

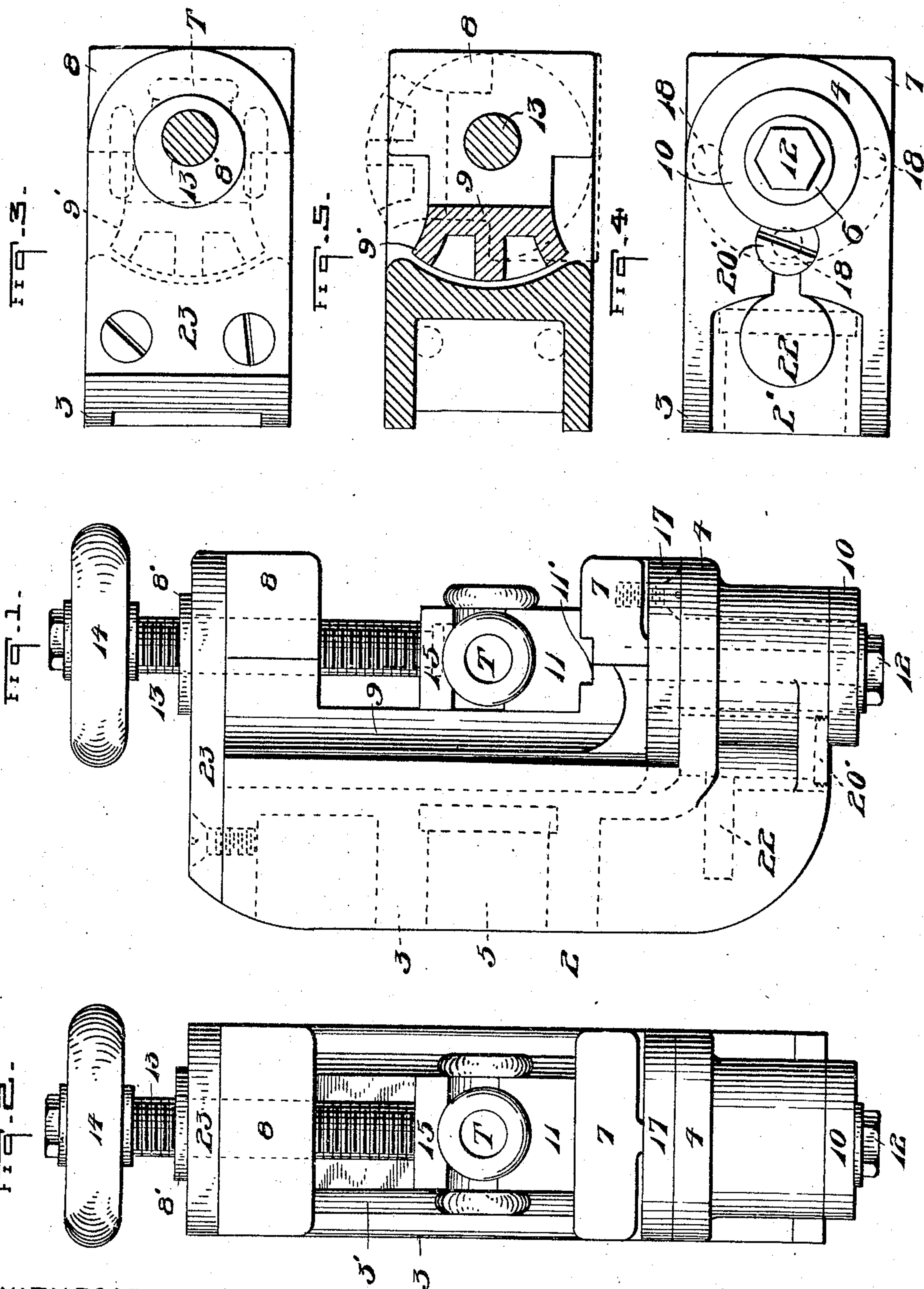
No. 785,547.

PATENTED MAR. 21, 1905.

I. B. GILBERT.  
REVOLVING OR THREE WAY CHUCK.

APPLICATION FILED MAR. 5, 1903.

