J. L. Peake,

Pipe Wrench.

No. 61,355. Patented Jan. 22, 1867.

Fig. 1.

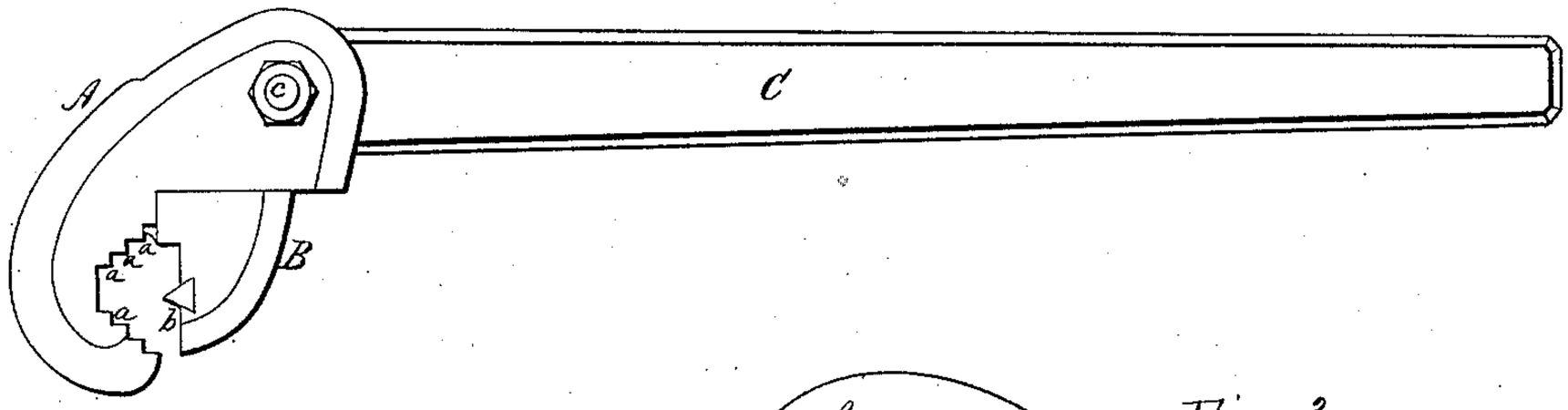


Fig. 2.

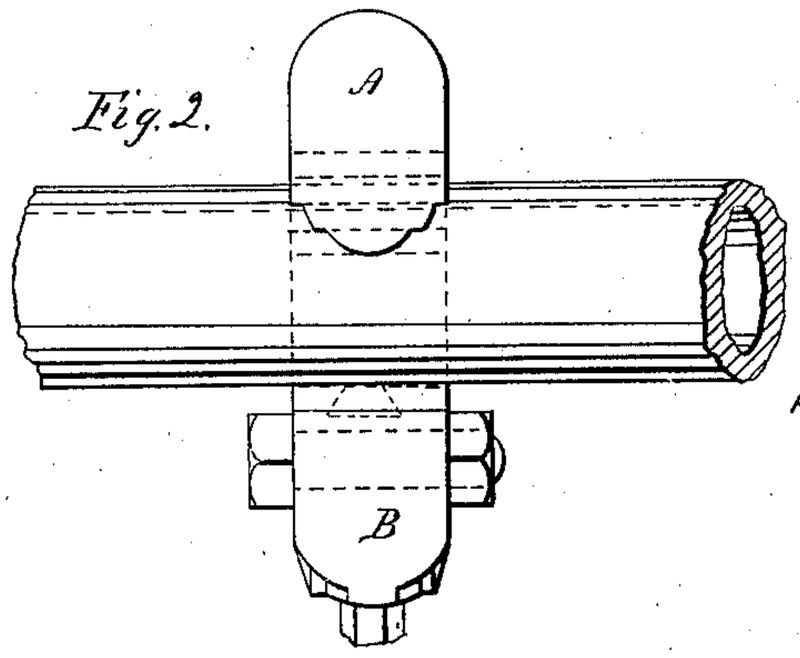


Fig. 3.

