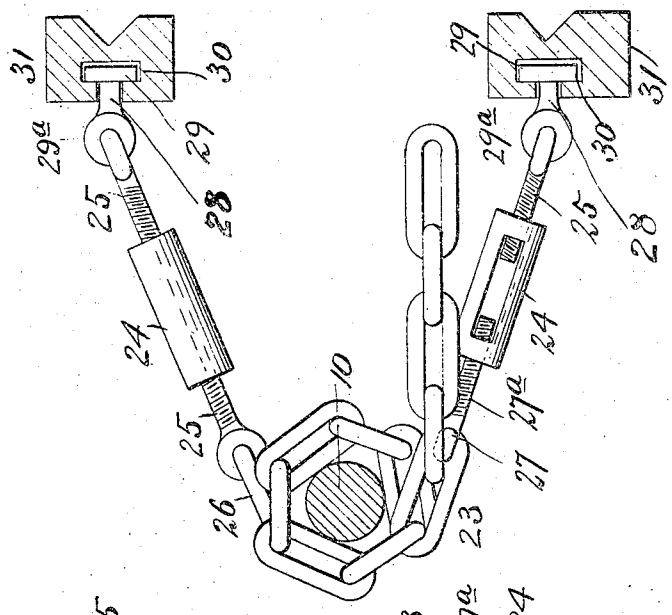
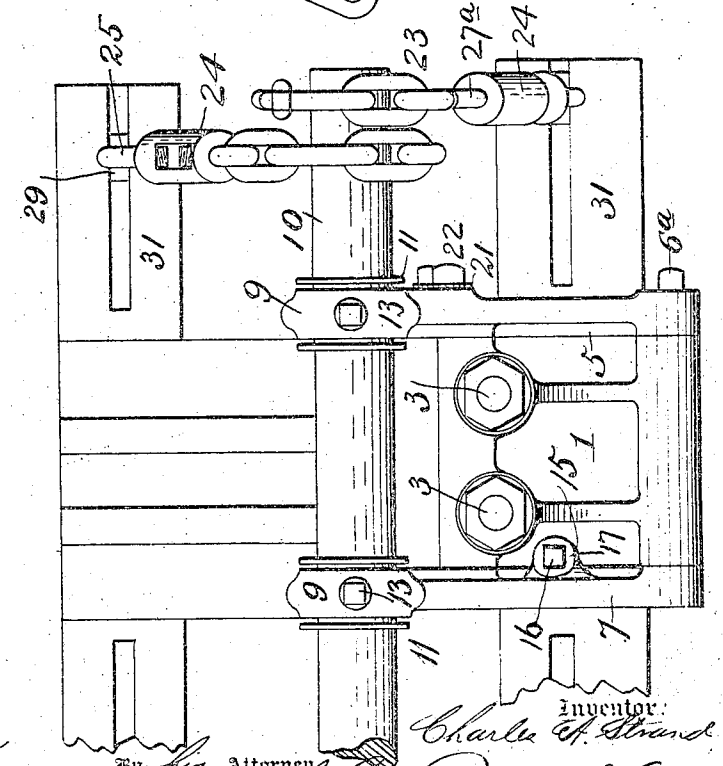


Fig. 5.



Witnesses:
L. L. Burket.
Wm. H. Durand.

Inventor:
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By his Attorney
Louis Bagger & Co.

No. 767,317. Patented August 9, 1904.

UNITED STATES PATENT OFFICE.

CHARLES A. STRAND, OF CHICAGO, ILLINOIS.

ADJUSTABLE SUPPORT FOR BORING-TOOLS.

SPECIFICATION forming part of Letters Patent No. 767,317, dated August 9, 1904.

Application filed July 17, 1903. Serial No. 166,022. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. STRAND, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Adjustable Supports for Boring-Tools, of which the following is a specification.

My invention relates to adjustable supports for boring-tools; and the object of the same is to construct an efficient adjustable support for both light and heavy boring-bars, which support will be adapted to be mounted on an ordinary lathe and will not loosen during use.

My invention consists of a novel construction, which is fully described in this specification and more specifically pointed out in the claims and illustrated in the accompanying drawings, forming part of the specification, and in which—

Figure 1 is a side elevation of my device. Fig. 2 is a plan view thereof. Fig. 3 is a plan view of the base. Fig. 4 is a side elevation of the same. Fig. 5 is a plan view of my device together with the chain device for holding the bar down. Fig. 6 is a transverse section of the same.

Like numerals of reference designate like parts in the different views of the drawings.

