D. P. KAHLE.

WRENCH.

APPLICATION FILED SEPT. 7, 1910. RENEWED JUNE 19, 1911.

999,034. Patented July 25, 1911.

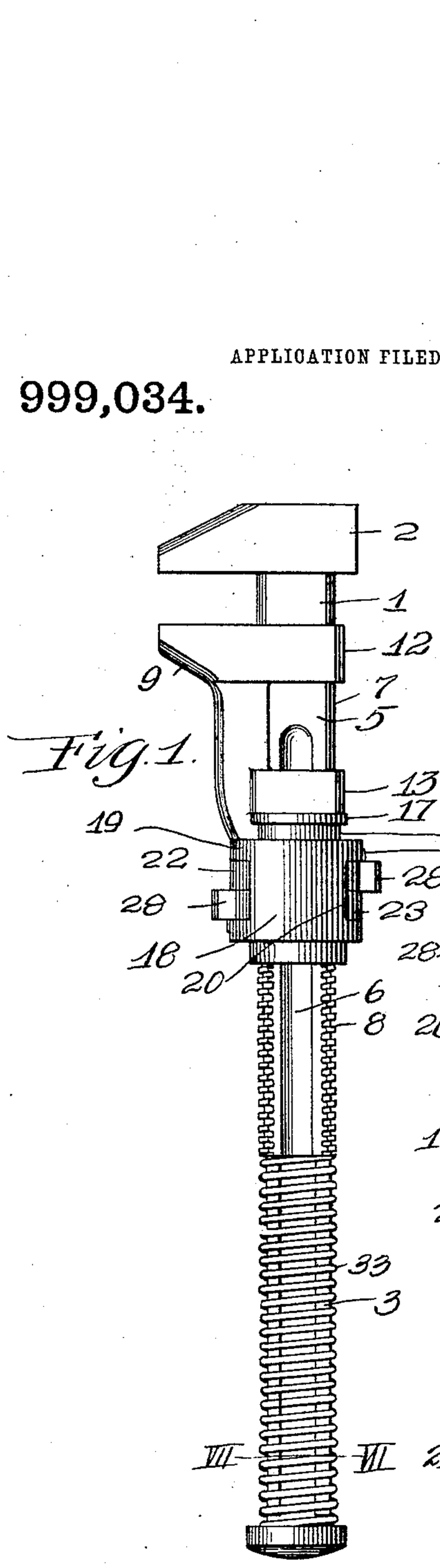


Fig. 1.

