

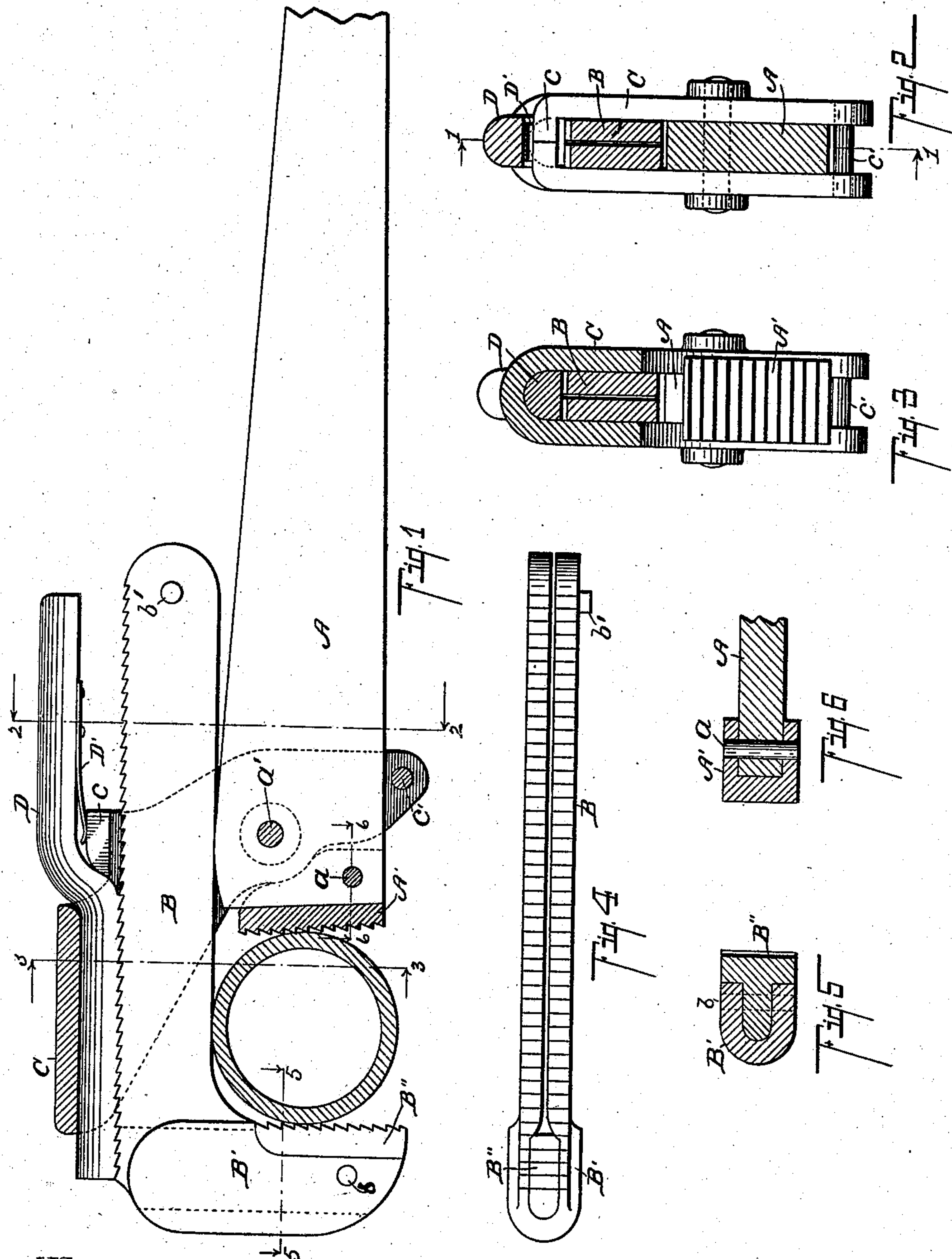
No. 885,120.

PATENTED APR. 21, 1908.

G. C. WINSLOW.  
PIPE WRENCH.

APPLICATION FILED JUNE 12, 1905.

