

(No Model.)

W. S. BEMIS.  
COMBINED PIPE AND MONKEY WRENCH.

No. 501,860.

Patented July 18, 1893.

Fig. 1.

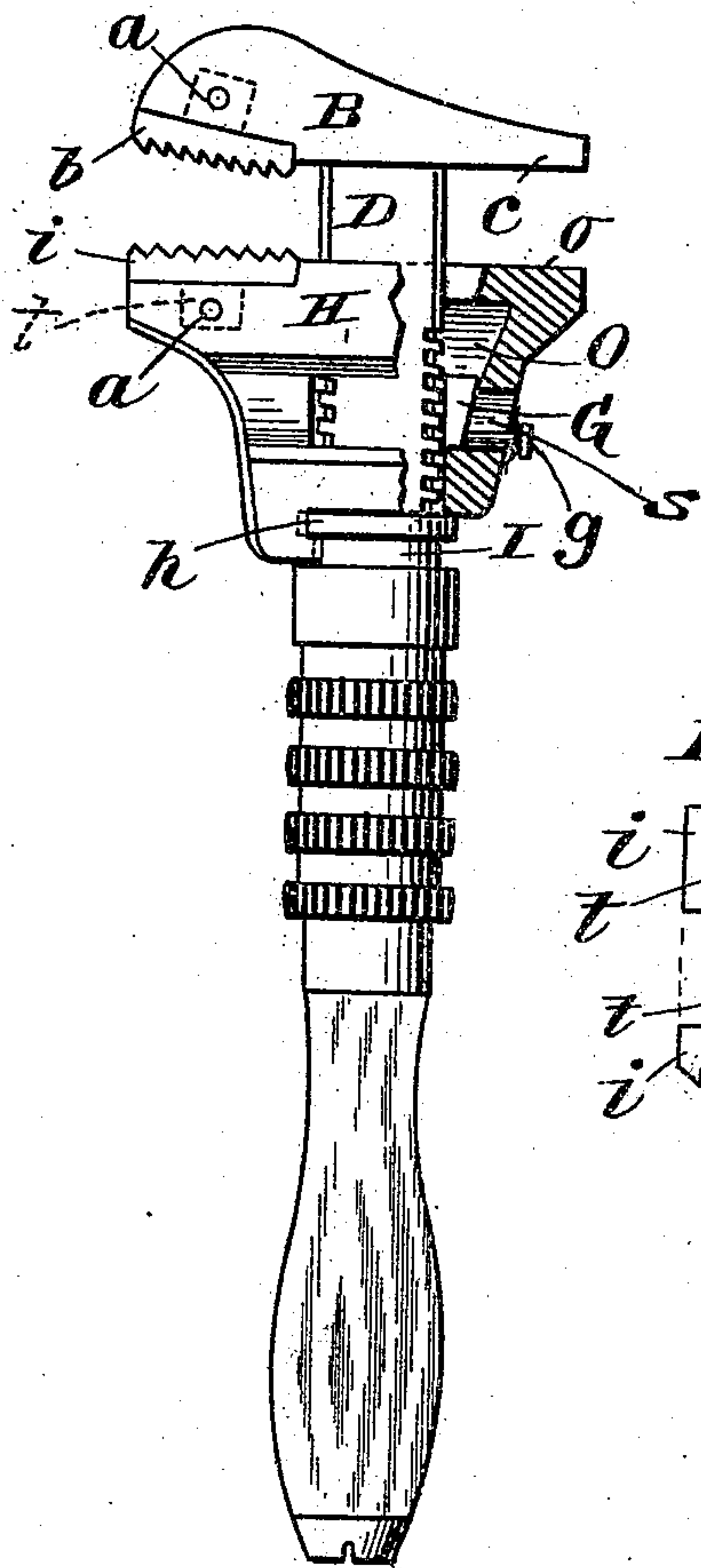


Fig. 2.

