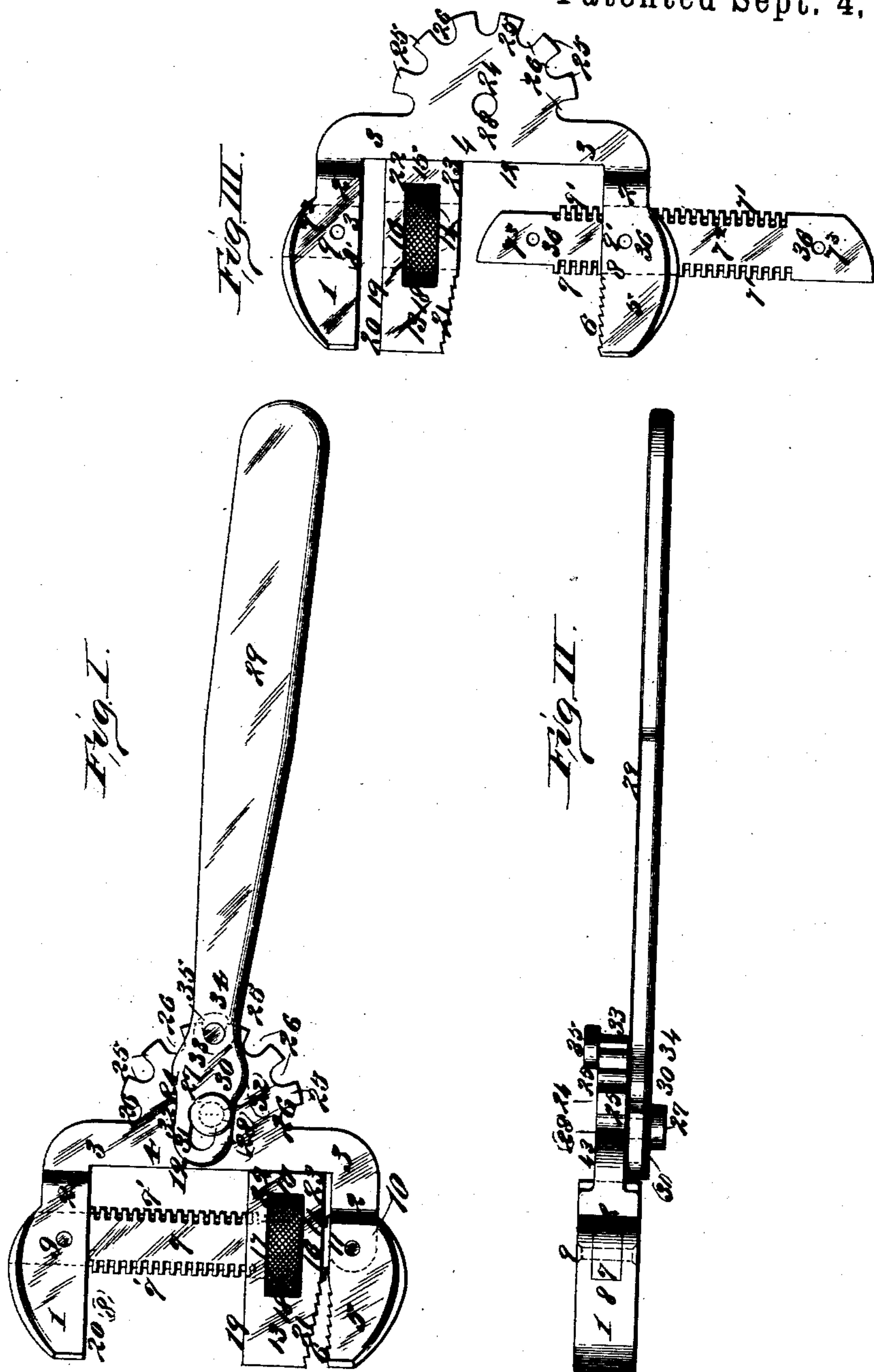


(No Model.)

S. M. FRIEDE.  
COMBINED MONKEY AND PIPE RATCHET WRENCH.  
No. 525,684. Patented Sept. 4, 1894.



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# UNITED STATES PATENT OFFICE.

