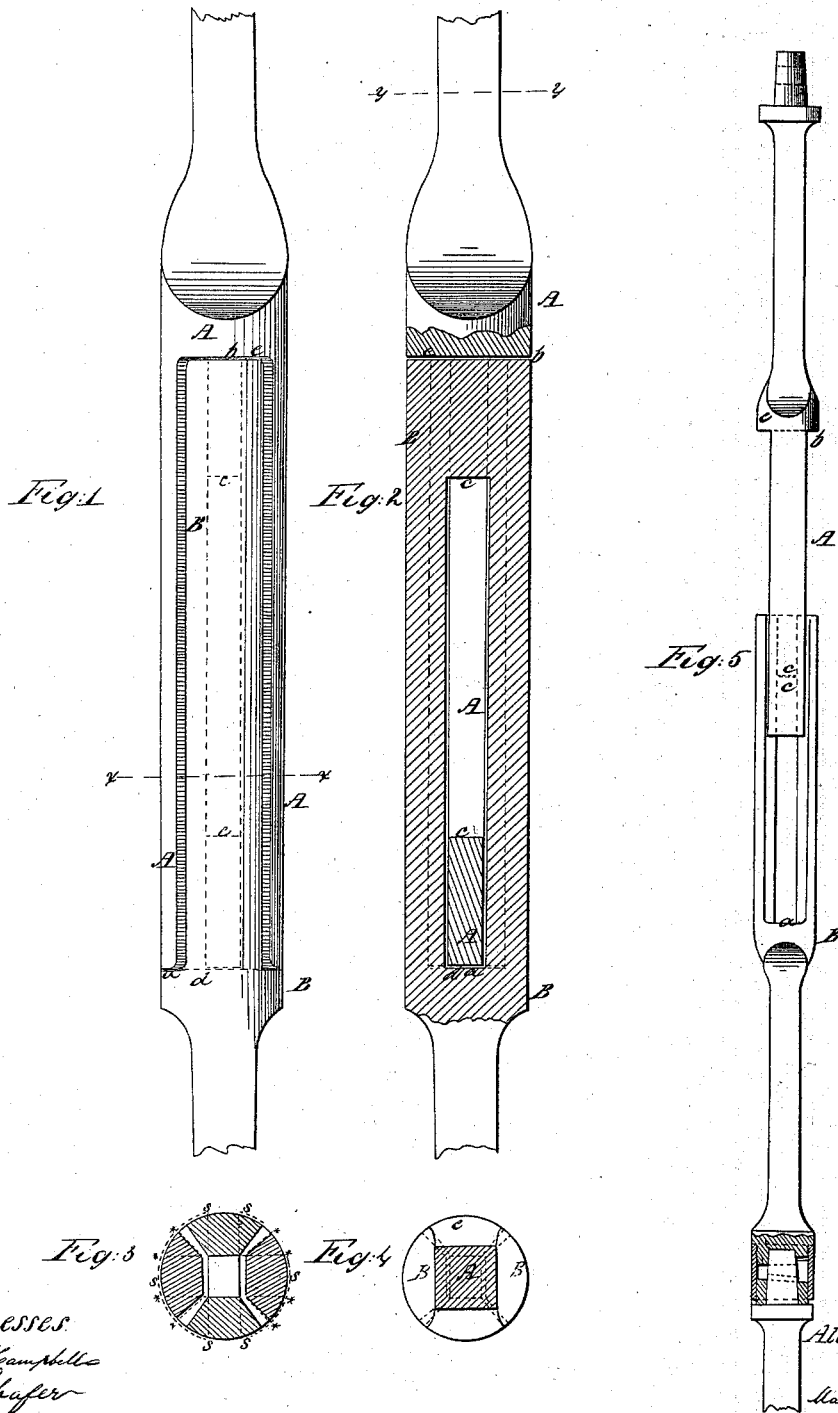


*A.A. Wilson,*  
*Rock-Drill Jar.*

*N<sup>o</sup> 47,249.*

*Patented Apr. 11, 1865.*



*Witnesses*  
*R. F. Campbell*  
*E. Schaffer*

*Inventor*  
*Albert Augustus Wilson*  
*by his Attys*  
*Mason Francis Shaw*

# UNITED STATES PATENT OFFICE.

ALBERT A. WILSON, OF GREEN POINT, NEW YORK, ASSIGNOR TO HIMSELF  
AND HOFFMAN ATKINSON, OF ROUSEVILLE, PENNSYLVANIA.