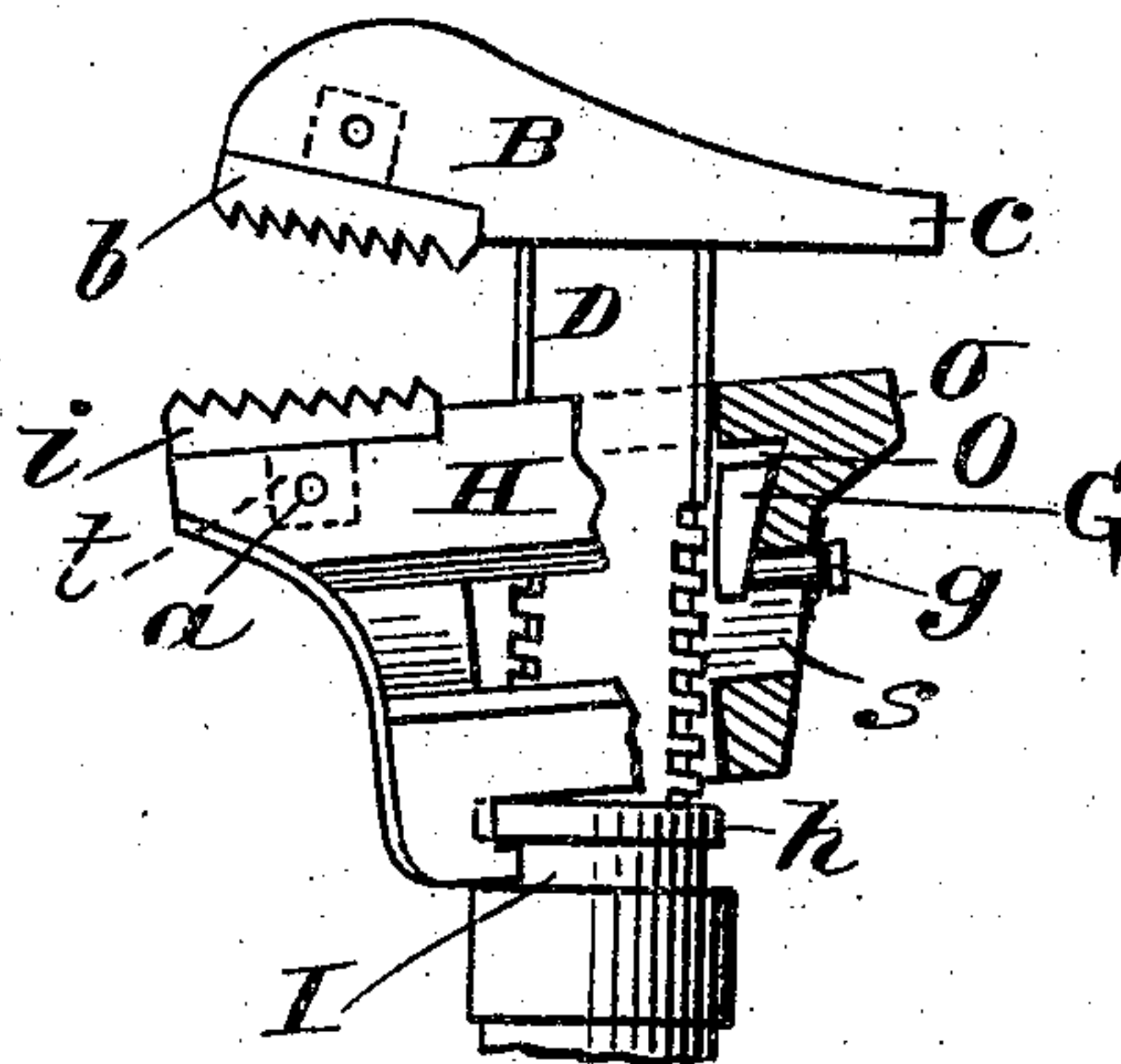


Fig. 4.