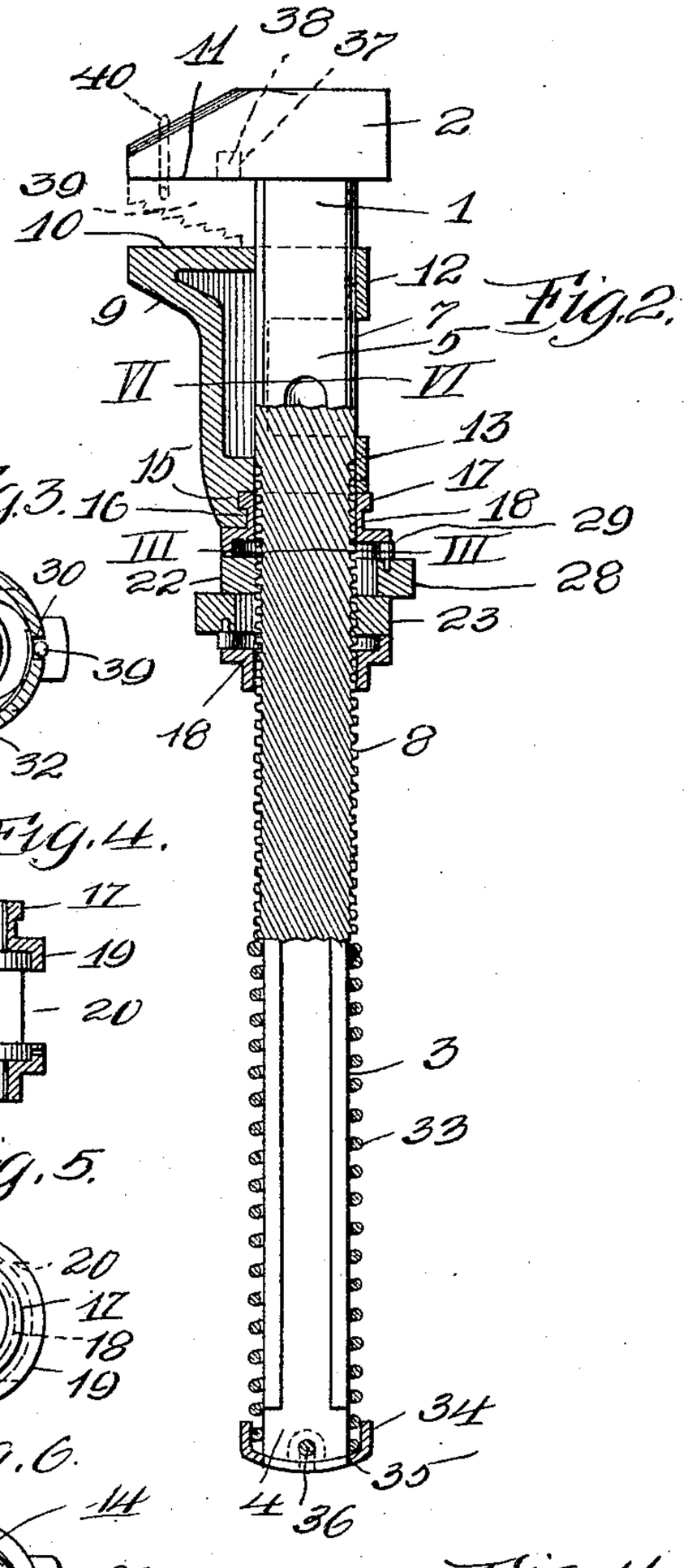


Fig. 2.

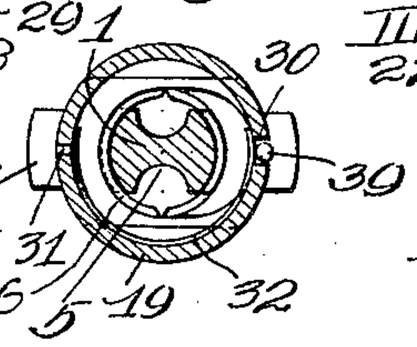


Fig. 3.

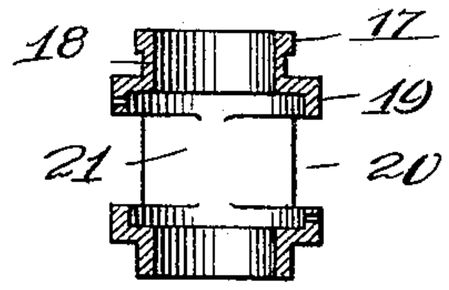


Fig. 4.

Fig. 5.

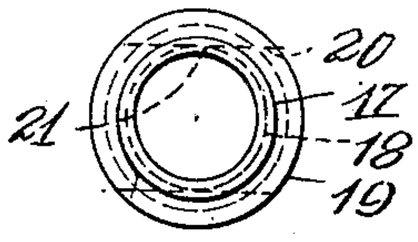
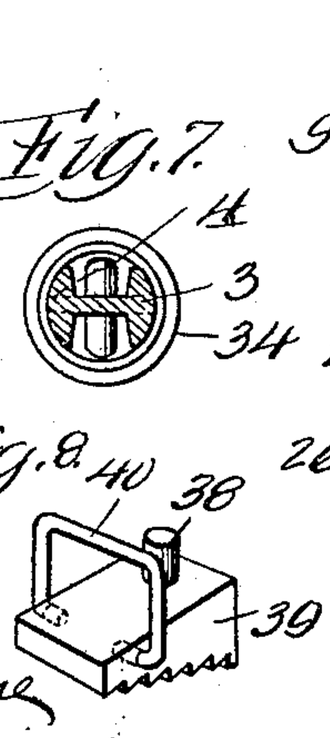


Fig. 6.

Fig. 7.

Fig. 8.



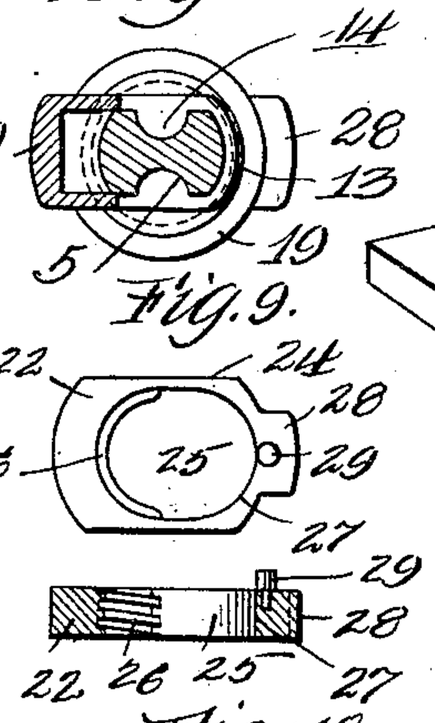


Fig. 9.

