

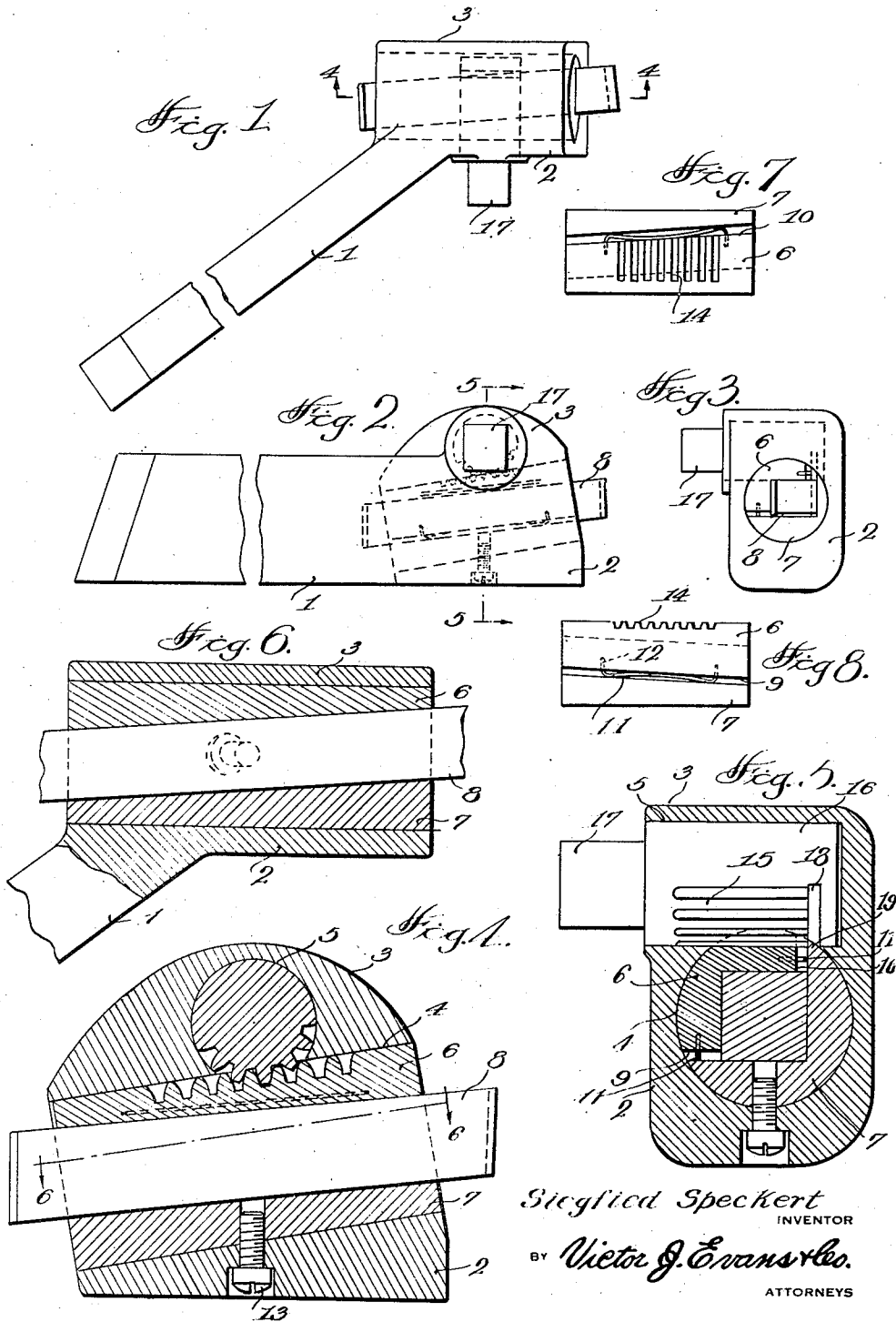
April 18, 1944.