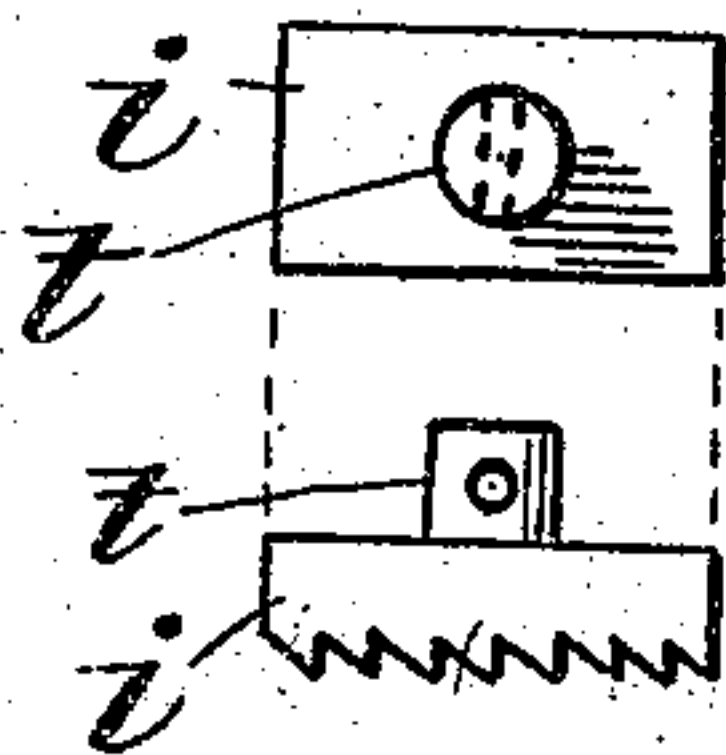
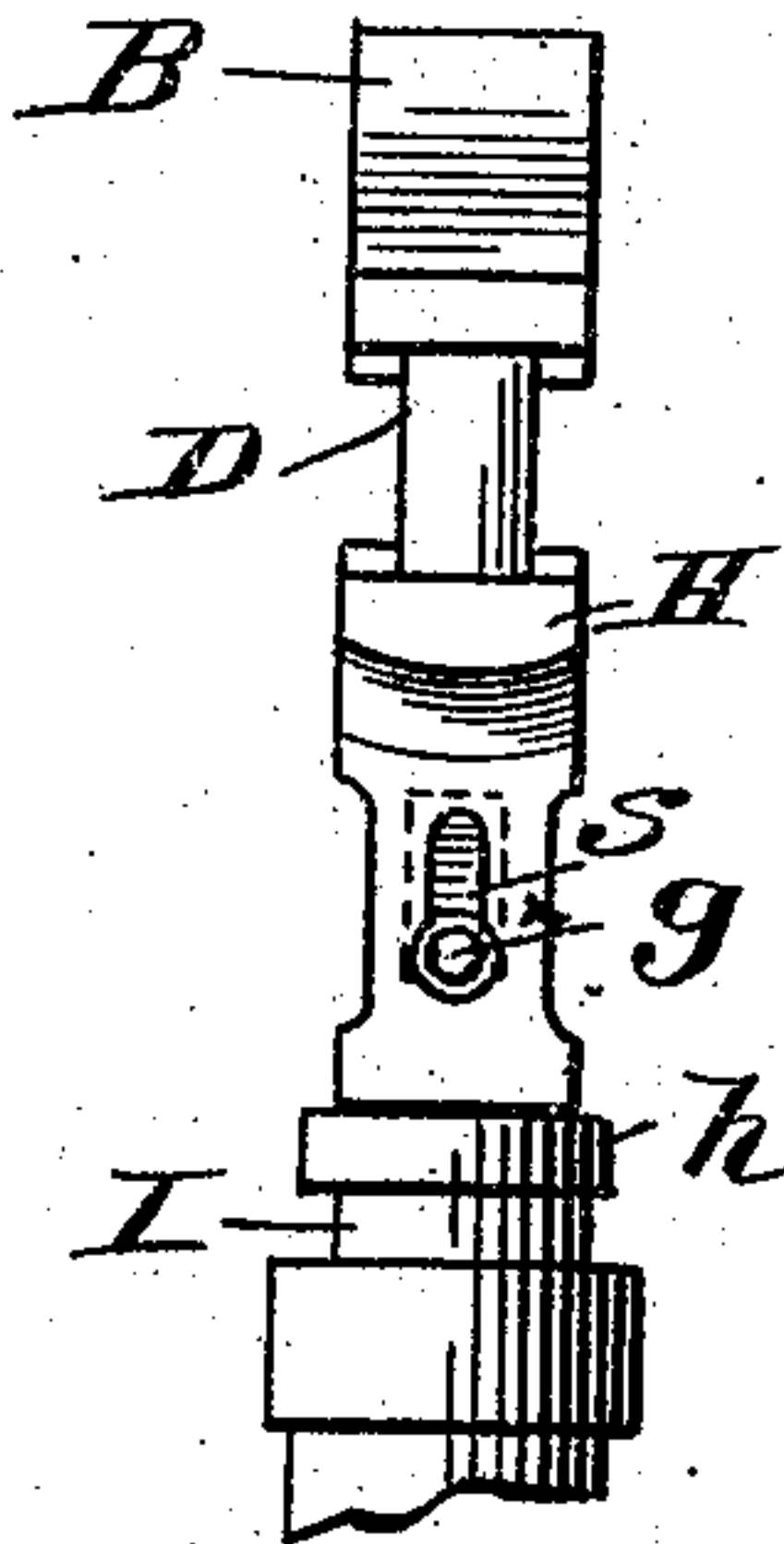


