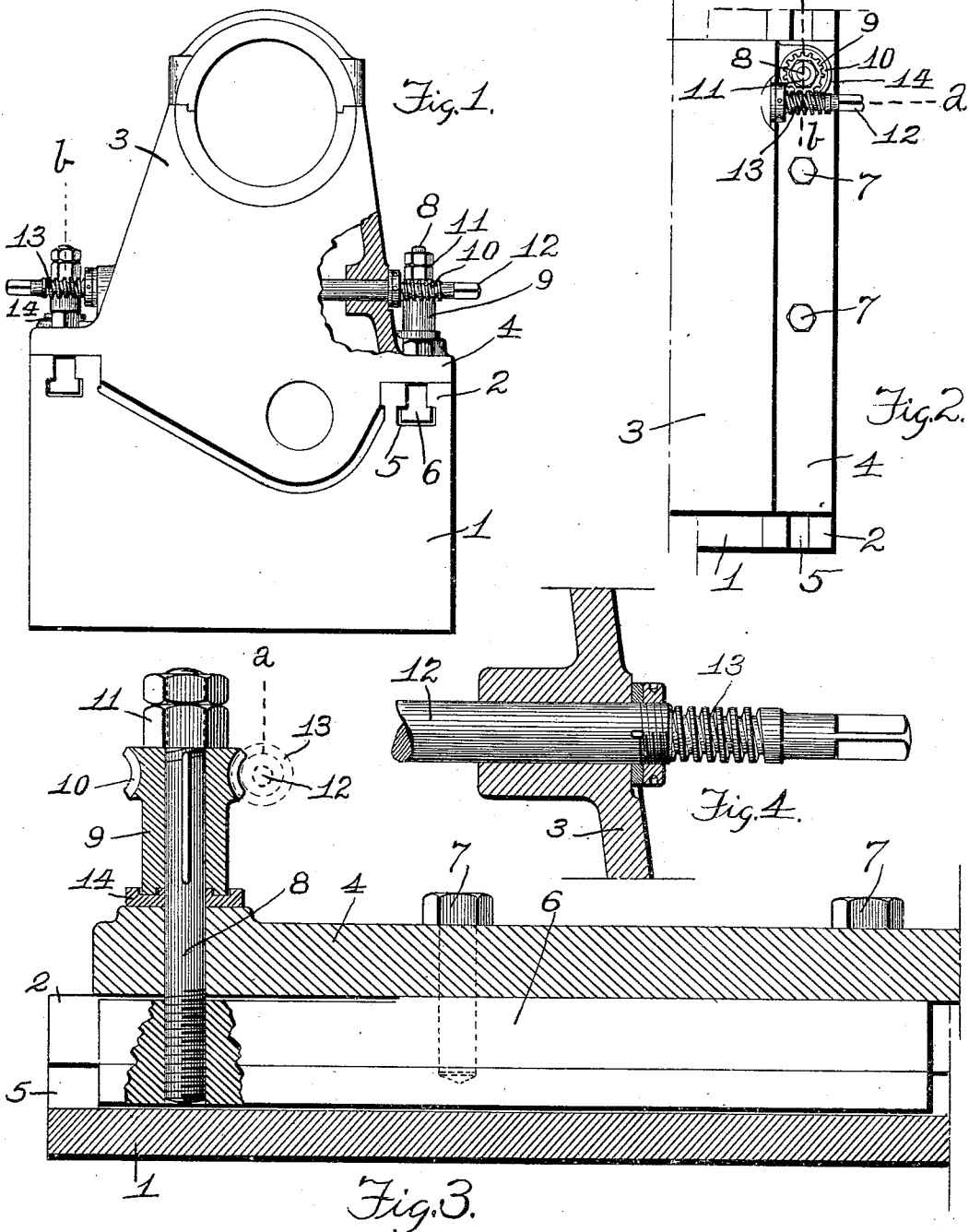


A. WOOD.
LATHE HEAD CLAMP.
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961,330.

Patented June 14, 1910.



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UNITED STATES PATENT OFFICE.

AUGUSTUS WOOD, OF HAMILTON, OHIO, ASSIGNOR TO NILES-BEMENT-POND COMPANY,
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LATHE-HEAD CLAMP.

961,330.

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To all whom it may concern:

Be it known that I, AUGUSTUS WOOD, a citizen of the United States, residing at Hamilton, Butler county, Ohio, have invented certain new and useful Improvements in Lathe-Head Clamps, of which the following is a specification.

In lathes of very considerable size much time is consumed in properly clamping the longitudinally adjustable head to the bed, it generally being necessary either to climb over the very wide bed so as to clamp one side of the head after clamping the other, or else to walk around the end of the bed, and then to return to the working side of the lathe. These considerations apply to the tail-stocks or puppet heads of ordinary large lathes and also to the shifting head-stocks of double ended lathes, such, for instance, as doubled-headed driving wheel lathes.

The present invention provides for doing the clamping by operations at one side of the lathe, and the invention will be readily understood from the following description taken in connection with the accompanying drawing in which:—

Figure 1 is an end elevation of the bed and sliding head-stock of a lathe provided with a head-clamp embodying my invention, a portion of the head-stock appearing in vertical section in the plane of line *a* of Figs. 2 and 3: Fig. 2 a plan of one of the side flanges of the head-stock: Fig. 3 a vertical longitudinal section through one of the side flanges of the head-stock and through the portion of the bed engaged thereby, the section being in the plane of line *b* of Figs. 1 and 2: and Fig. 4 a vertical transverse section of a portion of the head-stock in the plane of line *a* of Figs. 2 and 3.