S. SPECKERT

2,347,136

TOOL HOLDER

Filed Aug. 17, 1942



Siegfried Speckert
INVENTOR
BY Victor J. Evans & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE

2,347,136

TOOLHOLDER

Siegfried Speckert, South Gate, Calif.

Application August 17, 1942, Serial No. 455,123

3 Claims. (Cl. 29—96)

This invention relates to tool holders for lathes and the like, and its general object is to provide a cutting tool holder that makes it possible to bring about application, adjustment and removal of the tool relative to the holder, in an easy and expeditious manner, but casual removal or displacement of the tool is practically impossible.

A further object is to provide a tool holder that includes companion wedge elements for the tool, one element being fixed and the other movable by rack and pinion means, the teeth providing the rack being formed on the movable element which is held against removal from the head of the holder by the pinion, while the latter is held against removal by abutting contact with the stationary or fixed element, thus it will be seen that my holder includes very few parts, yet performs its intended function in an efficient manner.

Another object is to provide a tool holder which includes a stationary wedge element and a movable wedge element, the latter being spring pressed and is normally urged away from the stationary element, so that when the movable element is in released position, it will be held spaced from the stationary element to allow instant insertion and removal of the tool relative to said elements.

A still further object is to provide a tool holder that is simple in construction, inexpensive to manufacture, and extremely efficient in operation, use and service.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawing and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawing wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a top plan view of the tool holder which forms the subject matter of the present invention.

Figure 2 is a side elevation thereof.

Figure 3 is a front view.

Figure 4 is a sectional view taken approximately on line 4—4 of Figure 1, looking in the direction of the arrows.

Figure 5 is a sectional view taken approximately on line 5—5 of Figure 2, looking in the direction of the arrows.

Figure 6 is a sectional view taken approximate-

ly on line 6—6 of Figure 4, looking in the direction of the arrows.

Figure 7 is a top plan view of the wedge elements.

Figure 8 is a side elevation of the wedge elements.

Referring to the drawing in detail, it will be noted that the holder in the form shown includes the usual shank 1 that has formed on one end thereof a substantially elongated head 2 in a manner so that the shank extends from one end of the head at an inclined angle with respect thereto, as best shown in Figure 1. The head includes an enlarged rounded upper portion 3, along the length thereof, and is provided with a cylindrical bore 4 extending longitudinally through the head at an inclined angle to its longitudinal axis. A cylindrical bore 5 is provided in the enlarged upper portion 3 and extends from adjacent one side of the head and through its opposite side, as well as intersects the top of the bore 4 slightly beyond the transverse center thereof for communication therewith, as best shown in Figure 4.

Mounted in the bore 4 are upper and lower wedge elements 6 and 7 respectively, the elements being of a length substantially coextensive with that of the bore 4, and the outer faces of the elements are rounded throughout their length to follow the curvature of the bore for fitting engagement therewith, but the inner tool receiving faces are square cornered to provide a rectangular socket for the cutting tool 8, the latter being of the usual elongated square cornered configuration and each end thereof is shaped to provide cutting means.

The wedge elements are of substantially L-shape in cross section, as best shown in Figure 5, and the flat edge portions 9 and 10 of the upper wedge element 6 are flat and disposed in confronting relation with the angularly arranged flat faces of the lower element 7. The upper wedge element is normally urged away from the lower element by wire springs 11 that extend along the length of the flat edge portions or faces 9 and 10, and are held in place by being provided with right angled bent ends 12 that are mounted in openings in the flat edge portions. The springs are inwardly bowed from adjacent the bent ends 12 thereof, toward said portions 9 and 10, and engage the flat faces of the lower element, as best shown in Figure 8. By the use of the springs, it will be obvious that the upper wedge element will be held in spaced relation relative to the lower element, when the upper element is in

released position, to allow ready insertion and removal of the tool with respect to said elements.