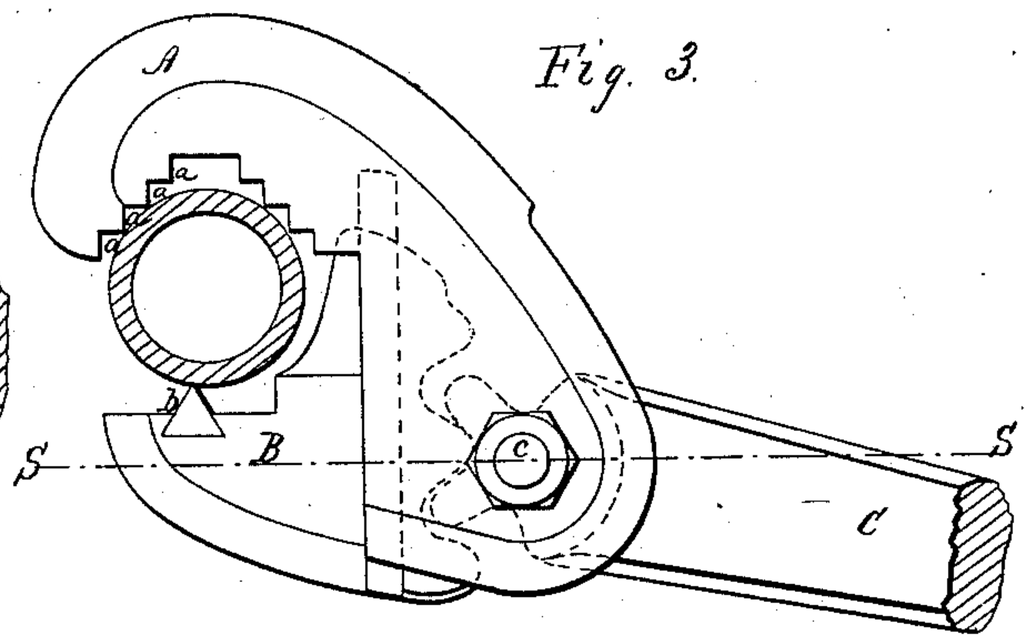


Fig. 4.

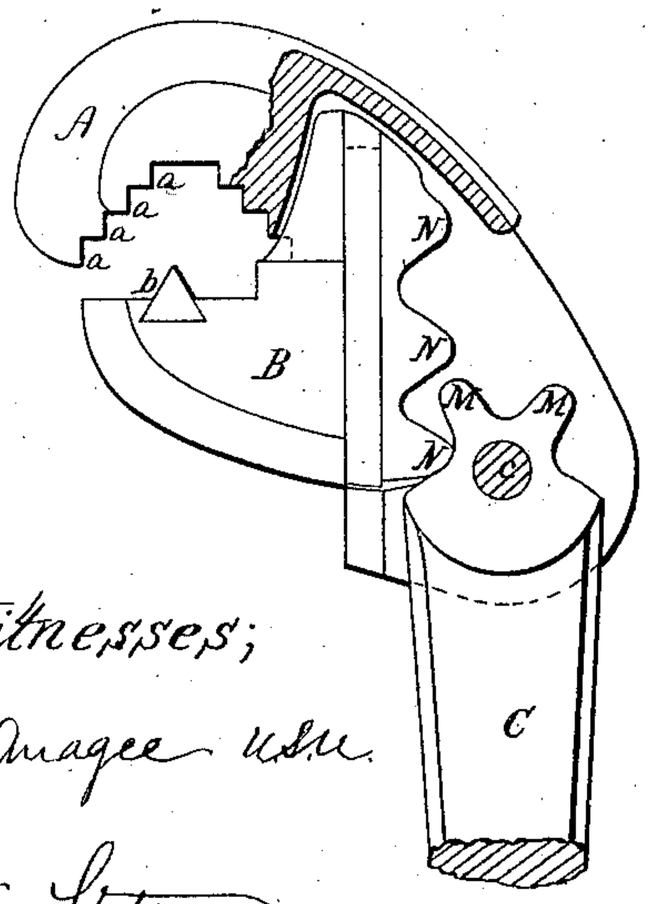
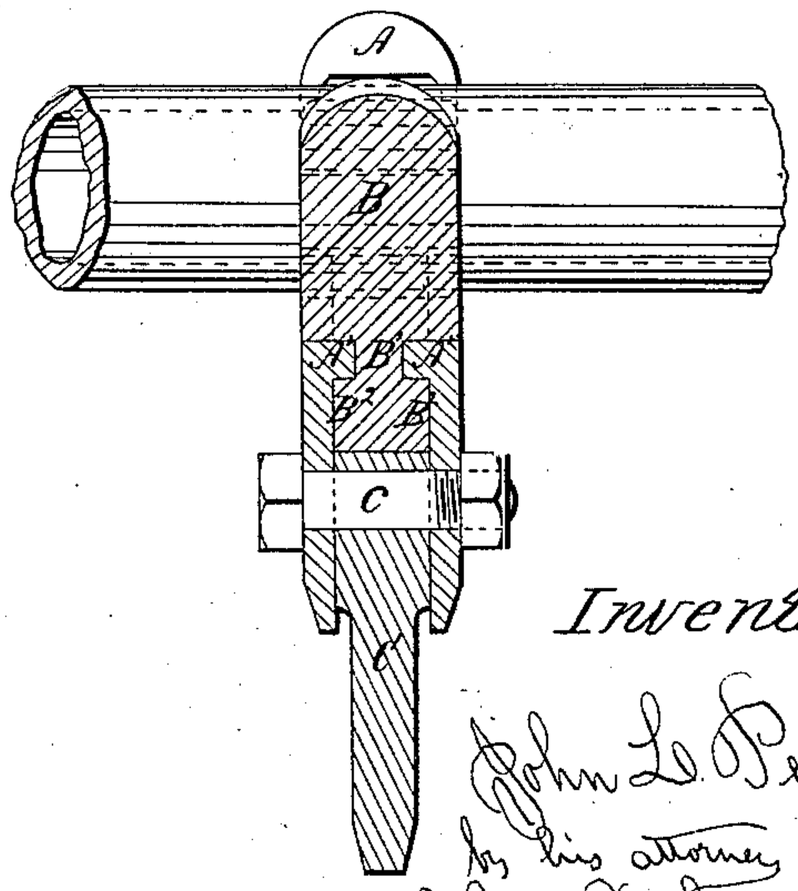