2 SHEETS—SHEET 1.



WITNESSES:

*E. P. Hoffman,*  
*Winnie M. Myers.*

INVENTOR

*I. B. Gilbert,*  
*By J. W. Nesbit*  
*att'y.*

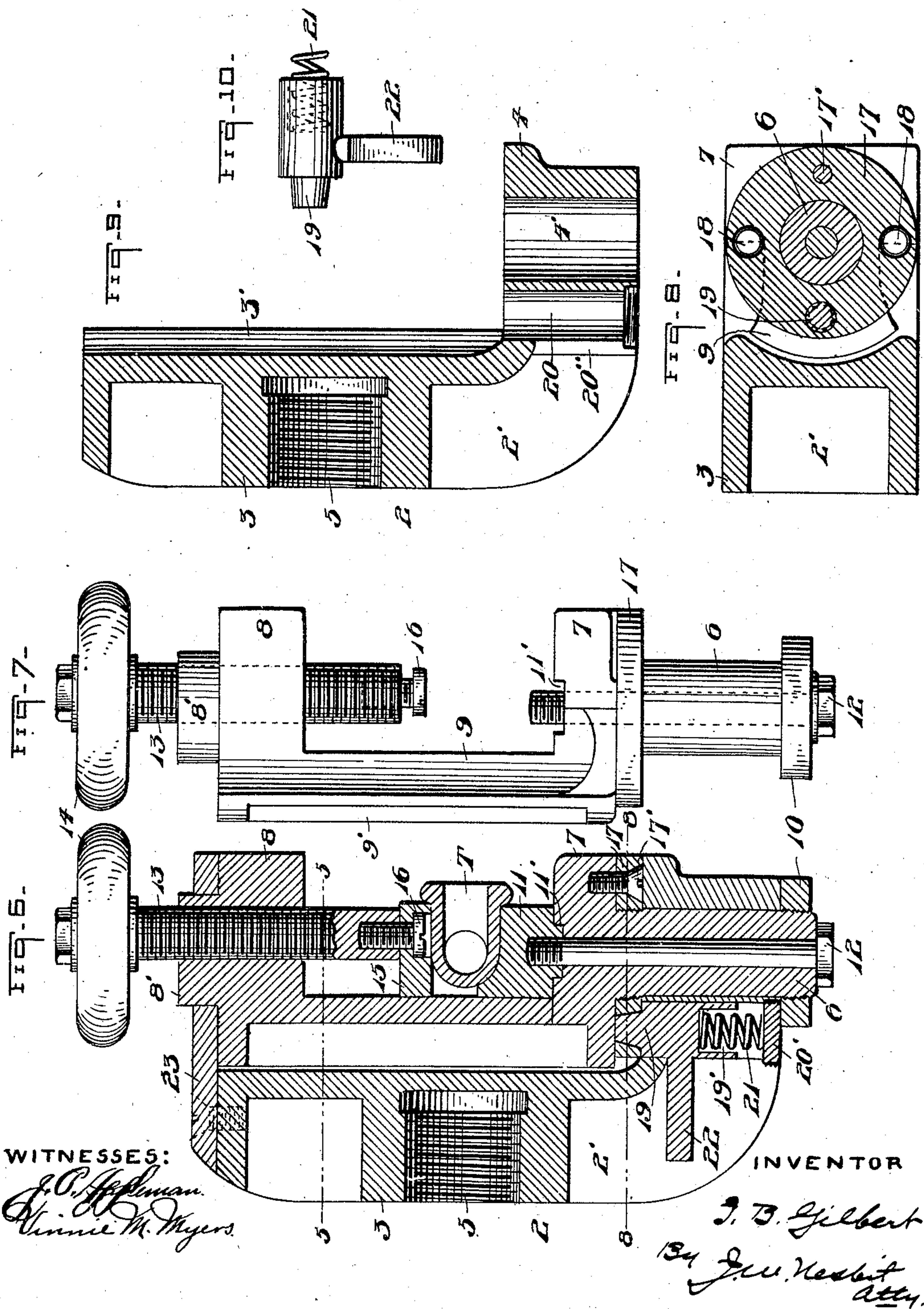
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# UNITED STATES PATENT OFFICE.

ISRAEL B. GILBERT, OF PITTSBURG, PENNSYLVANIA.

## REVOLVING OR THREE-WAY CHUCK.

SPECIFICATION forming part of Letters Patent No. 785,547, dated March 21, 1905.

Application filed March 5, 1903. Serial No. 146,314.