## IMPROVEMENT IN WELL-BORING DEVICES.

Specification forming part of Letters Patent No. 47,249, dated April 11, 1865.

*To all whom it may concern:*

Be it known that I, ALBERT AUGUSTUS WILSON, of Green Point, in the county of Kings and State of New York, have invented a new and useful Improvement in the Construction of Tools used in Artesian-Well Boring; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of the "jar" portion of the stem of the tool which bores through rocks and other hard substances. Fig. 2 is a vertical central section and partial elevation of the same. Fig. 3 is a horizontal section of Fig. 1 in the line *x x*. Fig. 4 is a horizontal section in the line *y y* of Fig. 2. Fig. 5 is an elevation of the jar, with the stem of the drill or auger keyed to it in a novel manner, which mode of keying or coupling is the subject-matter of another application for a patent filed by me on an even date with this.

Similar letters of reference in the several figures indicate corresponding parts.

My invention relates to that portion of the stem of the drill or cutting tool technically known as the "jar," and the nature of my improvement consists in constructing the jar in such manner that the surfaces thereof which come in violent contact at the striking of the "second blow" of the drill or cutting tool are so strengthened, without increasing the diameter of the jar, as to lessen the liability of the links of the jar being broken when the second blow is struck by the upper link, as will be hereinafter described.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same, with reference to the drawings.

I so construct the jar that its two links, A B, when put together and cut horizontally in two, present the form of a cylinder, as represented in Fig. 3, at whatever point the section may be taken—that is, when the link A is slipped down upon the shoulder *a* of the link B, and the shoulder *b* of the link A rests against the upper end of the link B, about as represented in Fig. 2. The cylinder presented by the section through the two links A B is hollow between the points *c c*, which points determine the length of separate up-and-down

movement of the respective links during the operation of the jar or the striking of each compound blow. From the points *d e*, which are the upper and lower concussion-faces of the respective links, the cylinder presented by a section through either of the links is solid, as will be evident from the drawings.

By thus constructing the jar it will be seen that the concussion-faces of the jar are increased in area and sustained by an increased body of metal, and while this is so, the diameter of the jar at any point is no greater than the width of the ordinary jars in use. I increase the concussion and sustaining surface of the lower end of the link A and the upper end of the link B of a given-sized jar to the amount included between the red dotted lines \* \* in Fig. 3. I also increase the concussion and sustaining surfaces at the top of link A and at the base of link B to the amount included between the red dotted lines *s s s* in Fig. 3.

Jars are usually made of two flat links, and owing to the slight or small body of metal which is left to form the concussion-faces, the ends of the links very frequently fracture or break out and cause a very serious delay in the boring of the well, and also subject the operator to considerable expense and labor in their replacement; and in cases of deep boring, the operation is often proceeded with without a knowledge on the part of the operator that the jar has been broken and is not performing its functions.

It is obvious that my invention may be embodied in other than cylindric jars, and therefore I do not confine myself to the one form shown. An ellipse, oval, or square-shaped figure, divided by radial lines, will present a larger concussion-surface in my jar than is presented by any of the forms of jars now in use.

What I claim as my invention, and desire to secure by Letters Patent, is—

The method, substantially as herein described, of increasing the sectional area and strength of the concussion-surface of jars used in connection with tools for artesian-well boring, for the purpose set forth.

ALBERT AUGUSTUS WILSON.

Witnesses:

R. T. CAMPBELL,  
E. SCHAFER.