2 SHEETS—SHEET 1.



Witnesses:

*Eitel A. Bradford*  
*E. M. Jackson*

Inventor,

*George C. Winslow*  
By *Chappell & Carl*  
Att'ys

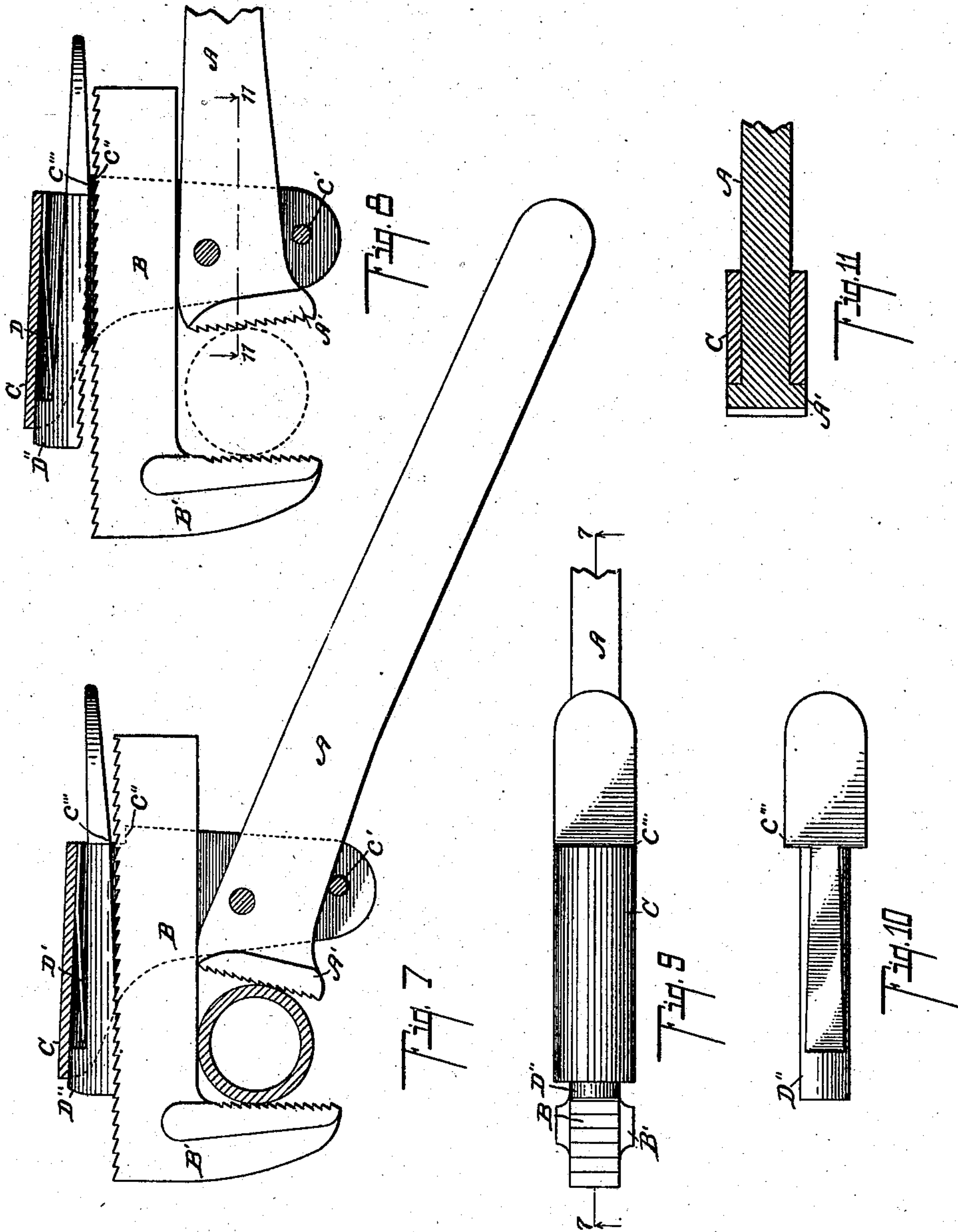
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# UNITED STATES PATENT OFFICE.

GEORGE C. WINSLOW, OF KALAMAZOO, MICHIGAN.

