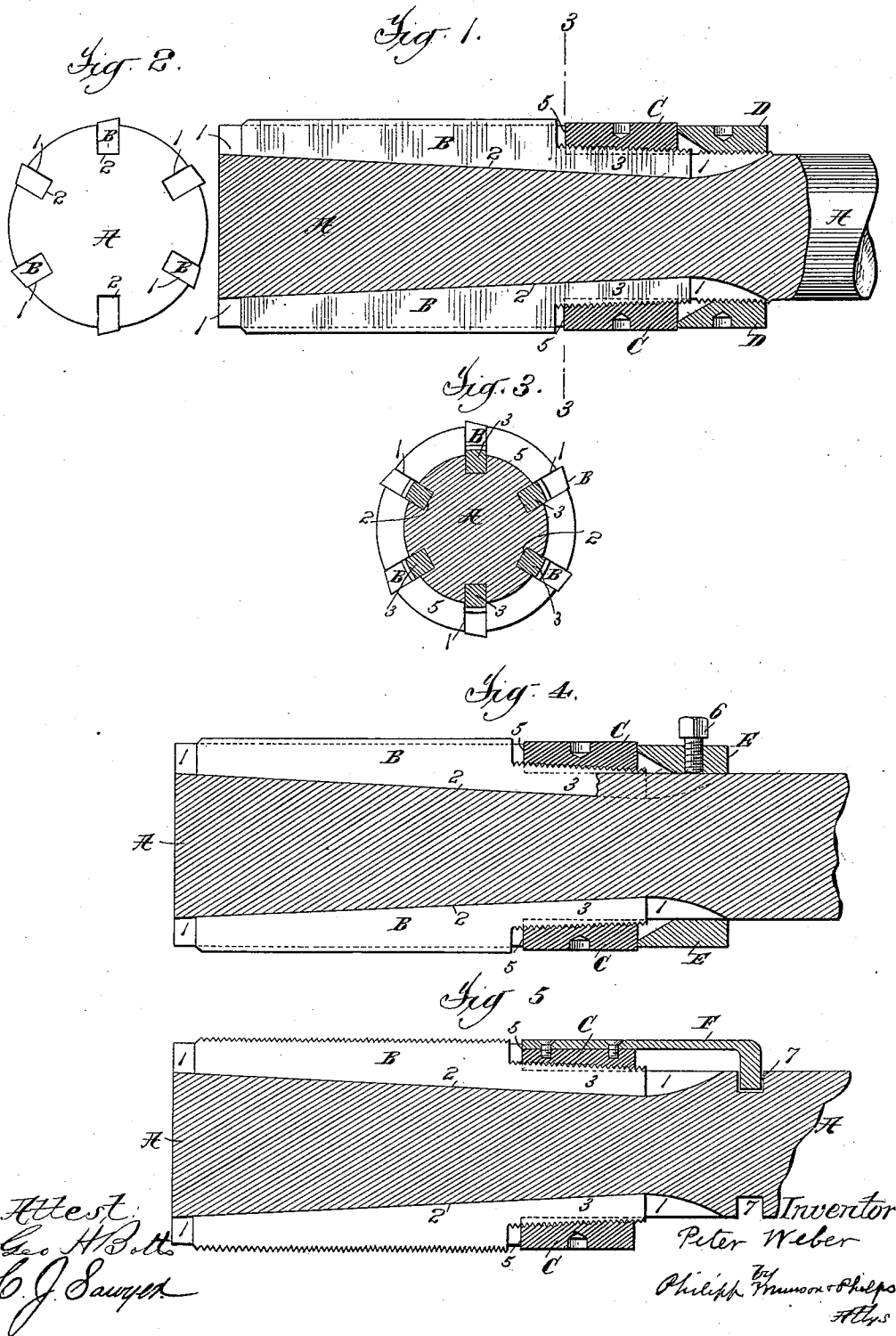


(No Model.)

P. WEBER.
ADJUSTABLE REAMER.

No. 470,962.

Patented Mar. 15, 1892.



UNITED STATES PATENT OFFICE.

PETER WEBER, OF SCHENECTADY, NEW YORK.

ADJUSTABLE REAMER.

SPECIFICATION forming part of Letters Patent No. 470,962, dated March 15, 1892.

Application filed December 29, 1891. Serial No. 416,434. (No model.)

