W. Burlingame,

Reamer,

No. 60,683, Patented Jan. 1, 1867.

Fig. 1

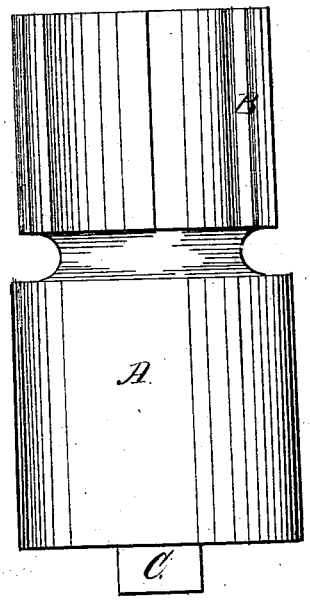
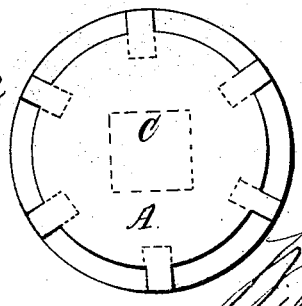


Fig. 2.



Witnesses;

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WILLIAM BURLINGAME, OF EXETER, NEW HAMPSHIRE.

Letters Patent No. 60,683, *dated January* 1, 1867.

IMPROVEMENT IN MAKING REAMERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM BURLINGAME, of Exeter, in the county of Rockingham, and Stste of New Hampshire, have invented a new and improved Reamer; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The nature of my invention consists in uniting or casting steel cutters with the body of a reamer, so that a large quantity of steel may be saved, also, large size taps may be cast in with the threads of steel upon the outside. My process of casting reamers: In making the pattern of the size desired, I groove out of the body of the reamer for the cutters, and insert in the pattern the pieces of steel of the desired size and numbers, and in drawing the pattern from the sand, the steel is left and remains in the mould. Then I pour the iron into the mould, letting it flow through the mould a sufficient length of time to heat the steel, so that it will unite with the iron, at which time the flow is stopped, and, when cold, the steel is sufficiently annealed so that it may be readily turned in the lathe to any size desired. I usually form the cutters so that they will be dove-tailing, then any liability to spring in tempering is prevented, and may be ground off as desired. I also insert in the mould a piece of square steel at the end for the wrench, united with the iron in the same manner as the cutters. The advantages of my invention will be readily seen, as the expense is so trifling compared with making large reamers, when composed entirely of steel. These reamers answer all the purposes as though made entirely of steel.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 represents a top plan view of my improved reamer.

Figure 2 is a transverse section of the same.

Letters of like name and kind refer to like parts in each of the figures.

A, in fig. 1, represents the body of my improved reamer, which is made of cast iron, into which are cast steel cutters, as seen at B. The pattern of the mould is grooved out, as seen in the transverse section, (fig. 2,) and when the pattern is drawn from the sand the cutters are placed in the mould; the flask is then closed and the iron is poured and allowed to flow through the mould until the steel attains a degree of heat sufficient to unite with the melted iron, when the flow is cut off and the whole is allowed to cool; the process of which anneals the steel so that it may be fitted up in the lathe as desired. C represents a shank of steel, which is cast in the body of the reamer, the same as the cutters as before described. The shank C is for the purpose of holding the reamer in the chuck of the lathe or upon which a wrench may be used. It will be understood that any desired numbers of these cutters may be cast in the body of the reamer.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The reamer consisting of the cast-iron body A, steel cutters B, and steel shank C, when constructed as herein shown and described, as and for the purpose specified.

WILLIAM BURLINGAME.

Witnesses:

ALVA WOOD,

EZRA S. DURGIN.