The wedge elements gradually increase in thickness from one end to the other and are arranged in the bore 4 so that the large end of the upper element and the small end of the lower element are disposed at the forward end of the head, as best shown in Figure 4, for the obvious purpose of setting up a wedging action against the tool, to hold the same in adjusted position against any possibility of casual removal or displacement.

The lower or stationary wedge element 7 is fixed within the bore 4 by a screw bolt 13 that has its head countersunk in the lower portion of the head 2 of the holder and the shank of the bolt is threaded into the lower portion of the element 7. However, the upper element 6 is movable longitudinally of the bore, and for that purpose the upper portion of the element 6 is grooved transversely to provide a row of teeth 14 having teeth 15 meshing therewith, as best shown in Figure 4. The teeth 15 are formed on and extend longitudinally of a cylindrical body 16 to provide a pinion, and the body is rotatably mounted in the bore 5, as well as of a length substantially coextensive with that of the bore 5, and has formed on and extending centrally from its outer end a square cornered lug 17 for receiving a wrench or other tool to bring about rotation of the pinion and consequently movement of the upper element 6 for cooperation with the lower element for securing and releasing the tool 8 relative to said elements, as will be apparent.

The body 16 is formed with a transversely disposed slot 18 for approximately half of its area, as best shown in Figure 5, and the slot is arranged adjacent the inner end of the body, for receiving the upper edge portion 19 of the lower wedge element 7 therein, so as to hold the pinion within its bore, against casual removal. The slot allows rotation of the pinion for a distance of approximately 180 degrees, and as the pinion is held within its bore, it acts to also hold the upper wedge element against casual removal from either end of the head, due to the engagement of the teeth 15 with the teeth 14, as will be apparent upon inspection of Figure 4.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:

1. A tool holder for lathes and the like, comprising an elongated head having a cylindrical longitudinal bore extending therethrough and a transverse cylindrical bore intersecting the longi-

tudinal bore, a pair of companion upper and lower wedge elements of substantially L-shape in cross section and having their outer faces rounded to fit the longitudinal bore and the inner faces square cornered to provide a socket to fit the tool, one of said elements being fixed in the longitudinal bore and the other element mounted for slidable movement therein, teeth formed on the movable element, a pinion including a body having teeth thereon and mounted in the transverse bore, the latter teeth meshing with the first teeth to actuate the movable element for securing and releasing the tool relative to said elements, a lug formed on the body and being square cornered to receive a tool for rotating said pinion, and said body having a slot therein receiving an edge portion of the fixed element for securing said pinion within its bore.

2. A tool holder for lathes and the like, comprising an elongated head having a cylindrical longitudinal bore extending therethrough and arranged at an inclined angle to the longitudinal axis thereof, said head having a transverse bore intersecting the longitudinal bore, a pair of companion upper and lower wedge elements of substantially L-shape in cross section and having their outer faces rounded to fit the longitudinal bore and their inner faces square cornered to provide a socket to fit the tool, the lower element being fixed in the longitudinal bore and the upper element being mounted for movement therein, teeth formed on the upper element, a pinion including a body mounted for rotation in the transverse bore, teeth formed on the body and meshing with the first teeth to actuate the upper element for securing and releasing the tool relative to said elements, a lug formed on the body and extending exteriorly of the head for receiving a tool for rotating the pinion, said body having a slot extending transversely thereof and receiving an edge portion of the lower element therein to hold said pinion in its bore, and springs between said elements for normally holding the upper element spaced relative to the lower element.

3. In a tool holder, a head having a through bore and a transverse bore intersecting the through bore, a pair of complementary wedge elements of approximately L-shape in cross section fitted in the through bore, means for releasably securing one of said elements in the bore and the other element being mounted for slidable movement therein, teeth formed on the movable element, a pinion mounted to turn in the transverse bore having teeth disposed to mesh with the teeth of the wedge element for selectively moving the latter, means on the pinion for turning the same, and co-acting means on the pinion and one of said wedge elements for releasably holding the pinion in the transverse bore.

SIEGFRIED SPECKERT.