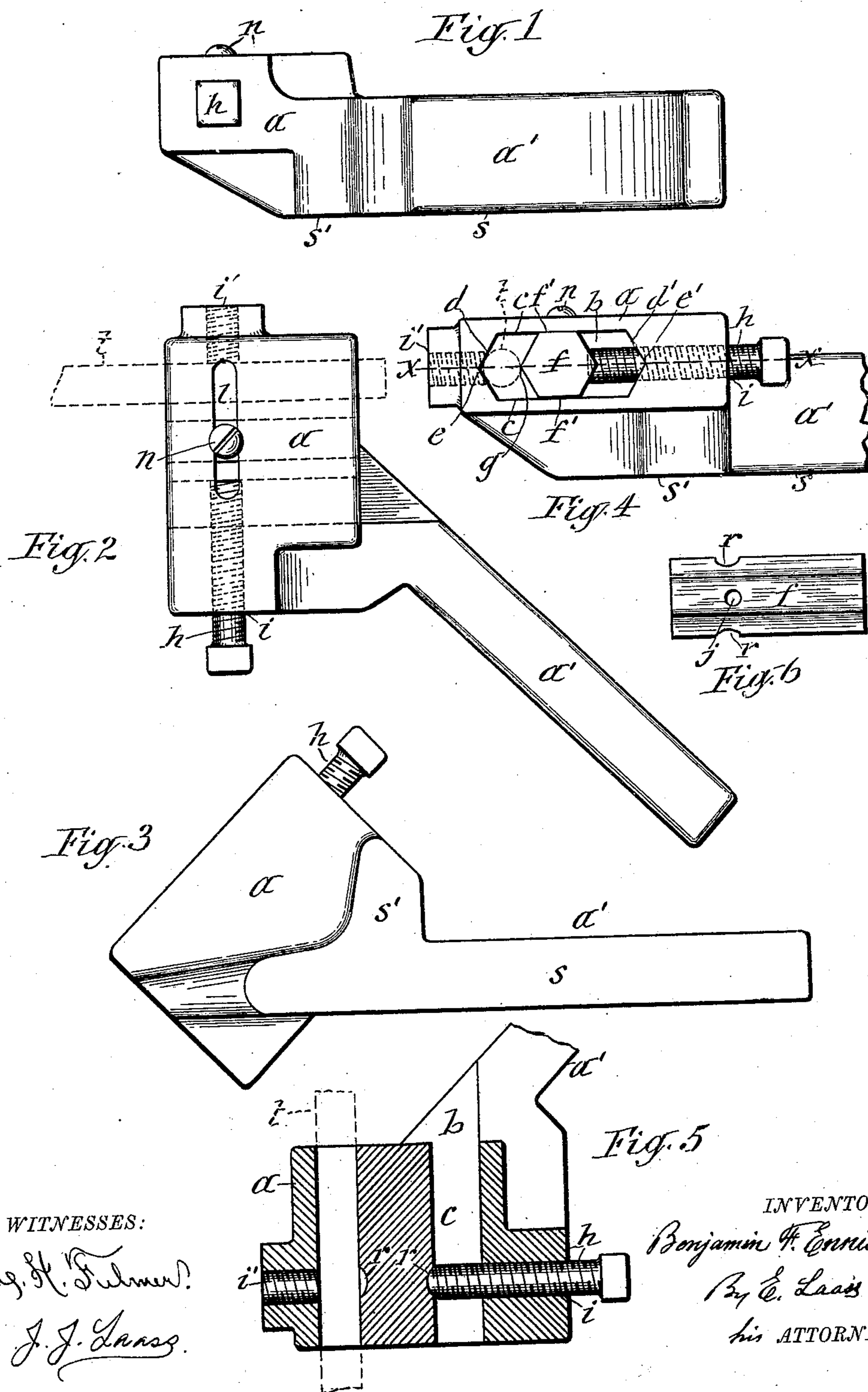


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LATHE TOOL HOLDER.
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LATHE TOOL-HOLDER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BENJAMIN F. ENNIS, a citizen of the United States, and resident of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Lathe Tool-Holders, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention has special reference to the class of tool holders which are designed to be supported on the tool-post of a lathe, upon which support it may be placed in various positions to present the tool at any desired angle in relation to the axis of the lathe.

The object of the invention is to provide a tool-holder of the aforesaid class which shall be equipped with a tool-holding jaw possessed of superior strength and efficiency of firmly gripping and securely holding a cylindrical tool of minimum diameter as well as tools of greater diameters without danger of unduly straining the said jaw. And the object furthermore is to provide the tool holder with a jaw having a plurality of sharp tool-gripping ribs disposed to allow a perfect or unimpaired gripping rib thereof to be placed in operative position previously occupied by an injured gripping-rib of said jaw. And to that end the invention consists in the improved construction and combination of parts hereinafter described and illustrated in the accompanying drawings in which—

Figure 1 is a side view of a tool-holder embodying my invention; Fig. 2 is a plan view of the same; Fig. 3 is an inverted plan view; Fig. 4 is a face view of the tool-holding head; Fig. 5 is a longitudinal section on the line —X—X— in Fig. 4; and, Fig. 6 is a detached side view of the adjustable tool-gripping jaw or block.