Fig. 10.

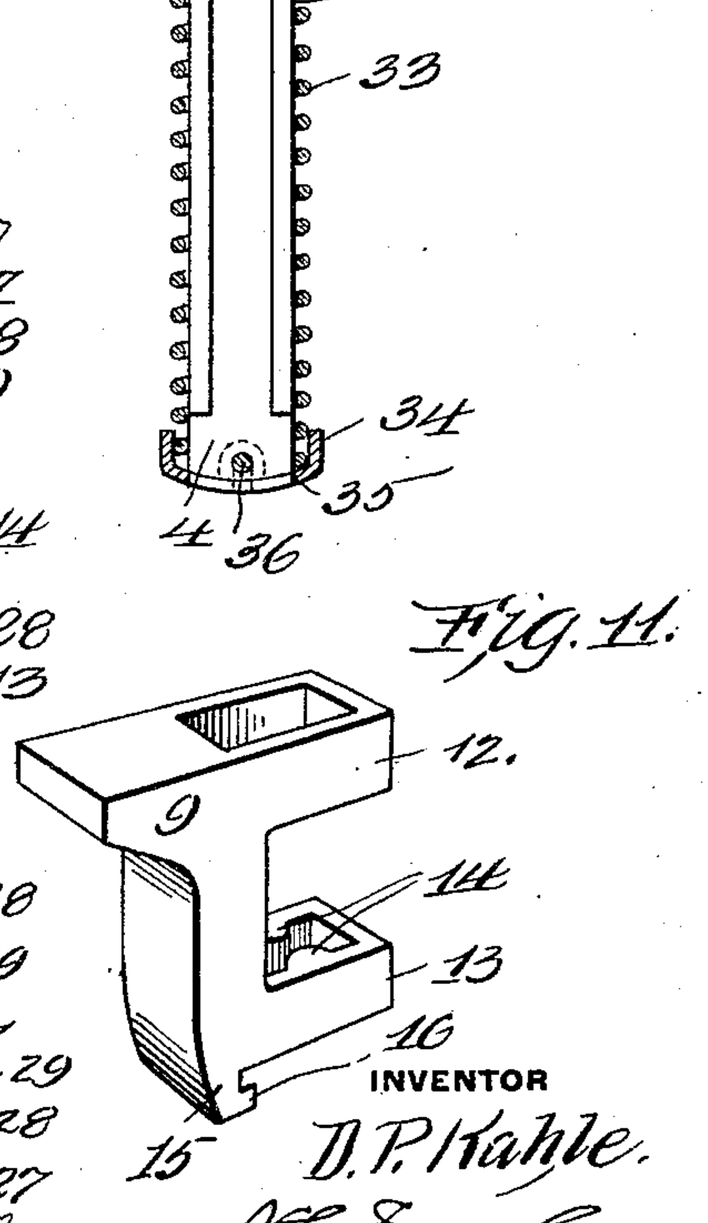


Fig. 11.

WITNESSES

Samuel Payne

R. A. Butler

INVENTOR

D. P. Kahle.

by A. C. Ewing & Co.

Attorneys.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

DORSEY P. KAHLE, OF VENUS, PENNSYLVANIA.

WRENCH.

999,034. Specification of Letters Patent. Patented July 25, 1911.

Application filed September 7, 1910, Serial No. 580,808. Renewed June 19, 1911. Serial No. 634,113.

To all whom it may concern:

Be it known that I, DORSEY P. KAHLE, a citizen of the United States, residing at Venus, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to wrenches and is an improvement upon my wrench disclosed in Patent No. 855,891 granted June 4, 1907.

The present invention aims to simplify the construction of the wrench disclosed in my former patent, and to provide a more durable and easily operated mechanism.

Furthermore, the invention aims to furnish novel means whereby the wrench can be used for gripping a cylindrical or rounded surface, as that of a pipe or tube.

The invention will be hereinafter more fully described and then specifically claimed, and reference will now be had to the drawing forming a part of this specification, wherein there is illustrated a preferred embodiment of the invention, but it is to be understood that the structural elements thereof are susceptible to such changes as fall within the scope of the appended claim.

