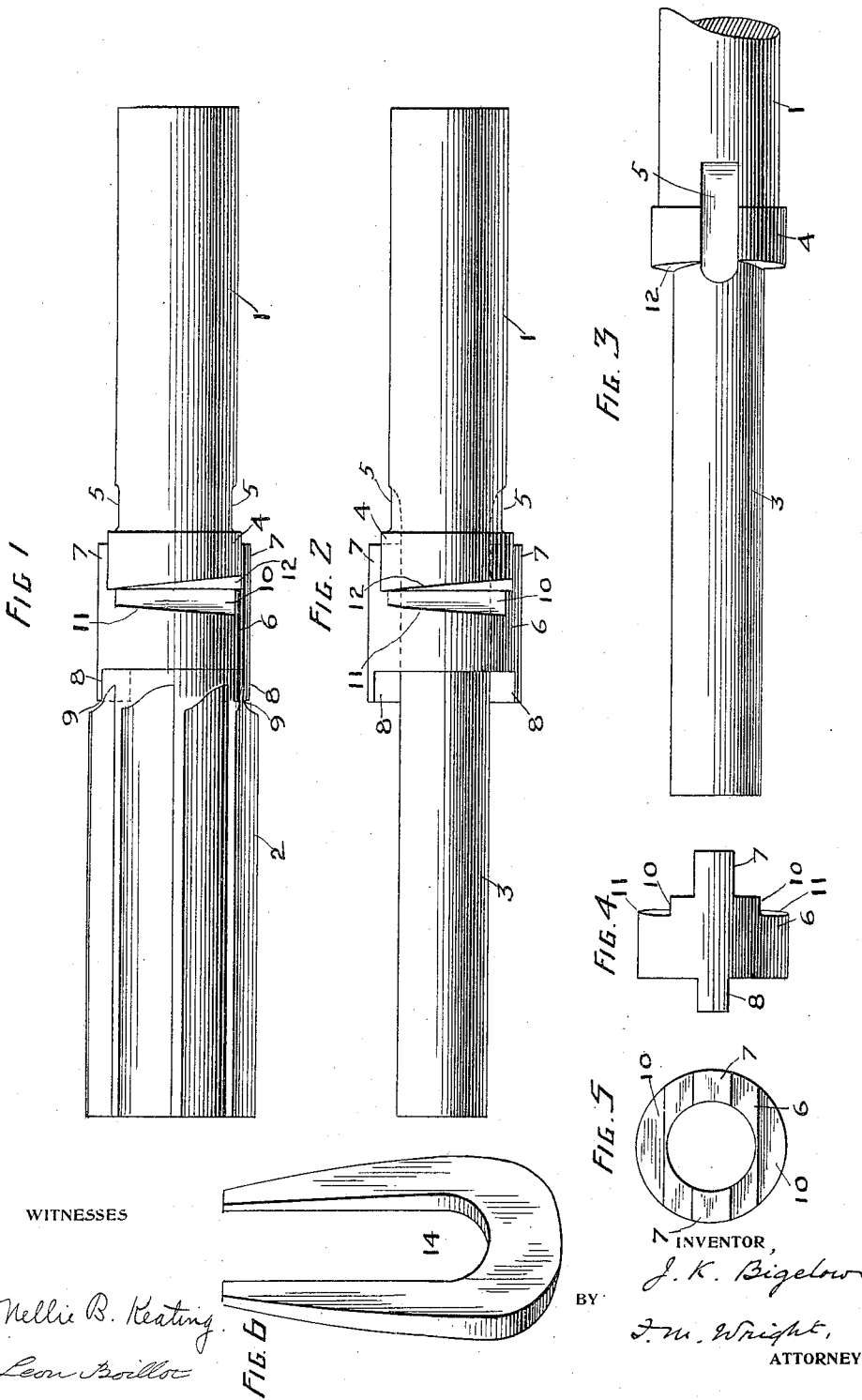


J. K. BIGELOW.
 REAMER HOLDER.
 APPLICATION FILED AUG. 31, 1908.

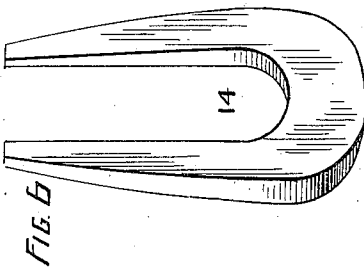
1,045,935.

Patented Dec. 3, 1912.



WITNESSES

Nellie B. Keating.
 Leon Boillot



BY

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UNITED STATES PATENT OFFICE.

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REAMER-HOLDER.

1,045,935.

Specification of Letters Patent.

Patented Dec. 3, 1912.

Application filed August 31, 1908. Serial No. 450,983.

To all whom it may concern:

Be it known that I, JOHN K. BIGELOW, a citizen of the United States, residing at Elmhurst, in the county of Alameda and State of California, have invented new and useful Improvements in Reamer-Holders, of which the following is a specification.

The object of the present invention is to provide an improved form of reamer holder. With reamer holders as at present constructed, considerable difficulty is often experienced in removing the reamer from the holder. The rear end of the reamer is sometimes jammed so tightly up against the front end of the holder, that it is difficult to separate the two, either by the insertion of a wedge-like device of some character, or in any other way.