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## COMBINED MONKEY AND PIPE-RATCHET WRENCH.

SPECIFICATION forming part of Letters Patent No. 525,684, dated September 4, 1894.

Application filed January 2, 1894. Serial No. 495,326. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL M. FRIEDE, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in a Combined Monkey and Pipe-Ratchet Wrench, of which the following is a specification.

This invention relates to a combined monkey and pipe ratchet wrench in which two outer grip jaws are mounted on a bail shaped head frame, one of said jaws having a straight grip face and the other a ratchet grip face, and an intervening jaw which travels on a screw that couples from one outer jaw to the other has a ratchet face on one side that corresponds and works in conjunction with the outer ratchet faced jaw and a smooth face on the other side that corresponds and works in conjunction with the outer straight face jaw, and said movable combination jaw has an extension square faced heel that effects a loose brace hold against the straight edge of the bail shaped frame that holds the outer jaws, and thus said movable jaw maintains its brace hold when the grip is enforced; and the invention consists in features of novelty hereinafter fully described and pointed out in the claims.

Figure I is a side view of the combination wrench. Fig. II is an upper edge view of the same, and Fig. III is a side view of a modification in which is shown the outer wrench jaws and the spur-gear plate and frame formed integral, and the flat screw bar that when set up carries the adjustable jaw, insertible in the outer jaw to which it is attachable by rivets.

Referring to the drawings: 1 represents the smooth square faced outer jaw of the wrench with which are integral the arms 2 and coupling bar 3 of the bail shaped frame 4 that carries the wrench jaws.

5 represents the pipe grip outer jaw of said wrench and 6 is the ratchet grip square face of said jaw, from which jaw integrally projects the flat sided coupling and carrier screw stem 7 with its projecting edge screws 7', the far end of which stem is secured in the socket seat 8 in the aforesaid smooth faced outer jaw 1 by the rivet 9. The outer arm 2 of the bail shaped frame 4 is secured

in the socket seat 10 by the rivet 11 and 12 is the straight presentation face of said bail shaped frame 4.

13 represents the combination traveler-jaw, the holder slot 14 of which travels on said flattened screw stem 7, and 15 is an operator wheel that runs in the cross-slot 16 of said traveler-jaw and the internal screw 17 of which runs on said screw stem 7, and thus as the thumb of the operator is worked on the milled periphery 18 of said operator screw wheel, the said combination traveler jaw 13, is made to respectively travel to bring its square straight face 19 to the grip distance required in conjunction with the square straight face 20 of the outer jaw 1, if the monkey wrench is in use; or if the pipe ratchet wrench is in use, then to bring the bevel ratchet face 21 of said movable jaw into its right relative conjunctive position, with the ratchet grip face 6 of the pipe grip outer jaw 5, the effective grip of the pipe is thus secured.

22 represents the extension heel of said combination monkey and pipe wrench adjustable jaw, the square contact face 23 of which heel as it travels runs in loose contact with the straight presentation face 12 of the bail shaped frame 4, and thus is brace held to its grip hold as a monkey wrench on the one hand and as a ratchet pipe wrench on the other hand, as said movable combination jaw travels respectively either to its monkey wrench hold or to its pipe ratchet hold.

24 represents a semi-circular cog or spur edge geared plate, that extends integrally rearward from said bail shaped frame 4, and round the periphery of the same is a series of cog geared spurs 25, with intervening curve journal bearing spaces 26.

27 represents a stem holder lock-bolt the fast end of which is secured in its perforate seat 28, by being there riveted.

29 represents the operative lever or handle, that works the wrench, the commander head 30 of which handle is provided with an inverted T slot 31, in which works said holder lock bolt 27. The flat projecting head 36 of said bolt 27, overlies the flat surface face of said commander head 30 of the handle, and thus holds and braces said handle secure y



to its work, and as by the movement of said commander head of the handle the bolt 27 is respectively brought into one or the other of the terminal wings of the inverted T head 32 of said slot 31 it locks in its respective terminal hold.