In the drawing:—Figure 1 is a side elevation of the wrench, Fig. 2 is a vertical sectional view of the same, Fig. 3 is a horizontal sectional view taken on the line III—III of Fig. 2, Fig. 4 is a vertical sectional view of a detached rotatable sleeve forming part of the wrench, Fig. 5 is a plan of the same, Fig. 6 is a horizontal sectional view taken on the line VI—VI of Fig. 2, Fig. 7 is a horizontal sectional view taken on the line VII—VII of Fig. 1, Fig. 8 is a perspective view of a detached pipe gripping block designed for use in connection with the wrench, Fig. 9 is a plan of a detached shiftable locking washer, Fig. 10 is a cross sectional view of the same, and Fig. 11 is a perspective view of a detached movable jaw.

A wrench in accordance with the present invention consists of a shank 1 having the one end thereof provided with an integral or fixed jaw 2 and its other end thereof reduced, as at 3 and terminating in a web 4. The shank 1 is provided with two diametrically opposed flat surfaces 5 having longitudinally disposed guide grooves 6 formed therein extending from a point removed from the jaw 2 to the web 4 of the shank 1, that portion of the grooves 6 entering the reduced portion 3 being of greater depth than the remainder of said grooves, as best shown in Fig. 7 of the drawing, the reduction reducing the weight of the shank, consequently the cost of production. The front and rear faces of the shank 1 are rounded, as at 7 and these rounded faces are threaded for a portion of their length, as at 8.

Slidably mounted upon the shank 1 is an adjustable jaw 9 having a gripping surface 10 coöperating with the gripping surface 11 of the fixed jaw 2 in gripping flat surfaces or the facets of a nut. The jaw 9 is provided with straps 12 and 13 embracing the shank 1 and slidably holding said jaw upon the shank. The inner sides of the strap 13 is provided with inwardly projecting lugs 14 adapted to engage in the groves 6 of the shank 1 and guide the jaw 9 and prevent its rotation upon the shank 1. The strap 13 is furthermore provided with a depending lug 15 having a semi-circular lip 16. The lip 16 is adapted to engage beneath a collar 17 carried by the upper end of a sleeve 18 rotatably mounted upon the shank 1, said sleeve having a central enlarged portion 19 with diametrically opposed sides thereof cut away to provide openings 20, the removal of the sides of said sleeve providing diametrically opposed flat surfaces 20.

In the openings 21 of the sleeve 18 are located shiftable washers 22 and 23, said washers having diametrically opposed flattened faces 24 movably engaging the faces 21 of the sleeve 18. Each washer has one side of the opening 25 thereof provided with threads 26 to engage the threads 8 upon one side of the shank. The opening 25 is enlarged upon that side opposite the threads 26, as at 28 and one end of each washer is provided with a protuberance 28 having a pin or lug 29, the pin of the washer 22 extending upwardly and the pin of the washer 23 extending downwardly, these washers being reversely arranged within the sleeve 18, whereby the threads of one washer will engage one of the threaded sides of the shank 1 and the threads of the other washer the opposite threaded side of the shank 1. The pins 29 of the washers 22 and 23 engage in slots 30 provided therefor in the central enlarged portion 19 of the sleeve 18, these pins allowing the washers to be shifted within the sleeve.

Fixed in the central enlarged portions 19 of the sleeve 18, by rivets or fastening means 31 are band springs 32 extending to the opposite sides of the enlargements and engaging the pins 29, forcing the pins outwardly and consequently retaining the teeth 26 of the washers 22 and 23 in engagement with the teeth 8 of the shank 1.

To shift the jaw 9 upon the shank 1, it is only necessary to press inwardly upon the protruding edges of the washers 22 and 23 until the protruding edge of the washer 23 alines with the protrudng edge of the washer 22. The openings 25 of the washers will register and allow the jaw to be shifted. When the washers are released, the springs 32 immediately return the washers to their normal position. A minute adjustment can then be obtained by rotating the sleeve 18.

The lower reduced end of the shank 1 is provided with a coiled wire handle 33, retained thereon by a cap 34, the cap having a slot 35 to receive the web 4 of the shank 1. A staple or pin 36 is then arranged transversely of the cap and the web 4 to retain the cap in position.

The fixed or stationary jaw 2 can have the gripping surface 11 thereof provided with a recess 37 to receive a pin 38 carried by a pipe gripping block 39, the block being retained in engagement with the jaw by a yoke or link 40.

What I claim is:—

A wrench comprising a pair of jaws, the working face of one jaw provided with a recess, a grip block positioned against said recessed jaw and provided with a pin extending into said recess, and a yoke carried by said block and engaging over said recessed jaw whereby the block is coupled to said recessed jaw.

In testimony whereof I affix my signature in the presence of two witnesses.

DORSEY P. KAHLE.

Witnesses:
KARL H. BUTLER,
EVA A. MILNE.