

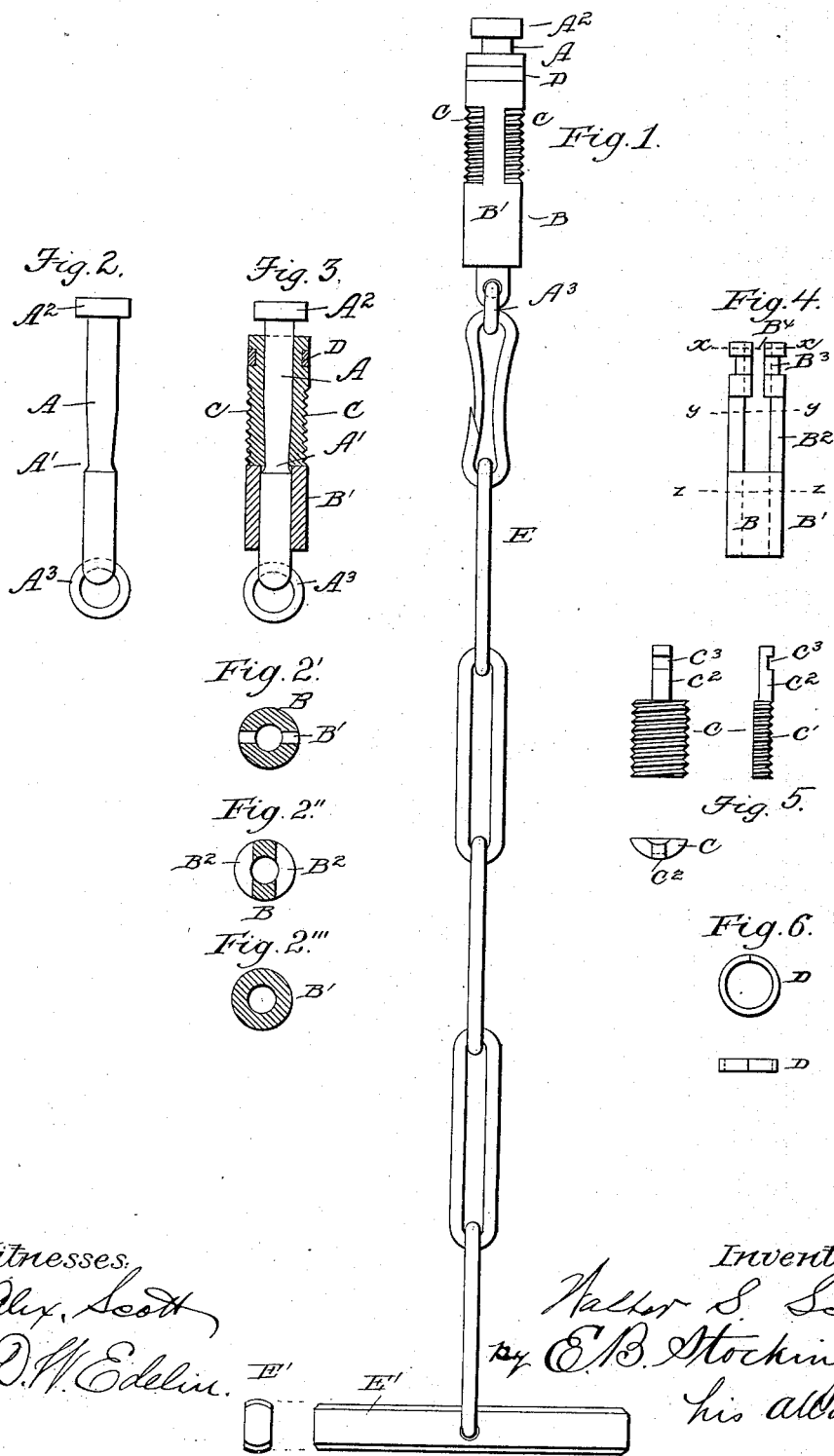
(No Model.)

W. S. SCOTT.

PIPE, TUBE, OR SHELL EXTRACTOR.

No. 384,791.

Patented June 19, 1888.



Witnesses.

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UNITED STATES PATENT OFFICE.

WALTER S. SCOTT, OF FORT MEADE, DAKOTA TERRITORY.

PIPE, TUBE, OR SHELL EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 384,791, dated June 19, 1888.

Application filed August 30, 1887. Serial No. 248,324. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. SCOTT, a citizen of the United States, residing at Fort Meade, in the county of Lawrence and Territory of Dakota, have invented a new and useful Pipe, Tube, or Shell Extractor, of which the following is a specification.

