

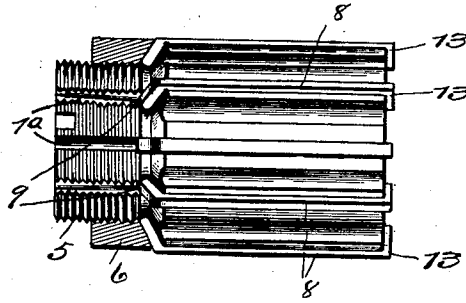
No. 826,109.

PATENTED JULY 17, 1906.

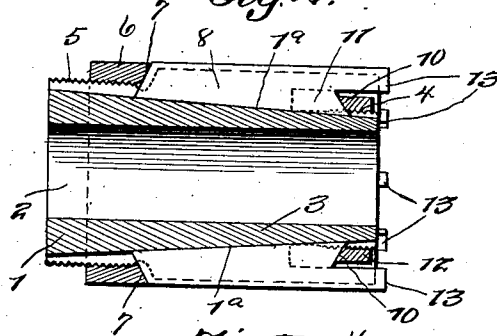
F. B. McCROSKEY.  
REAMER.

APPLICATION FILED NOV. 17, 1904.

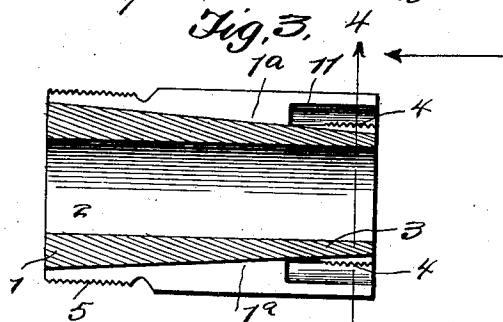
*Fig. 1.*



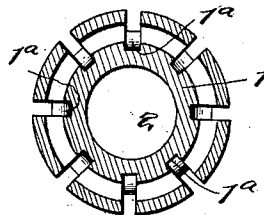
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses

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# UNITED STATES PATENT OFFICE.

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BY MESNE ASSIGNMENTS, TO W. D. HAMAKER, OF MEADVILLE, PENNSYLVANIA.

## REAMER.

No. 826,109.

Specification of Letters Patent.

Patented July 17, 1906.

Application filed November 17, 1904. Serial No. 233,195.

*To all whom it may concern:*

Be it known that I, FREDERICK B. McCROSKY, a citizen of the United States of America, and a resident of Meadville, in the  
5 county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Reamers, of which the following is a specification.

This invention relates to certain new and  
10 useful improvements in reamers of that class known as the "Universal" adjustable reamer; and it has for its object, among others, to provide an improved construction of reamer of this character in which the collar shall be  
15 so situated as not to interfere with the cuttings freely working away from the cutting edges.

It has for a further object to provide a reamer in which the blades shall be extended  
20 beyond the body of the reamer, thus permitting the reaming of the holes to the bottom of the same and using the ends of the blades for cutting the shoulders.

A further object is to provide for the side  
25 supports of the blades to the end of the reamer.

Still a further object is to dispense with the open space between the end of the shoulder and the collar, thus obviating any space to  
30 gather and retain the cuttings.

The invention has for a further object to so improve the construction as to overcome the objections to prior types of reamers of this character.

35 Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claim.

The invention is clearly illustrated in the  
40 accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation of my improved reamer. Fig. 2 is a substantially central longitudinal section through the same and showing  
45 the blades in elevation or full lines. Fig. 3 is a similar view with the blades removed. Fig. 4 is a cross-section on the line 4 4 of Fig. 3.

Like numerals of reference indicate like  
50 parts throughout the several views.

Referring now to the details of the draw-

ings, 1 designates the body of the reamer having the axial-bore 2 and the tapered portion 3, the exterior threads 4 at the smaller end of the taper, and the screw-threads 5 at the opposite end. The body portion is also provided with longitudinal grooves 1<sup>a</sup>, having inclined  
55 bottoms for the reception of the blades.

6 is the rear collar adjustable on the threaded portion 5 and having its inner face  
60 preferably tapered, as shown at 7.

8 represents the blades, of which there may be any desired number, in this instance being so as to have their rear face beveled or tapered, as shown at 9, matching the taper of  
65 the rear collar 6 and their forward ends shouldered, as shown at 10. When the blades are in position, an annular recess 11 is provided between the adjacent faces of the blades and the threaded portion 4 of the  
70 body, and in this recess is disposed the front collar 12, which is adjustable upon the threaded portion 4, as clearly illustrated in Fig. 2.

Upon reference to Figs. 1 and 2 it will be  
75 noted that the blades are so shaped and proportioned that they overhang the collar 12 and extend slightly beyond the same and beyond the end of the body portion, as shown  
80 at 13.

It is to be noted that the front collar 12 is so situated between the blades and the body portion that it does not interfere with the cuttings freely working away from the cutting edges.  
85

By the extension of the ends of the blades beyond the body portion of the reamer and beyond the front collar 1 I provide for the reaming of holes to the bottom of the same and for using the ends of the blades for cutting  
90 shoulders where desired. It is also to be noted that the blades have side supports to the extreme end of the reamer, and the front collar closes the space between the ends of the shoulders and said collar, so that no space  
95 is provided for gathering and retaining the cuttings.

What is claimed as new is—

A shell-reamer comprising a body portion having axial bore and exterior threads at one  
100 end, and at the other end provided with an annular concentric socket with exterior

threads on its inner wall, said body portion  
being provided with longitudinal grooves  
having inclined bottoms, blades fitted in said  
grooves and having cut-away portions cor-  
5 responding to said socket, an abutment for  
the rear ends of the blades screwed upon the  
exterior threads at the rear end of said body  
portion, and a collar threaded directly upon

the threaded wall of said socket and engaging  
the cut-away portions of the blades. 10

Signed by me at Meadville, Pennsylvania,  
this 15th day of November, 1904.

FRED. B. McCROSKY.

Witnesses:

ELIZABETH E. ROSE,

OTTO A. STOLZ.