*To all whom it may concern:*

Be it known that I, ISRAEL B. GILBERT, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Lathe-Chucks, of which the following is a specification, reference being had therein to the accompanying drawings, wherein—

Figure 1 is a side elevation of a chuck constructed in accordance with my invention. Fig. 2 is a front edge view of the same. Figs. 3 and 4 are views of opposite ends of the chuck, the adjusting hand-wheel being removed from Fig. 3. Fig. 5 is a cross-sectional view on line 5 5 of Fig. 6, the cradle or work-holder being shown turned to one side in dotted lines to illustrate the limited movement thereof within the chuck-head. Fig. 6 is a longitudinal sectional view of the chuck. Fig. 7 is a side elevation of the work-holder or cradle removed from the chuck-head. Fig. 8 is a cross-sectional view on line 8 8 of Fig. 6. Fig. 9 is a longitudinal sectional view of the chuck-head. Fig. 10 is a detail view of the work-holder locking-bolt.

This invention has particular reference to a work-holder for lathes which is adjustable in a plane at right angles to the axis of the lathe-spindle, whereby different portions of the work may be presented to the lathe-tool without readjusting the work within the holder.

A further object is to provide adjustable clamping means at one side only of the work-holder in order to insure accurate centering of the work and to arrange this adjustable clamping means diametrically opposite the journal of the work-holder, so as to properly balance the chuck.

The invention is preferably embodied in a U-shaped work-holder which is adapted to oscillate within the chuck-head for the purpose of presenting different portions or surfaces of the work to the lathe-tool, and a further purpose is to so arrange the parts that the body of the work-holder is precluded from turning into the path of the lathe-tool.

Still a further object is to so position the work-clamping means with relation to the

body of the work-holder as to counterbalance the latter when it is turned to one side.

Referring to the drawings, the chuck-head 2 is of L form and consists of a long arm or body portion 3, having at one end the short arm 4, projecting therefrom at a right angle to its front face, the latter being curved in cross-section, as indicated at 3'. In the rear face of arm 3 is a threaded recess 5 for uniting with a lathe-spindle. (Not shown.) Short arm 4 is formed with the elongated journal-bearing 4', whose axis is at right angles to the axis of recess 5, and fitting this bearing is journal 6, projecting from one end of a U-shaped work-holder or cradle, this holder consisting of the opposite heads or cheek-plates 7 and 8 and the single head-connecting rib or side member 9, the latter being curved on its outer face complementary with curved face 3' of the chuck-head and on said face ribbed longitudinally, as shown at 9'. Journal 6 is held in its bearing by nut 10.

At the inner side of head 7 is the non-adjustable clamping-block 11, which is preferably rabbeted into the face of the head, as indicated at 11', the block being removably secured by screw-bolt 12, extending through journal 6. Head 8 of the work-holder is formed with a threaded passage, and adjustable therethrough is stem 13, having operating-wheel 14 at its outer end, and at the inner end of the stem is clamping-block 15, which is removably secured thereto by screw 16. The work T operated upon, here shown in the form of a T coupling or fitting, is clamped between blocks 11 and 15, the inner faces of the latter being curved or recessed to partially embrace and obtain a firm hold thereon. A different block 11 is provided for each form or size of fitting, as by means of this block the work is accurately centered in the holder, the clamping adjustment being accomplished entirely through or by means of stem 13. Various forms of block 15 are also provided for the several kinds of work.

By referring to Fig. 6 it will be seen that the axes of journal 6 and stem 13 are not in line, the latter being farther removed from rib 9 of the work-holder than the former.



This construction provides for balancing the work-holder or cradle within the chuck-head when it is turned with side member 9 out of line with the axis of recess 5.

5 A circular plate 17 embraces and has threaded engagement with the inner end of journal 6 and is fixed to head 7 by screw 17'. In the present embodiment of the invention this plate is formed with three inwardly-tapering open-  
10 ings 18, which are arranged in the radius of a circle concentric with journal 6, and adapted to engage these openings successively is bolt 19, which operates to hold and lock the work-holder in the several working positions. This  
15 bolt is operative in a recess 20, formed in the chuck-head, the outer end of the recess being closed by plug 20'. The outer end of bolt 19 is recessed or of barrel form, as shown at 19', to receive and confine spring 21, which bears  
20 against plug 20' and holds the bolt normally in inward or locking position. The rear face of the chuck-head is cored or recessed at 2', and projecting thereinto through slot 20'' from bolt 19 is handle 22, by means of  
25 which the bolt may be conveniently retracted whenever the work-holder is to be shifted, as when one face or portion of the fitting has been threaded, faced, or otherwise finished and it is desired to turn another por-  
30 tion thereof into the plane of the lathe-tool. At such time the lathe is stopped, and after retracting bolt 19 with one hand the operator may with his other hand turn the work-holder or cradle by means of wheel 14, and  
35 having released bolt 19 the latter will automatically enter the next depression 18, which comes in line therewith, and thus lock the holder in the advanced position. In the present arrangement only three positions are pro-  
40 vided for the work-holder, and as the latter is set at the first or initial position when starting on each three-way fitting it is only necessary to provide for moving the holder to two more positions, although it will be understood that  
45 this number may be increased or diminished without departing from the invention.