Fig. 5.



Witnesses;

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JOHN L. PEAKE, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND LOUIS GUILLAUDEU, OF SAME PLACE.

Letters Patent No. 61,355, *dated January* 22, 1867; *antedated January* 6, 1867.

IMPROVEMENT IN WRENCHES.

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, JOHN L. PEAKE, of the city and county of New York, and State of New York, have invented certain new and useful improvements in Pipe Wrenches; and I do hereby declare that the following is a full and exact description thereof.

My invention enables me, by a cheaply constructed and durable instrument, having but few parts, to seize pipes having a considerable range of variation in size, and to turn them with great force, simply running the wrench backward around on the pipe, without removing it after each partial revolution of the handle or lever. I am able, by a simple adjustment, to adapt the instrument to a range of sizes much larger or smaller, at will.

I will first describe what I consider the best means of carrying out my invention, and will afterwards designate the points which I believe to be new. The accompanying drawings form a part of this specification.

Figure 1 is a side view of the wrench complete.

Figure 2 is an end view of the wrench in the act of grasping a pipe, indicated in red outline. (This figure shows in blue outline another mode of securing the tooth, which forms an important and essential feature of my invention.)

Figure 3 is a side view corresponding to fig. 2.

Figure 4 is a side view of the wrench in its closely shut condition, with a portion of the side broken away to better exhibit the interior.

Figure 5 is a horizontal section on the line *s s*, in fig. 3.

Similar letters of reference indicate like parts in all figures. Tints are employed merely to aid in distinguishing parts, and do not indicate materials. The material of the whole may be wrought iron and steel. I believe that very satisfactory wrenches may be made in this style by the employment of malleable cast iron as a material for the principal parts.