To all whom it may concern:

Be it known that I, PETER WEBER, a citizen of the United States, residing at Schenectady, county of Schenectady, and State of New York, have invented certain new and useful Improvements in Adjustable Reamers, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

10 The object of the present invention is to provide an improved adjustable reamer or tap of that class employing a body or holder having inclined cutter-seats and cutters with similarly-inclined bases, so that the size of the
15 reamer or tap may be adjusted by moving the cutters up or down the incline; and my invention consists, broadly, in the combination, with such a body and cutters, of an adjusting-nut screw-threaded without the cutters
20 and moving the latter longitudinally of the body by its rotation, while itself held from longitudinal movement, and in certain specific constructions embodying my invention in its preferred form, all of which will be particularly described in the following specification,
25 and pointed out in the claims.

In the accompanying drawings, forming a part of this specification, and in which I have shown a construction embodying my invention in its preferred form and certain modifications thereof, Figure 1 is a longitudinal central section of my improved reamer in its preferred form. Fig. 2 is an end view of the same. Fig. 3 is a cross-section on the line 3
35 of Fig. 1. Figs. 4 and 5 are views similar to Fig. 1, showing slightly-modified constructions, Fig. 5 showing my invention as applied to a tap.

40 In the drawings, A is the body of the reamer, provided with inclined cutter-seats formed by grooves 1, extending longitudinally of the holder, as usual, the construction being shown as employing six cutters, although it will be understood that any other number may be
45 used. In the grooves 1 slide the cutters B, the bases 2 of which, as usual, are inclined at the same angle as the cutter-seats. These cutters are provided, also, with shanks 3, preferably of less height than the cutters, so as
50 to reduce the size of the reamer as far as possible, and the outer surfaces of these shanks

are parallel with the bases 2 and screw-threaded on their outer surfaces.

Surrounding the shanks 3 is a nut C, which is provided with an internal screw-thread parallel with and engaging the screw-threaded surfaces of the shanks 3, so that by the rotation of the nut C the cutters are moved longitudinally of the body. The nut C may be held from movement longitudinally of the body during its rotation in any suitable manner. In the simple construction shown in Fig. 1 the body is provided with a shoulder 5, which serves to limit the movement of the nut in one direction, and a set-nut D, screwed onto a reduced
65 portion of the body, holds the nut against movement in the opposite direction. By unscrewing the nut D and holding the cutters B the nut C may be unscrewed from the shanks of the cutters and removed by slipping it over the reduced inner end of the body.

It is evident that other means may readily be devised for holding the nut C in position during rotation. Thus in Fig. 4 I have shown a construction similar to that described, except that a sleeve E, secured by a set-screw 6,
75 is substituted for the set-nut D. In Fig. 5 a similar construction is shown, except that the nut is held in position by an arm F, removably secured thereto and provided with a stud 80 running in a groove 7 inside the line of movement of the cutters. By removing the arm F the adjusting-nut C may be readily removed, as before described.

The constructions shown are applicable 85 also to other tools than reamers. Thus an adjustable tap may readily be made by threading the cutters B, as shown in Fig. 5.

What I claim is—

1. The combination, with a body having inclined cutter-seats and cutters having correspondingly-inclined bases and screw-threaded portions, of a nut screw-threaded on the threaded portions of the cutters and held from movement longitudinally of the body, while
95 free to rotate for adjusting the cutters, substantially as described.

2. The combination, with a body having inclined cutter-seats and cutters having correspondingly-inclined bases and screw-threaded portions parallel therewith, of a nut having its screw-threaded surface parallel with and

engaging the threaded portions of the cutters and held from movement longitudinally of the body, while free to rotate for adjusting the cutters, substantially as described.

- 5 3. The combination, with the body or holder A, having grooves 1, forming inclined cutter-seats, of cutters B, having inclined bases 2, and shanks 3, having screw-threaded portions parallel therewith, nut C, having an internal
10 thread parallel with and engaging the threaded shanks, and devices for holding the nut

against movement longitudinally of the body, while permitting it to rotate for adjusting the cutters, substantially as described.

In testimony whereof I have hereunto set 15 my hand in the presence of two subscribing witnesses.

PETER WEBER.

Witnesses:

THEO. E. BUTTON,
GEO. C. REILLEY.