In the drawing:—1, indicates the lathe bed: 2, the ways at the opposite sides thereof: 3, the shifting head mounted on the bed, the head being illustrated in the present instance as the head-stock: 4, the side flanges of the head engaging the ways of the bed: 5, a longitudinal tee-slot in each of the ways of the bed: 6, long tee-shaped blocks disposed in the slots, one below each of the flanges: 7, screws engaging the head-flanges and the blocks and serving as means by which the head may be clamped to the bed, tightly if necessary but to be preferably employed in securing a snug sliding fit of the head to

the bed: 8, a stud going through each flange and screwed down into one end of the appropriate one of the blocks: 9, a hub feathered on the upper portion of each stud: 10, a worm-gear formed on each of these hubs: 11, lock-nuts on studs 8 above the hubs: 12, a shaft journaled across the head and provided with means preferably at each end, by which it may be turned, by means of a wrench or crank, this shaft being provided with thrust-collars to prevent its movement endwise: 13, a worm on each end portion of the shaft in position to engage the worm gears: and 14, cupped thrust-collars resting on the flanges of the head and engaged by the lower ends of hubs 9.

It is to be observed in Fig. 3 that the block 6 has a portion of its body drawn completely home up against the flange 4, and in this condition the head should have a snug sliding fit on the bed. At the end of the block where it is engaged by the stud 8 the block is not up home against the flange, and its flexibility will permit it to be drawn tightly up in the slot by means of the stud 8. The above is the preferable arrangement, though it is not necessary that the screws 7 draw the block up home against the flange when the block engages the roof of the tee-slot with a snug sliding fit, as in any event bolts 7 need not be disturbed after the block has been once adjusted. The clamp being loose, so far as studs 8 are concerned, and the head having been shifted to proper position along the bed, the worm-shaft is to be turned in the proper direction so as to operate the studs to clamp the free portion of the blocks tightly up to the roofs of the tee-slots, thus securing the head firmly in place, and the head is loosened by turning the worm-shaft in the opposite direction. The cupped collars 14 serve to retain lubricant and lessen the friction of the hubs upon the flanges, thus lessening the amount of power requisite in clamping the head to the bed.

The fact will readily be appreciated that some delicacy of adjustment is required in getting the two studs to work in harmony so that one of them will not exercise its limit of tight clamping before the second one has properly done its work. The feathering of the hubs upon the studs, in conjunction with the lock-nuts, serves in adjusting the device for continued harmonious

action. The clamps being loose, so far as the studs are concerned, and the nuts being loosened, the nuts on one of the studs may be adjusted to secure the proper tight clamping effect. The nuts on the second stud may then be similarly adjusted and made secure, and thereafter the worm-shaft will bring about a proper clamping action on the part of each of the blocks.

10 I claim:—

1. A lathe-head clamp comprising, a bed provided with ways having undercut portions, a head having side-portions engaging said ways, a block disposed under each side-
15 portion of the head and engaging the undercut portions of the ways, vertical studs passing through the side-portions of the head and engaging the blocks, a worm-gear on each stud, a worm-shaft journaled across the head, and worms carried by the shaft and engaging the worm-gears, combined substantially as set forth.

2. A lathe-head clamp comprising, a bed provided with ways having undercut portions, a head having side-portions engaging said ways, a block disposed under each side-
25 portion of the head and engaging the undercut portions of the ways, vertical studs passing through the side-portions of the head and engaging the blocks, a worm-gear on each stud, a worm-shaft journaled across the head, worms carried by the shaft and engaging the worm-gears, and clamping screws engaging the side portions and blocks to
30 serve in clamping the blocks to the ways independent of the studs, combined substantially as set forth.

3. A lathe-bed comprising, a bed provided with ways having undercut portions, a head
40 having side-portions engaging said ways, a block disposed under each side-portion of the head and engaging the undercut portions

of the ways, vertical studs passing through the side-portions of the head and engaging the blocks, a worm-gear on each stud, a
45 worm-shaft journaled across the head, worms carried by the shaft and engaging the worm-gears, and means for independently adjusting the worm-gears longitudinally of the studs, combined substantially as set forth.
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4. A lathe-head clamp comprising, a bed provided with ways having undercut portions, a head having side-portions engaging said ways, a block disposed under each side-
55 portion of the head and engaging the undercut portions of the ways, vertical studs passing through the side-portions of the head and engaging the blocks, a hub secured on each stud, a worm-gear carried by each hub, a cupped collar engaged by the lower end of each hub, a worm-shaft journaled across the head, and worms carried by the shaft and engaging the worm-gears, combined substantially as set forth.
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5. A lathe-head clamp comprising, a bed provided with ways having undercut portions, a head having side-portions engaging said ways, a block disposed under each side-
65 portion of the head and engaging the undercut portions of the ways, vertical studs passing through the side-portions of the head and engaging the blocks, a worm-gear splined on each stud, lock-nuts on the studs for adjusting the worm-gears on the studs, 75
a worm-shaft journaled across the head, and worms carried by the shaft and engaging the worm-gears, combined substantially as set forth.

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