

No. 886,830.

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C. L. MARTIN.
REAMER.

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Fig. 1

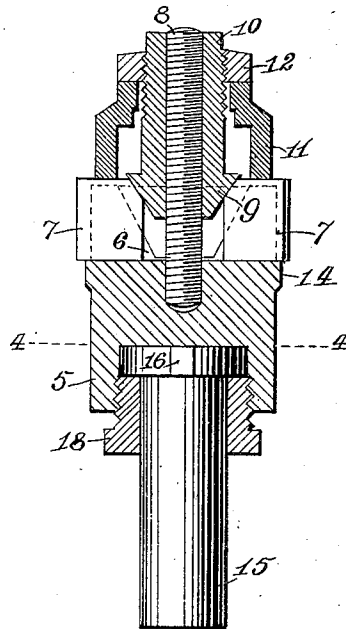


Fig. 2

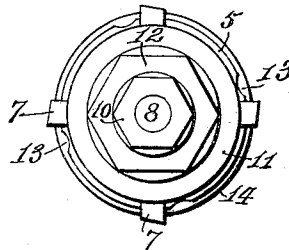


Fig. 3

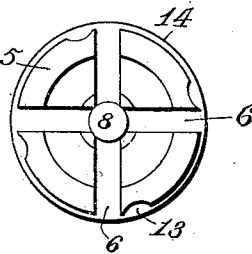
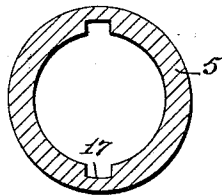


Fig. 4



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REAMER.

No. 886,830.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES L. MARTIN, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented a new and useful Improvement in Reamers, of which the following is a specification.

This invention relates to reamers and, while capable of general application, it is designed with special reference to flue-hole reamers.

The principal object of the structure embodying the invention is to provide a reamer in which several renewable adjustable cutters may be employed, in which the renewal and adjustment may be readily effected and in which the adjustment for all the cutters may be simultaneously effected and to any desired degree.

Another object of the invention is to so construct all the parts that anyone of them may be readily replaced by a new one and also to make the shank of the tool removable so that new shanks or shanks of various forms may be substituted at will.

With these objects in view, the invention consists in the construction and combination of parts substantially as hereinafter described and claimed.

In the accompanying drawing, which forms a part of this specification, Figure 1 represents the improved reamer in axial section, the removable shank being shown in full; Fig. 2 represents a plan view; Fig. 3 a plan of the head showing the radial cutter seats; and Fig. 4 represents a transverse section, taken through the head in the plane indicated by the line 4—4, Fig. 1, to show the recess for the reception of the head of the removable shank.

The head of the reamer, indicated by 5, is provided with transverse slots 6 forming seats for the cutters 7. These slots are preferably arranged radially and may be of any desired numbers, four being shown. Seated axially in the head is a screw stud 8 and longitudinally movable along this is an internally screw-threaded adjusting cone 9 having a stem exteriorly screw-threaded and provided at 10 with a polygonal end for the application of a wrench. The adjusting cone 9 bears against the inner oblique corners of the cutters as seen in Fig. 1. The cutters are a little wider than the slots are deep and upon their upper edges rests the

collar 11. Upon this collar rests a set-nut 12, by which the collar is tightened upon the cutters and by which the cone 9 is firmly held in place after the cutters have been adjusted as desired. The head 5 is conically countersunk about the stud 8 for the adjusting cone 9, and recesses, as at 13, are formed in front of the cutters to prevent chips from sticking between the reamer and the metal being cut.

In replacing or adjusting the cutters, the nut 12 is loosened and the cone 9 turned up or down the stud 8 to give to the cutters the desired projection beyond the guide shoulder 14, then nut 12 is turned down thereby forcing collar 11 down upon the cutters to hold them in place against the cone 9, which is also, by the same act, tightened in place upon stud 8 and resists the inward thrust of the cutter when at work.

The construction preferred for removably attaching the shank to the head consists in a shank 15 having a head on which are formed one or more projections 16, located in seats 17 made in the socket shaped in the head of the reamer to receive the head of the shank; and of an annular nut 18 seated in said socket for holding the shank in place. Should the shank be damaged or should it become necessary to substitute one of different form, the nut 18 may be unscrewed, placed upon the substitute shank and again inserted in the head of the reamer.

Obviously, in a reamer of the structure shown and described, new cutters may be readily substituted for old ones and cutters of different length and cutters having differently shaped cutting edges may be readily substituted for such as shown.

The invention claimed is:—

1. In a reamer, the combination with a radially slotted head, of cutters fitted to the slots of said head, a screw stud fitted axially in said head, an adjusting device mounted on said stud and movable longitudinally thereof and bearing against the inner ends of the cutters and adapted to change their radial extension in any desired degree, and clamping means for engaging both said adjusting device and the cutters, whereby all said parts may be simultaneously fixed in place relatively to one another.

2. In a reamer, the combination with a radially slotted head, of cutters fitted to the slots of said head, a screw stud fixed axially in

said head, an adjusting cone for the cutters provided with a stem and longitudinally movable on said stud, a collar about said cone and resting upon the cutters, and a set-
5 nut on the stem of the cone for fixing both the collar and the cone in place.

In testimony whereof I have signed my

name to this specification in the presence of two subscribing witnesses.

CHARLES L. MARTIN

Witnesses:

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