The object of this invention is to provide a cheap and simple device adapted to be introduced into the bore of a pipe, tube, or gun-barrel for the purpose of extracting an inclosed smaller tube or headless shell upon which no extraneous hold can be obtained.

Other objects and advantages of the invention will be hereinafter described, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is an elevation of an extractor constructed in accordance with my invention. Fig. 2 is a detail in elevation of the expanding-spindle. Fig. 3 is a vertical section of the expanding-spindle having the extractor mounted in position thereon. Figs. 2', 2'', and 2''' are transverse sections of the extractor-cylinder, taken on the lines *x*, *y*, and *z*, respectively, of Fig. 4. Fig. 3 is an elevation of the extractor-cylinder. Fig. 4 is a side elevation of the extractor-cylinder. Fig. 5 represents details in side elevation, showing the extractors. Fig. 6 is a plan and side elevation of the assembling-ring for connecting the extractors in position upon the extractor-cylinder.

Like letters indicate like parts in all the figures.

A represents the spindle, having near its center a contracted neck, A', and at its top a head, A². The lower end of the spindle is perforated and provided with a ring, A³.

B represents the extractor-cylinder, and it consists of a cylindrical body portion, B', internally bored and adapted to receive and form a sliding fit with the expanding-spindle A.

The extractor-cylinder B is oppositely and transversely recessed or cut away, as at B², and is vertically slotted, as at B⁴, an annular groove, B³, being formed in the cylinder near its top and at each side of the slot.

C represents the extractors, two of which are employed—one mounted at each side of the cylinder B and seated in recess B² thereof.

The extractor C is formed with an exterior

milled or threaded portion, C', and a reduced projecting neck portion, C², which, when the extractors are in position upon the cylinder B, project into the vertical slot B⁴ at each side of the cylinder. A notch or groove, C³, is formed in and near the top of the neck of the extractors, which groove or notch registers with the groove B³ in the cylinder.

The inner faces (by which is meant those adjacent to each other) of the extractors C may be curved, as shown in Fig. 3, to form a contracted passage at their lower ends.

The extractors having been placed in position upon the extractor-cylinder B, in which is located the expanding-spindle A, a split binding-ring, D, is placed in position in the annular groove B³ and corresponding notches, C³. As thus far described, it will be seen that the extractors C are secured at their upper ends by means of the ring D, and that their lower ends may be sprung outwardly to grip any obstacle, such as a headless shell in a gun-barrel or a telescoped pipe or tube. This expansion is accomplished by means of forcing the expanding-spindle A down within the cylinder B'. The enlarged upper portion of said spindle coming in contact with the inner faces of extractors spreads the same, whereby a hold is taken, as described.

If desired, a chain, as E, having a cross-bar, E', at its end, may be connected to the ring A³ and serve as the means for drawing the spindle within the tube, or a rod may be inserted in rear of said tube and adapted to bear upon the head A² thereof, and thus force the same within the cylinder, or the two may be used in conjunction.

Having described my invention and its operation, what I claim is—

1. In an extractor of the class described, the combination of an extractor-cylinder recessed at its sides and provided with independent extractors fitted therein, with a spreader mounted between the extractors and adapted to operate the latter, substantially as specified.

2. In an extractor of the class described, the combination, with a hollow extractor-cylinder having recesses at its sides and provided with independent extractors fitted and seated in said recesses, of a spreader having a wedge shape mounted in the cylinder and between the ex-

tractors and adapted to spread the latter, substantially as specified.

3. In an extractor of the class described, the combination of an extractor-cylinder having a
5 central bore, milled or threaded extractors mounted in recesses formed in said cylinder, with a spreader adapted to fit said bore and spread the extractors, substantially as specified.

10 4. In an extractor of the class described, the combination of an extractor-cylinder having opposite recesses, an annular groove, and a central bore, with threaded extractors mounted in said recesses and grooved to register with
15 the annular groove of the cylinder, a binding or assembling ring seated in the grooves, and a wedge-shaped spreader mounted in the bore, substantially as specified.

5. The cylinder B, having the extractors C mounted thereon, in combination with the
20 spreader A, having the reduced portion A', head A², and ring A³, and the chain E, connected to said ring, substantially as specified.

6. The bored cylinder B, having the recesses B² B⁴ and groove B³, in combination with the
25 extractors C, mounted in the recesses B² and having the necks C², extending into the recesses B⁴ of the cylinder, and having the grooves C³, registering with those in the cylinder, and the binding ring D, mounted in the grooves of
30 the cylinders and extractors, substantially as specified.

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Witnesses:

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