A is a stout jaw recessed by offsets, as indicated by *a a a*, on the surface which is presented to the pipe. B is a jaw adapted to slide on the ways A^1, and to be guided thereon by the tongue B^1, and shoulders B^2 B^2, which slide in corresponding grooves formed in the jaw A, as represented. These parts may be forged or cast with approximate accuracy, but leaving a slight excess of metal, and afterwards finished to the correct form by suitable machinery; or they may be formed as nearly a correct form as possible, but with a slight deficiency of metal, so as to leave the groove in the jaw A a little larger than the part of the jaw B which is to run therein. In this latter case the parts may be put together without expensive finishing. That face of the jaw B which is presented to the pipe is provided with a blunt tooth or wedge-shaped piece of hardened steel, as indicated at *b*. I have represented this piece as secured by being driven tightly in the dove-tail recess. This ridge, *b*, may, if preferred, be formed permanently on the jaw B, by welding or otherwise; or it may be secured by any approved means, such as screwing, riveting, or the like. Its function is to press firmly upon the side of the pipe to which it is presented, and to hold the pipe with sufficient firmness between itself and the recessed surface *a a*, on the jaw A, to allow the pipe to be turned with all the force which is requisite. C is the handle. It is secured by the stout pin *c*, in a cavity in the jaw A, which cavity has parallel sides, adapted to fit closely but easily to the parallel faces of the part of the handle C which is presented thereto. The pin *c* is removable by unscrewing or otherwise liberating it from any holding means. The handle C is adapted to turn on the pin *c*, so as to perform partial revolutions in opposite directions. M is a series of teeth forming a segment of a gear-wheel on the handle C, the segment having its centre in the axis of the pin *c*. N is a series of teeth forming a rack on the lower edge of the jaw B, &c., before described. The teeth M and N lock into each other in all positions of the instrument.

To use my invention the jaws A and B are opened, either by applying the hand or giving the proper shake to the handle C, which is easily acquired by practice. Now, on applying my wrench in this condition, so as to embrace the pipe between the surfaces *a a* and the tooth *b*, and moving the handle C in the direction indicated by the arrow, the handle C makes a partial revolution in the jaw A, and by the action of the teeth M upon the teeth N, causes the tooth *b* to press against the side of the pipe, and to hold the latter between itself and the surface *a a* with a force which is proportionate to the force applied to the lever C. I have found that with the

parts proportioned as represented, this force is always sufficient to insure a proper gripe on the pipe. It may be desirable, in constructing my wrench to operate on very thin pipes, to give a larger diameter to the segment M, and to proportionately modify the other parts, so as to give a less pressure on the pipe. Or it may be desirable, in some cases, to modify the proportions in the opposite direction, so as to insure a more powerful gripe. Changes of this character will be readily obvious to any good mechanic. In order to turn the pipe in the opposite direction, it is necessary simply to turn my pipe-wrench over and apply it so as to close by forcing the lever in the opposite direction. At each movement of the handle in one direction the pipe is griped and turned; and at each movement of the handle in the opposite direction, the wrench is opened sufficiently to release it, and allow it to turn easily. In order to adjust my wrench to act on much larger or smaller pipes, I remove the pin *c*, and then withdraw the handle C so far as to disconnect the teeth of the segment M from the teeth of the rack N. I then change the position of the teeth by moving the handle C in one direction or the other and reinsert it. This causes the jaw B to assume a different position relatively to the other parts, putting the tooth *b* nearer to, or farther from, the surface *a a*, as may be desired. A portion of the advantages of my invention may be obtained by means of a smooth hollow in the jaw A, instead of the offset hollow represented. So also may a portion of the benefits be realized by various other obvious modifications, as, for example, placing the tooth on the jaw A, and the hollow on the jaw B; but I prefer the construction represented. With the working parts arranged as represented, the strain on the tooth *b* is always inward or toward the slide B, and never in the opposite direction. This fact will allow me to introduce the tooth *b* with great firmness, by providing a dove-tail base, and driving it in a dove-tail groove made at right angles, after the manner represented, a position which is indicated in blue outline in fig. 2. My invention possesses the marked advantages of great facility of operation with very strong gripe, and of seizing pipes of different sizes in the same manner, that is, by forcing the tooth *b* always directly in the line of the centre of the pipe, or bolt, or other cylindrical body to which it is applied. The tooth *b* moves backward and forward in a right line instead of on a curve, as in most previous pipe-wrenches, and making this line almost coincident with the line of the centres of the tubes of different sizes, the tooth will act in exactly the same manner upon each. I find it preferable, however, in ordinary cases, to place the tooth *b* so that it is traversed a little out of this line of centres, as represented. I do not, however, consider this of vital importance.

Having now fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is as follows:

I claim the recessed face *a a*, on the jaw A, in combination with the tooth *b*, on the jaw B, adapted to traverse backward and forward by means of the rack N, segment M, and lever C, all arranged for joint operation so as to act on cylindrical bodies or pipes of different diameters, all in lines at uniform distances from their centres, substantially as herein set forth.

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

JOHN L. PEAKE.

Witnesses:

THOMAS D. STETSON,

D. L. FREEBORN.