## PIPE-WRENCH.

No. 885,120.

Specification of Letters Patent.

Patented April 21, 1908.

Application filed June 12, 1905. Serial No. 264,823.

*To all whom it may concern:*

Be it known that I, GEORGE C. WINSLOW, a citizen of the United States, residing at the city and county of Kalamazoo, State of Michigan, have invented certain new and useful Improvements in Pipe-Wrenches, of which the following is a specification.

This invention relates to improvements in pipe wrenches.

The objects of this invention are—first, to provide an improved pipe wrench which may be very rapidly and easily adjusted to any size pipe or object within its scope. Second, to provide an improved pipe wrench which is adjustable without the aid of nut screws or the like. Third, to provide an improved pipe wrench which is simple and economical in structure and very strong and durable.

Further objects, and objects relating to the structural details will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawings forming a part of this specification, in which—

Figure 1 is a detail view of my improved pipe wrench, partially in section, on a line corresponding to line 1—1 of Fig. 2. Fig. 2 is a transverse sectional view taken on a line corresponding to line 2—2 of Fig. 1. Fig. 3 is a transverse sectional view taken on a line corresponding to line 3—3 of Fig. 1. Fig. 4 is an edge view of the movable jaw and its shank. Fig. 5 is a detail transverse sectional view through the jaw B, taken on a line corresponding to line 5—5 of Fig. 1. Fig. 6 is a detail longitudinal sectional view taken on a line corresponding to line 6—6 of Fig. 1, showing structural details of the fixed jaw A'. Fig. 7 is a side elevation view of a modified construction of my improved pipe wrench, partially in section, on a line corresponding to line 7—7 of Fig. 9. Fig. 8 is a detail side elevation view of my improved pipe wrench, partially in section, showing the parts in position to be adjusted. Fig. 9 is a detail rear edge view of the structure shown in Fig. 7. Fig. 10 is a plan view of the bearing block D' of the modified construction. Fig. 11 is a detail sectional view taken on a line corresponding to line 11—11 of Fig. 8.

In the drawings similar letters of reference refer to similar parts throughout the several views, and the sectional lines are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the lettered parts of the drawings, I provide a lever-like handle A having a relatively fixed jaw A' on the inner end thereof. The jaw A' is preferably formed with side plates adapted to embrace the end of the lever and is retained thereon by the pin *a*. An adjustable jaw B' is provided carried by the shank B. The jaw B' and its shank B are preferably formed of a piece of boiler plate folded upon itself, as clearly appears in Fig. 4. The engaging face B'' is inserted in the fold of the plate and retained therein by a rivet or pin *b*. I thus secure a jaw and shank which possesses great strength and one which is economical to produce. The adjustable jaw is secured to the handle A by means of the loop-like link C through which its shank is arranged. The link C is pivotally secured to the handle or lever A by the pin *a'*. The link C is also preferably formed of boiler plate. The link C projects forwardly so that its outer end overhangs the relatively stationary jaw carried by the handle or lever A.

In operation, the inner end of the lever or handle A engages the inner edge of the shank B of the movable jaw B'. The engaging portion of the handle is preferably cam shaped. The tendency of this, on account of the location of the bearing point of the link C for the shank B, is to throw the jaw B' down into engagement with the pipe or object. The forwardly projecting link C is also of advantage in that it brings the bearing point for the shank B as close as possible to its jaw, thereby lessening the liability of breaking or bending the same under great strain.

The upper edge of the shank B is provided with forwardly projecting teeth or serrations which engage the oppositely arranged teeth or serrations of the bearing block D by means of which the slipping of the jaw is prevented and its adjustment accomplished.

Bearing block D is provided with a rearwardly projecting finger piece by means of which it may be lifted out of engagement with the shank B thereby permitting its adjustment. The bearing block D is arranged over a cross-piece *c* formed on the link C. The bearing block is curved to pass up between the cross-piece on top of the link, as



clearly appears in Fig. 1. A blade spring D' is secured to the under side of the said finger piece extension of the bearing block and is arranged to engage the cross-piece c. The tendency of this spring is to force the bearing block normally into engagement with the shank B.