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## COMBINED PIPE AND MONKEY WRENCH.

SPECIFICATION forming part of Letters Patent No. 501,860, dated July 18, 1893.

Application filed May 8, 1893. Serial No. 473,369. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM S. BEMIS, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in a Combined Pipe and Monkey Wrench, of which the following is a specification.

This invention relates to wrenches, and consists in mechanism adapting the device as a monkey-wrench to be quickly changed to a pipe-wrench, and vice-versa, as more particularly hereinafter set forth in the specification, and pointed out in the claims.

The invention is fully illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of an entire wrench in partial section, showing the movable jaw arranged as one of the jaws of a monkey wrench. Fig. 2 is a side elevation in partial section of the jaws of a wrench showing the movable jaws adapted to form one of the jaws of a pipe-wrench. Fig. 3 is an elevation of the jaw end of a wrench at right angles to the view shown in Fig. 1, and with the parts in the same position, and Fig. 4 is a detail view.

B is the fixed jaw secured upon the end of the bar, D, and extended across the bar to form jaw surfaces, *b*, *c*, upon opposite sides of the bar. The surface, *b*, is provided with teeth and inclined at an angle to bar, D, to adapt it to form one of correspondingly inclined and serrated jaws of a pipe-wrench, and the surface, *c*, is at right angles to bar, D, to serve as one of the parallel jaws of a monkey-wrench.

H is the movable jaw-piece provided with jaws, *i*, *o*, upon each side of the bar, D, to correspond with the fixed jaw surfaces, *b*, *c*. The jaw-piece, H, is slotted to receive through it the bar, D, and the lower end of the jaw-piece is hooked to the collar, *h*, of the operating nut, I, so that the jaw-piece, H, is in the usual manner, slid upon bar, D, upon the rotation of the nut. The side walls of the jaw-piece, H, conforms to the sides of bar, D, so that the jaws, *i*, *o*, are always held in the same vertical plane with the jaw surfaces, *b*, *c*. The end walls of the jaw-piece, H, coming opposite the threaded sides of bar, D, in place of be-

ing parallel to each other as in the case of the side walls, are at an angle to each other in a general V-shape, with the apex next the nut, I, and the mouth at the jaw end, and the jaw-piece, H, being hooked to collar, *h*, upon only one side of bar, D, the jaw-piece, H, can be rocked on the collar as a pivot, without releasing it, to bring either of the inclined sides to bear upon bar, D, to cause the jaws, *c*, *o*, to be parallel to form those of a monkey-wrench, as shown in Fig. 1; or to compel the jaws, *b*, *i*, to assume the position shown in Fig. 2, to constitute a pipe-wrench.

The mechanism for holding the jaw-piece, H, in either position required, consists of a segmental wedge, G, received in a wedge cavity, O, sunk in one of the inclined walls, and provided with a pin, *g*, as an operating handle, extended through a slot, *s*, in the jaw-piece, H, to be in reach of the hand. As shown in the drawings, the wedge, G, is only a segment of a wedge that would completely fill the cavity, O, so that when resting at the bottom of said cavity, as seen in Fig. 1, the jaw-piece, H, is held in one position, and when moved to the other end of said cavity, the jaw-piece can be tipped, as shown in Fig. 2. The cavity, O, and wedge, G, are correspondingly truncated so that when combined, as shown in Fig. 1, there is no tendency of the wedge to jam as the jaws are approached. When the wedge is in the position seen in Fig. 2, to adapt the device for a pipe-wrench, it will be seen that the jaw, H, can have the independent rocking motion when a pipe is between the jaws, *b*, *i*, of much advantage when teeth are in a ratchet form. The wedge, G, as shown in either position, rides easily upon bar, D, and does not interfere with the reciprocation of the jaw-piece upon the bar. For holding the wedge, G, frictionally to such position as it may be moved to, a metallic spring washer, or other suitable spring is placed on the pin, *g*, between the head thereof, and the adjoining side of the jaw, H. The jaw surfaces, *b* and *i*, are made removable to be replaced when worn, or exchangeable with gripping surfaces of different configuration, by being of the general form shown in Fig. 4, of plates having a flat bearing in the ends of the jaws, with one side coming against a