The numeral 1 designates a base having two transverse apertures 2 therein to accommodate bolts 3, having **T**-shaped heads 4 on their lower ends to adapt them to engage tool-post **T**-slots formed in the cross-carriage (not shown) of a lathe. The sides 5 of the base 1 are planed and extend parallel, and an aperture 6 traverses the base 1 and extends perpendicular to the sides 5. Two levers 7 and 8 are fulcrumed on a bolt 6^a, passing through the aperture 6, which levers carry frames 9 on their free ends, which have **V**-shaped seats 9^a therein to accommodate a boring-bar 10, resting therein and engaged by saddles 11, slidably mounted in parallel guides 12, formed by the sides of the frames 9. Set-screws 13 are mounted in apertures 14 in the frames 9 and bear on the saddles 11 to serve to clamp the boring-bar 10 against all movement.

To adjust the angle of the levers 7 and 8, an apertured ear 15 is formed on the lever 7, and an adjusting-screw 16 is fitted in said aperture with its point bearing on the upper face of the base 1. A head 17 to accommodate a wrench is formed on the screw 16.

Means for clamping the levers 7 and 8 against all movement during the boring is provided in the shape of two clamping-bolts 18, which pass through a circular slot 19 in the base 1 and fit apertures 20 and 21 in the levers 7 and 8, respectively. The bolts 18 are tapped into the apertures 20. Heads 22 on the bolts 18 bear on the outer face of the lever 8.

In using my support the heads 4 of the bolts are first inserted in the tool-post slots in the cross-carriage, after which the boring-bar 10, provided with suitable cutters 23, of tempered or self-hardening steel, is placed in seats 9^a and secured by saddles 11. The clamping-bolts 18 are next loosened by means of a wrench applied to heads 22 to set the bar 10 in alinement with the center of the bore by means of the adjusting-screw 16, operated with a wrench, after which the bolts 18 are tightened. My support is adapted to hold a large range of different sizes of boring-bars, and but two different sizes of the device are required to fit all lathes of over twelve inches swing. Moreover, it can be mounted on any ordinary style of cross-carriage without alteration.

When the larger size of device is employed for holding large long bars during very heavy boring, the end of the bar holding the cutting-tools tends to tilt or incline downwardly, thereby tilting the opposite or rear end of the bar 10 upwardly. To prevent this drooping of the tool-carrying end of the bar, I have designed a chain device for holding the rear end of the bar from rising, which device consists of an open flat-linked chain 23, carrying on one end a turnbuckle 24, connecting two threaded eyebolts 25, one of which is engaged by the end link 26 of one end of the chain. A second turnbuckle 24 is also employed, which connects a threaded eyebolt 25 and the threaded shank 27^a of a hook 27, adapted to be engaged in any of the links 26 of the chain. Permanently connected to the free eyebolts 25 are eyes 29^a, formed on the stems 28 of the **T** members 29. When in use,

the chain 23 is given one turn around the rear end of the boring-bar 10 and the heads of the T member 29 engaged in the T-slots 30, formed in arms 31 in the cross-carriage of the lathe. The chain 23 is next drawn taut and the hook 27 engaged in one of the links 26, dropping as many on the end as necessary, after which the turnbuckles are tightened. To change the position of the bar 10, it is only necessary to loosen one of the turnbuckles.

I do not wish to be limited as to details of construction, as these may be modified in many particulars without departing from the spirit of my invention.

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

1. In an adjustable support for boring-tools, the combination of the base member, the means for detachably securing said base member to the cross-carriage of a lathe, the pair of levers pivoted to said base and having seats therein for the boring-bar, means for clamping said boring-bar, the means for pivotally adjusting said levers comprising a lateral ear upon one of said levers and a screw engaging said ear and bearing upon said base member and the means for clamping said levers against all movement, substantially as described.

2. In a device of the character described, the combination of a base member having a curved slot, lever members pivoted laterally to said base member and provided with seats for a boring-bar, means for clamping said bar in position, and bolts passing through said curved slot and each having one end tapped in an aperture in one of said levers and its other end passed through an aperture in the opposite lever and equipped with tightening means.

3. In a device of the character described, the combination of a base member having a curved slot, lever members pivoted laterally to said base member and provided with seats for a boring-bar, means for clamping said bar in position, bolts passing through said slot and each having one end tapped in an aperture in one of said levers and its opposite end passing through an aperture in the opposite lever and adapted to be tightened therein, and an adjusting-screw engaging an apertured ear on one of said levers and bearing upon said base member.

4. In an adjustable support for boring-tools, the combination of the base member having a slot therein formed on the arc of a circle, the levers pivoted to said base and having seats therein for a boring-bar, means for clamping said boring-bar, and the clamping-bolt passing through said slot and connecting said levers, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subcribing witnesses.

CHARLES A. STRAND.

Witnesses:
OSCAR NICOLAI,
GEO. B. KINZIE.