In Fig. 1, I have illustrated my improved pipe wrench engaged upon a pipe. To disengage the pipe from the wrench, it is only necessary to move the handle or lever A rearwardly which releases the jaws. To adjust the jaws, it is only necessary, if it is desired to close them up, to pull or push the movable jaw inwardly. If it is desired to open the jaws, the bearing block D is lifted by pressure upon the finger piece thereof. This allows the jaw B' to be moved outwardly. Upon releasing the bearing block, it is forced into engagement with the shank B by the spring D'.

A pin b' projects laterally at the rear end of the shank B to prevent its withdrawal from the link. To relieve the bearing pin a' of the link C from excessive strain when the wrench is in operation, a stop pin c' is arranged through the lower end of the link to engage the handle A. To further relieve the strain on the pivot pin b, a curved seat or bearing is formed on the jaw A for the link C.

When the shank B is made of a piece of boiler iron folded upon itself, as I have stated is preferred by me, it possesses sufficient lateral spring to prevent its accidental slipping within the link when the wrench is being adjusted.

In the modified construction shown in Figs. 7 to 11 inclusive, the link is shouldered at c'' at its rear edge to form a rest for the shoulder c''' formed on the bearing block D''. The spring D' in this construction is arranged in the link—so that it bears upon the back of the bearing block. In Fig. 8, the bearing block is shown thrown up to release the adjustable jaw. The modified construction shown in Figs. 7 to 11 inclusive, is adapted for light work, while the structure shown in Figs. 1 to 6 inclusive, is especially designed for heavy work, though it is applicable for smaller sizes of wrenches, or wrenches for light work, and the structure in Figs. 7 to 11, may also be used for heavy work, although, as I have stated, I have particularly designed the same for light work.

With the parts arranged as I have illustrated and described, I secure a wrench which is very quickly and easily adjusted to any pipe or object within its scope. My improved wrench is adapted for use where it is difficult to manipulate other wrenches on account of the confined area in which it must be used. It is quickly detached from an object, it being only necessary to reverse the movement of the handle to release the jaws.

The parts of my improved pipe wrench are very simple and economical to produce and the structure is very strong and durable. On account of the arrangement of the handle and the link in relation to the movable jaw and its shank, the tendency is from the first movement to grip the jaws upon the pipe or other object and the link is so arranged that the liability of bending or twisting the shank of the movable jaw is reduced to a minimum.

I have illustrated and described my improved pipe wrench in the form preferred by me on account of its structural simplicity and economy and great strength. I am, however, aware that it may be considerably varied in structural details without departing from my invention.

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

1. The combination of a handle; a relatively fixed jaw on the inner end thereof; a forwardly projecting loop-shaped link pivoted on said handle at its inner end; a movable jaw; a shank therefor having serrations or teeth on its outer edge, said jaw and shank being formed of a piece of plate metal folded upon itself, arranged through said link to be engaged by the inner end of said handle, the engaging portion of the said handle with said shank being curved; a gripping face for said movable jaw inserted in the fold of said plate; a bearing block, provided with teeth or serrations corresponding to those of said shank and having a rearwardly projecting finger piece arranged in the outer end of said link; a cross-bar on said loop adapted to serve as a fulcrum for said bearing block; and a spring carried by said bearing block, arranged to engage said cross-piece, for the purpose specified.

2. The combination of a handle; a relatively fixed jaw on the inner end thereof; a forwardly projecting loop-shaped link pivoted on said handle at its inner end; a movable jaw; a shank therefor having serrations or teeth on its outer edge, said jaw and shank being formed of a piece of plate metal folded upon itself, arranged through said link to be engaged by the inner end of said handle, the engaging portion of the said handle with said shank being curved; a gripping face for said movable jaw inserted in the fold of said plate; a bearing block, provided with teeth or serrations corresponding to those of said shank and having a rearwardly projecting finger piece, arranged in the outer end of said link; and a spring arranged to hold said bearing block normally in engagement with said shank, for the purpose specified.