—a— represents the tool-receiving head of the tool-holder, and —a¹— the supporting-arm which extends from the said head and is mounted on the tool-post. (Not shown.) The head —a— is formed with an aperture —b— which extends longitudinally through said head and parallel with the shank of the tool to be held therein. Said aperture is formed with parallel straight side-walls —c—c— united at both ends by transverse walls —d—d¹—, on one of which the tool —t— (indicated by dotted lines) is seated. Said tool-seat is thus stationary or fixed in the holder and is preferably of the form of a

V-shaped groove —e— to afford two bearings for a cylindrical tool, the inclinations of said bearings serving to retain the tool central between the side-walls —c—c— of the aperture —b—. The opposite transverse wall —e¹— is formed with a screw-threaded bore —i— in a line central between the side walls —c—c— and parallel therewith. Through the said bore passes a set-screw —h— for operating the adjustable tool-gripping jaw —f— which extends longitudinally through the aperture —b— and is formed with parallel sides —f¹— fitted closely to the side-walls —c—c— to properly sustain the jaw laterally in the aperture of the tool-holder and prevent the said jaw from turning therein. The jaw —f— is detached from the set-screw —h— which merely bears on the back of the said jaw at a point central between the side walls —c—c— of the aperture —b— and consequently diametrically opposite the center of the tool-seat —e—. The jaw —f— is formed with a longitudinal tool-gripping edge or rib —g— central between the side-walls —c—c— of the aperture —b— and presented toward the tool-seat —e— at a point diametrically opposite the rib —g— which is in a direct line passing through the axial center of the screw. By turning the aforesaid set-screw in a direction to force it inward, it is caused to press the jaw into engagement with the tool —t— supported on the stationary seat —e—. In the said engagement the rib —g— bites the tool on a line central between the side walls —c—c— of the tool-holder head and parallel therewith and thus effectually prevents the tool from turning in the holder. I preferably form the jaw —f— hexagonal and thereby provide the jaw with six of the aforesaid ribs and at the same time increase its depth between the bearing of the set-screw and the rib presented toward the tool-seat. The said increased depth of the jaw imparts thereto greater strength for resisting breakage by pressure of the set-screw which bears on the back of the jaw in a line with the reinforcement thereof. In a jaw of the aforesaid shape, I form a flattened indentation —r— in the edge or rib —g— for a bearing of the set-screw as shown in Fig. 5. The grooved tool-seat —e— is of the same width as the aperture —b— and shaped to correspond to angles of the hexagonal jaw —f— as shown in Fig. 4 of the drawings. A screw —n—

passing through a transverse slot —*l*— in one of the side-walls —*c*— and engaging a socket —*j*— in the side of the jaw —*f*— serves to prevent said jaw from slipping out of the aperture —*b*—. By forming both transverse walls —*d*—*d'*— of the aperture —*b*— with V-shaped grooves —*e*—*e'*— and with screw-threaded bores —*i*—*i'*— and forming the jaw —*f*— hexagonal as shown in Fig. 4, the tool-holder is adapted to be used in reversed positions and is thus more convenient in its use.

To enable the tool-holder to better resist the torsional strain transmitted to it in the operation of the tool, I form it with broad bearing-surfaces —*s*—*s'*— by which it rests on the tool-post or slide-rest of the lathe and is clamped thereon in the usual and well known manner.

What I claim as my invention is:—

1. A lathe-tool holder having its head provided with an aperture formed with parallel straight side-walls, a grooved V-shaped tool-seat in one of the transverse walls of the aperture and a threaded bore in the center of the opposite transverse wall, a jaw of hexagonal shape in cross-section disposed in the aperture and adjustable to present different corners thereof toward the tool-seat, and a set-screw passing through the aforesaid bore

and bearing on the jaw in a line passing through two diametrically opposite corners thereof as set forth and shown.

2. A lathe-tool holder having the tool-receiving head formed with an aperture extending therethrough, the side-walls of said aperture being straight and parallel and the transverse walls being formed with longitudinal V-shaped grooves, threaded bores extending through the transverse walls central of and at right angles to the aforesaid grooves, and a slot through one of the side-walls at right angles to the transverse walls, a tool-gripping block shaped hexagonal in cross-section disposed in the aforesaid aperture movable toward and from the transverse walls thereof and guided by the side-walls and provided with a threaded socket in its side, a screw passing through the slot in the side-wall of the aperture and inserted into the socket of the tool-gripping block, and a set-screw passing through the threaded bore of one of the transverse walls and bearing on the tool-gripping block as set forth and shown.

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