33 represents a key-pin, that is firmly screw-seated or riveted at 34 in and projects laterally from the flat conjunctive side of the handle 29, and 35 is the flat holder head of the key-pin, which as said key-pin journals in that one of said curved journal-bearing spaces 26 in which it is meanwhile seated said flat head 35 maintains a free tension hold of the cog geared plate 24 to prevent lateral digression of said handle from its true working movement.

In Fig. III is shown a modification in which the outer jaws are both formed integral with the bail shaped frame 4 and with the spur geared plate 24, and in which the flattened perforate ends 73 of the coupling screw stem 72 having like projecting edge screws 7' to the coupling stems of the preferred form heretofore described, and said perforate ends 73 of said flattened screw stem are secured in their socket seats 8' in said outer jaws by the rivets 9', that are conjointly seated in the perforations 36 in said jaws and screw stem.

The operation of this combination device has been pretty fully outlined throughout the introductory description, but it may be further stated that with many skilled mechanics who require the use of a variety of monkey and pipe ratchet and other wrenches of diverse capacity, this invention is to provide a single tool that is alike able for the several requirements and therein rests in some measure at least the novelty of the invention.

The action of the spur gear attachment and working of the handle and its adjustable lock geared attachment in combination with the journal action of the key-pin in the curve journaled slots to facilitate the change of adjustment in the closing and opening of the grip jaws, have been generally described in the introduction of the several parts and for further specification of said parts I refer to the descriptive specifications of application on my "compound monkey wrench," Serial No. 490,066, filed November 6, 1893, and "combined pipe ratchet and monkey wrenches," Serial No. 493,941, filed December 18, 1893; in combination with which in this application I have shown and described a respective smooth faced outer monkey-wrench grip jaw 1, connected by a flat coupling screw 7, with an outer ratchet face grip jaw, an intervening combined smooth face monkey grip jaw on one side facing its outer like jaw, and with a ratchet grip face on the other side facing its like outer jaw, said intervening jaw being adjustable on said flat

screw as shown and described to work in conjunction with its like jaws on either hand as required to form respectively a monkey wrench or pipe ratchet wrench as the case may be, and being adjustable to various capacities in its closure, by its friction milled operating traveler wheel 15.

I claim as my invention—

1. In a combined monkey and pipe ratchet wrench, the combination of the coupling screw 7, the smooth faced monkey jaw 1, mounted on one end of said screw, the ratchet faced jaw 5, mounted on the other end of said screw, and the intervening traveler jaw 13 having the smooth, straight face 19, and the bevel ratchet face 21 screw mounted on said coupling screw; substantially as described.

2. In a combined monkey and pipe ratchet wrench, the combination of the flat coupling screw 7, the monkey wrench jaw 1, and the ratchet pipe jaw 5 mounted on the extremities of said coupling screw, the adjustable combined monkey and pipe ratchet jaw 13, provided with the holder slot 14, and the cross slot 16, and the operator wheel 15, screw mounted on said coupling screw 7; substantially as described.

3. In a combined monkey and pipe ratchet wrench, the combination of the bail shaped frame 4, having the straight presentation face 12, the smooth faced outer jaw, the pipe grip outer ratchet face jaw, the flat coupling carrier screw-bar, the combination smooth face and ratchet face traveler jaw mounted on said flat screw bar, said traveler jaw provided with the holder slot 14, and the cross-slot 16, and having the extension heel 22, with the square loose contact brace face 23, and the operator wheel 15, with the milled friction touch periphery, said wheel screw mounted on said coupling screw 7; substantially as described.

4. In a combined monkey and pipe ratchet wrench, the combination of the bail shaped frame 4, having the straight presentation face 12, the outer respectively smooth and ratchet faced jaws, the flat coupler screw bar 7, the combination smooth and ratchet faced traveler jaw 13 mounted on said coupler screw, said jaw having the extension heel 22, with the square brace face 23, the semi-circular spur geared plate 24, having the cog geared spurs 25, provided with the intervening curved journal bearing spaces 26, the stem holder lock-bolt 27, having the flat holder head 36, the operative handle 29, having the commander head 30, provided with the T lock-slot 31, the key pin 33, and the flat holder head 35; substantially as described.

SAMUEL M. FRIEDE.

In presence of—

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