3. The combination of a handle; a relatively fixed jaw on the inner end thereof; a forwardly projecting loop-shaped link pivoted on said handle at its inner end arranged



to swing forwardly over the said fixed jaw; a movable jaw; a shank therefor having serrations or teeth on its outer edge, said jaw and shank being formed of a piece of plate metal folded upon itself, arranged through said link to be engaged by the inner end of said handle, the engaging portion of the said handle with said shank being curved; a gripping face for said movable jaw inserted in the fold of said plate; and a bearing block provided with teeth or serrations corresponding to those of said shank and having a rearwardly projecting finger piece arranged in the outer end of said link; for the purpose specified.

4. The combination of a handle; a relatively fixed jaw on the inner end thereof; a forwardly projecting loop-shaped link pivoted on said handle at its inner end; a movable jaw; a shank therefor having serrations or teeth on its outer edge, said jaw and shank being formed of a piece of plate metal folded upon itself, arranged through said link; a gripping face for said movable jaw inserted in the fold of said plate; a bearing block provided with teeth or serrations corresponding to those of said shank and having a rearwardly projecting finger piece, arranged in the outer end of said link; a cross-bar on said loop adapted to serve as a fulcrum for said bearing block; and a spring carried by said bearing block, arranged to engage said cross-piece, for the purpose specified.

5. The combination of a handle; a relatively fixed jaw on the inner end thereof; a forwardly projecting loop-shaped link pivoted on said handle at its inner end; a movable jaw; a shank therefor having serrations or teeth on its outer edge, said jaw and shank being formed of a piece of plate metal folded upon itself, arranged through said link; a gripping face for said movable jaw inserted in the fold of said plate; a bearing block, provided with teeth or serrations corresponding to those of said shank and having a rearwardly projecting finger piece arranged in the outer end of said link; and a spring arranged to hold said bearing block normally in engagement with said shank, for the purpose specified.

6. The combination of a handle; a relatively fixed jaw on the inner end thereof; a forwardly projecting loop-shaped link pivoted on said handle at its inner end; a movable jaw; a shank therefor having serrations or teeth on its outer edge, said jaw and shank being formed of a piece of plate metal folded upon itself, arranged through said link; a gripping face for said movable jaw inserted in the fold of said plate; and a bearing block,

provided with teeth or serrations corresponding to those of said shank and having a rearwardly projecting finger piece arranged in the outer end of said link, for the purpose specified.

7. The combination of a handle; a relatively fixed jaw on the inner end thereof; a loop-shaped link pivoted on said handle at its inner end; a movable jaw; a shank therefor, having serrations or teeth on its outer edge, said jaw and shank being formed of a piece of plate metal folded upon itself, arranged through said link; and a gripping face for said movable jaw inserted in the fold of said plate, for the purpose specified.

8. The combination with a handle, of a relatively fixed jaw on the inner end thereof, said handle having a curved bearing surface on its rear edge; a movable jaw; a shank therefor having a bearing surface on its front edge adapted to rest on said bearing surface on the rear edge of said handle and having serrations or teeth in its rear edge; a loop-like link adapted to receive said shank arranged on said handle to embrace the same, said link being pivoted to said handle; a bearing block for said shank loosely arranged in the outer end of said link having serrations or teeth on its inner edge adapted to engage said shank; and a cross-bar at the rear edge of said link over which said bearing block is loosely arranged adapted to serve as a fulcrum therefor, for the purpose specified.

9. The combination with a handle, of a relatively fixed jaw on the inner end thereof, said handle having a curved bearing surface on its rear edge; a movable jaw; a shank therefor having a bearing surface on its front edge adapted to rest on said bearing surface on the rear edge of said handle and having serrations or teeth on its rear edge; a loop-like link adapted to receive said shank pivoted on said handle, said link being adapted to overhang said fixed jaw; and a bearing block for said shank arranged in the outer end of said link, said bearing block having serrations or teeth on its inner edge adapted to engage said shank for adjustably securing the same in position in said link, the rear point of engagement of said bearing block with said shank being in a plane in front of the plane of the pivot of said link, for the purpose specified.

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

GEORGE C. WINSLOW.

Witnesses:

OTIS A. EARL,  
A. J. ALBER.