corresponding shoulder of the jaws to prevent movement on the jaws, and with shanks, *t*, fitting into corresponding countersinks in the jaws. The shanks, *t*, are provided with  
 5 holes coinciding with transverse holes in the jaws, so that when in place, the plates, *b*, *i*, forming the jaw surfaces, are held by pins, *a*, easily driven out when it is desired to remove the plate, or to replace a broken one with an-  
 10 other.

It is obvious that the jaw surfaces, *b*, *i*, upon one side of the bar, *D*, would, of themselves in this device, be sufficient to form of it a combined pipe and monkey-wrench, leaving  
 15 the jaw *c*, *o*, upon the opposite side of bar, *D*, to be dispensed with, as from one jaw surface, *b*, arranged at right angles to bar, *D*, and serving as one of parallel jaws of a monkey-wrench, the other would drop upon the  
 20 rotation of jaw-piece, *H*, to supply at the required angle, the duplicate jaws of a pipe-wrench, and interchangeable jaw surfaces, *b*, *i*, would increase the number of uses to which the wrench could be adapted.

25 What I claim as my invention is—

1. In a combined pipe and monkey-wrench, the wrench-bar, *D*, the fixed jaw, *B*, the rock-  
 ing jaw, *H*, and the wedge, *G*, adjustable between the jaw, *H*, and the bar, to different  
 30 positions, substantially as and for the purpose set forth.

2. The within described combined pipe and monkey-wrench, consisting of a bar, *D*, a fixed  
 35 end jaw, *B*, a movable jaw-piece inclosing bar, *D*, in a slot having parallel side walls conforming to the sides of the bar, and opposite end walls at an angle to each other to adapt one wall to be inclined from the surface  
 of bar, *D*, when the other is in contact with  
 40 the bar, an operating nut, *I*, collared to the movable jaw-piece, a hinge formed by collar,

*h*, and the movable jaw-piece upon which the latter can be rotated, a wedge cavity in one of the inclined innersides of the movable jaw,  
 and a segmental wedge adapted to be slid  
 45 from one end of the wedge cavity to the other, all operating as and for the purpose set forth.

3. In wrenches, a bar, *D*, a fixed end jaw, *B*, supplying jaw surfaces upon opposite sides of bar, *D*, a movable jaw-piece inclosing bar, *D*, in a slot having parallel guiding side walls,  
 50 and opposite end walls at an angle to each other, substantially as shown, and provided with jaw surfaces upon opposite sides of bar, *D*, an operating nut, *I*, a hinge-formed by col-  
 55 lar, *h*, and one end of the movable jaw-piece, a wedge cavity in one of the inclined inner sides of the movable jaw, and a segment of a wedge partially filling the wedge cavity and adapted to be slid therein from one end to the  
 60 other, all combined and operating as and for the purpose set forth.

4. In wrenches, the combination of bar, *D*, jaw, *B*, movable jaw-piece, *H*, inclosing bar, *D*, to slide thereupon, and provided with in-  
 65 terior inclined sides permitting the jaw-piece a limited rotation in one plane, as shown, an operating nut, *I*, collared to the jaw-piece, *H*, and affording a hinge for the jaw-piece to ro-  
 70 tate upon, a wedge-shaped recess in one interior inclined side of the jaw-piece, *H*, and a segmental wedge provided with a handle, *g*, combined with a slot, *s*, in the wall of the  
 movable jaw-piece, and adapted to fill one end of the wedge recess to hold the jaw piece, *H*,  
 75 from tilting, and to be slid to the other end of said recess to leave the jaw free to tilt.

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Witnesses:

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