The projecting portions of heads or cheek-plates 7 and 8 are preferably of angular form and of such size as not to turn through or pass  
50 the curved face 3' of the chuck-head, and as the engagement of heads 7 and 8 with the sides of the chuck-head (shown in dotted lines in Fig. 5) prevents a complete rotation of the work-holder in either direction it is impossi-  
55 ble for the work-holder body or rib 9 to be turned into the path of the lathe-tool. This construction precludes the danger or accident or injury to either the tool or the holder, such as might follow a careless or accidental adjust-  
60 ment of the holder if the latter were capable of making a complete rotation.

At the end of arm 3 of the chuck-head opposite arm 4 I prefer to removably secure an outwardly - projecting plate 23, having an

opening to embrace boss 8' on the outer face 65 of head 8. The purpose of this plate is to guard against accident in case the cradle or work-holder should break, as in the absence thereof if a fracture should occur, say, in rib 9 of the cradle head 8 and the clamping mech- 70  
anism carried thereby would be thrown outward by the rapidly-revolving chuck, the danger in such case being much the same as that incident to the bursting of a fly-wheel; but with the plate in the position shown it would 75  
in such event operate to confine the broken parts until the lathe could be stopped.

It is characteristic of the invention that the adjustable work-clamping means, which preferably includes the permanently-mounted 80  
hand-wheel 14, is carried entirely by one side of the work-holder and is positioned diametrically opposite bearing-arm 4, journal 6, and the locking mechanism and operates to counterbalance the same, so that the chuck is 85  
properly balanced at all times. Hand-wheel 14 is permanently carried by clamping-stem 13 and is always in position for either clamping or releasing the work, and hence greatly facilitates the operation as compared with the 90  
usual practice of picking up and attaching a wrench and then removing the same for each adjustment.

While I have shown and described the preferred embodiment of the several features of 95  
my invention, it will be understood that they may be modified or varied in many ways without departing from the spirit thereof as defined by the appended claims.

I claim—

1. The combination of a chuck-head having a spindle connection, the head being heavier at one side of the connection than at the opposite side, the heavier side being formed with a journal - bearing, an angularly - adjustable 100  
work-holder carried by the head and having a journal which fits said bearing, the end of the work-holder opposite said journal extending toward the lighter side of the chuck-head, and adjustable work-clamping means carried by 105  
the end of the work-holder thus extended and operating to counterbalance the heavier side of the chuck-head. 110

2. The combination of a chuck-head having a spindle connection, a U-shaped work-holder 115  
angularly adjustable in the head in a plane at right angles to the spindle - axis, and stop means to prevent the body of the holder from turning into the path of the lathe-tool.

3. The combination of a chuck-head having 120  
a spindle connection, a U-shaped work-holder rotatably adjustable in the head, the axis of rotation being at right angles to the spindle-axis, and work-clamping means having position in the work-holder eccentric to the holder- 125  
axis and diametrically opposite the side member 9 of the holder for the purpose of counterbalancing the latter.

4. The combination of a chuck-head having  
a spindle connection, the head being heavier  
at one side of said connection than at the op-  
posite side and at the heavier side formed with  
5 a journal-bearing, a U-shaped work-holder, a  
journal projecting from one end of the holder  
and fitting said bearing, a work-clamping  
stem adjustable through the opposite end of  
the holder, and an operating-handle carried by

the outer end of the stem and forming a por- 10  
tion of the counterbalance for the heavier side  
of the chuck-head.

In testimony whereof I affix my signature in  
the presence of two witnesses.

ISRAEL B. GILBERT.

Witnesses:

A. M. WILSON,  
E. E. POTTER.