One object of the present invention is to provide a reamer holder which will avoid the above difficulty.

A further object is to provide a construction which will reduce the liability of breakage of the lug of the holder.

In the accompanying drawing, Figure 1 is a side view of my improved holder, with a reamer thereon; Fig. 2 is a similar view showing the reamer detached; Fig. 3 is a broken side view of the holder, the sleeve being detached; Fig. 4 is a side view of the sleeve; Fig. 5 is an end view of the sleeve; Fig. 6 is a perspective view of a tool used for shifting the sleeve.

Referring to the drawing, my improved reamer holder comprises a rear cylindrical stem 1 and a front cylindrical spindle 3 reduced in diameter and adapted to enter the reamer 2. Said stem 1 is formed at its front end with a collar-shaped abutment or head 4, having two longitudinal grooves 5 extending through said abutment and into the front part of the stem 1 behind said abutment. Upon said spindle 3 slides a sleeve 6 the rear of which is adapted to abut against the front end of the head 4, while rearwardly extending lugs 7 on said sleeve can enter the recesses 5 in said head. Diametrically opposite lugs 8 extending forwardly from said sleeve can enter the usual recesses 9 in the rear end of the reamer, said lugs 8 thus taking the place of the lugs formed upon the usual reamer holder. The rear end of the sleeve is cut away at the sides, as shown at 10, said cuts being formed with oblique front shoulders 11, and the head 4

of the holder is likewise cut away to form oblique shoulders 12, said shoulders 11, 12, converging toward each other, so that by inserting the end of an implement of suitable thickness in either of the wedge-shaped spaces between the shoulders at the wide end thereof, and forcing it inward toward the narrow end, said sleeve can be forced from the head of the holder by the wedging action of said implement. A convenient form for such a tool is a yoke-shaped one, as shown at 14 in Fig. 6, each side of said yoke tapering in thickness.

The mode of using the holder will be understood from the foregoing description. The sleeve 6 having been placed in position with the lugs 7 entering the grooves 5, the reamer is then placed in position so that the lugs 8 enter the recesses 9 in the reamer. When it is desired to disconnect the reamer, the tool 14 or any suitable tool is wedged between the oblique shoulders 11, 12, forcing the sleeve and reamer outward, so that the reamer can be readily detached from the holder.

The following is a further advantage of my improved holder. With the ordinary holder, it sometimes happens that the reamer is not pushed fully back against the holder, so that only the point of the lug enters the recess in the reamer. In such case, the point of the lug of the holder is liable to be broken off by the strain of the work. With the present holder, should the reamer not be pushed fully back, the sleeve can be wedged forward, so that the whole of the lugs 8 of the sleeve enter the recesses in the reamer. At the same time the lugs 5 can be made sufficiently wide and strong to avoid any danger of their breaking.

While in the preferred form of my invention I use both the shoulders 11, 12, yet this construction is not absolutely essential to the invention, as either pair of shoulders can be used alone, and if the shoulders 12 alone be used, the sleeve may be dispensed with. Or in the latter case, the shoulders 12 need not even be made oblique, but the head of the holder can be so formed with reference to the lugs, that the end of the reamer cannot come flush against the face of said head, so that, even if not beveled, a wedge-shaped instrument can be inserted to drive the reamer from off the stem.

I am aware that it has been proposed to

separate a reamer from its holder by wedging off the same at one side only of the holder, and I do not claim broadly the use of a wedge-shaped key for wedging a reamer from its holder. Such a device, when applied on one side only, is of little practical value, as, if the reamer fits very tightly on its holder, so as to require being wedged off by means of a key, then the pressure used to separate the reamer from the holder, if applied at one side only, and the resistance offered by the tight fit of the reamer on the holder, will cause the reamer to bind on the holder, and will either, in case of an arbor of large diameter, render it extremely difficult to remove the reamer from the holder, or, if the arbor be of small diameter the result will often be to bend the arbor of the holder, and render it useless, as it cannot be afterward accurately straightened. My present invention therefore is confined to a construction whereby the pressure of the key must be applied equally on both sides of the holder, so that there is no tendency to bind, or to bend the arbor of the holder, however thin.

I claim:—

1. A reamer holder having a movable sleeve

thereon, said holder and sleeve having co-engaging parts to prevent the sleeve turning upon the holder when in position, said sleeve having straight lugs adapted to enter correspondingly shaped recesses in a reamer, one of said elements being cut away to form a shoulder, and the other having an abutment between which and said shoulder a tool can be moved to separate said elements, substantially as described.

2. A reamer holder comprising a stem having an enlarged collar-shaped abutment divided by diametrically opposite grooves, and having a spindle, a sleeve on said spindle, said sleeve having rearwardly extending lugs adapted to enter said grooves and forwardly extending lugs adapted to enter recesses in the reamer, and having at its sides, between said rearwardly extending lugs, cut away portions with shoulders, substantially as described.

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

JOHN K. BIGELOW.

Witnesses:

FRANCIS M. WRIGHT,
D. B. RICHARDS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."