

J. A. HEMSLEY.
WRENCH.
APPLICATION FILED MAY 22, 1909.

935,499.

Patented Sept. 28, 1909.

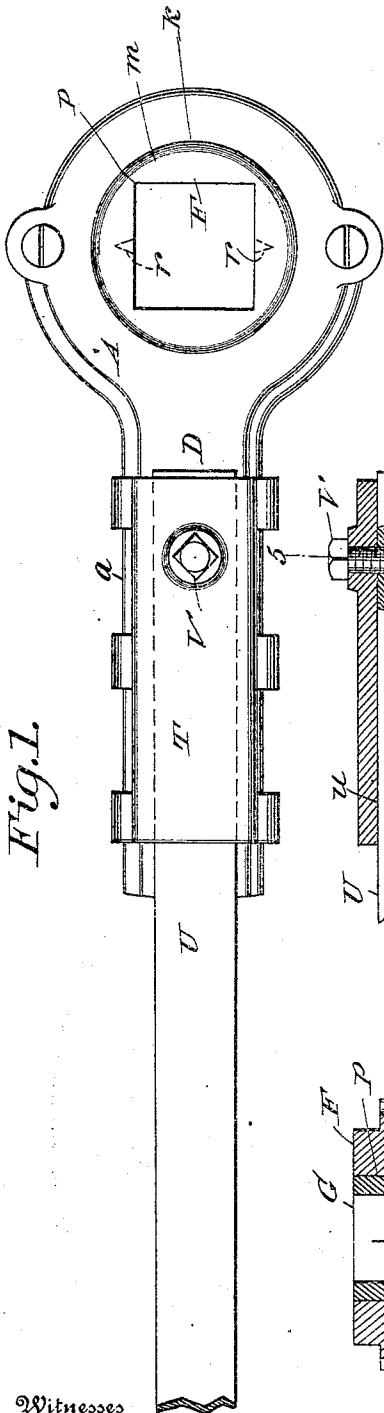


Fig. 1.

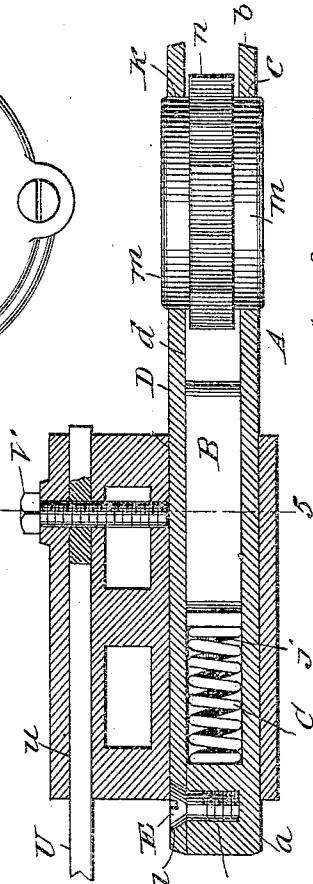


Fig. 2.

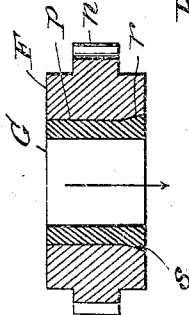


Fig. 4.

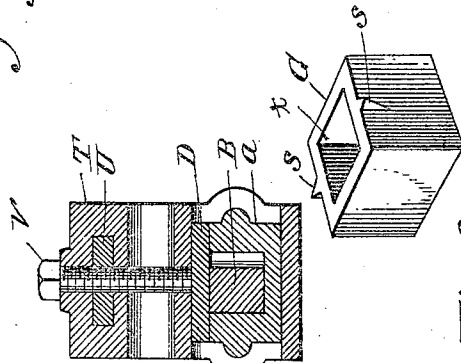


Fig. 5.

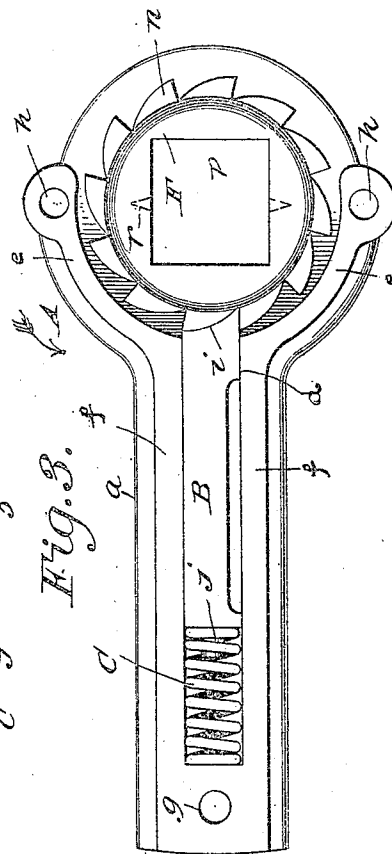


Fig. 3.

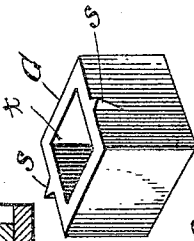


Fig. 6.

Witnesses

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WRENCH.

935,499.

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To all whom it may concern:

Be it known that I, JOSEPH A. HEMSLEY, a citizen of the United States, residing at Trenton, in the county of Mercer and State of New Jersey, have invented new and useful Improvements in Wrenches, of which the following is a specification.

My invention relates to wrenches; and it has for its object to provide a wrench adapted especially for starting the unwinding of the shafts of coal cars when it is desired to dump the same, and one embodying means whereby it may be used on shaft ends of various sizes in cross-section, and constructed in such a manner that the operation of starting the unwinding of a shaft is not attended by danger to any one of the attendants.

With the foregoing in mind the invention will be fully understood from the following description and claim when the same are read in connection with the drawings, accompanying and forming part of this specification, in which:

Figure 1 is a broken elevation illustrating one side of my novel coal car wrench. Fig. 2 is a view partly in elevation and partly in section, taken at a right angle to Fig. 1. Fig. 3 is a detail view illustrating the wrench with the detachable plate thereof removed in order to show the relative arrangement of the ratchet and the spring-pressed pawl comprised in the wrench. Fig. 4 is a detail section illustrative of the manner in which a shaft-receiver, such as shown in Fig. 6, is employed in the ratchet. Fig. 5 is a section taken on line 5-5 of Fig. 2. Fig. 6 is a perspective view of the shaft-receiver.

Similar letters designate corresponding parts in all the views of the drawings, referring to which:

A is the body of my novel wrench, which is, by preference, cast or otherwise formed in one piece, and is provided with a shank *a*. It will also be seen by reference to Figs. 2 and 3 that the said body A is provided with an enlarged end portion *b* in which is a circular aperture *c*, a longitudinal central channel *d*, extending rearwardly from the said enlarged portion *b*, flanges *e* extending in a curvilinear manner forwardly from the forward ends of the side walls *f* of the channel *d*, a threaded aperture *g*, disposed in rear of the channel *d*, and threaded apertures *h*, formed in the forward portions of the flanges *e*.

In the channel *d* of the body A is arranged an endwise movable pawl B, having a beveled forward end *i* and a reduced tail-piece *j*, and back of the said pawl is arranged a coiled spring C which surrounds the tail-piece *j* and is interposed between the pawl and the end wall at the rear of the channel *d*, and has for its office to yieldingly press the pawl forwardly for a purpose presently set forth.

In addition to the elements thus far enumerated, my novel wrench comprises a removable plate D having a circular aperture *k* arranged coincident with the circular aperture *c* in the body portion *b*, and also having apertures such as *l* in Fig. 2, designed to be registered with the threaded apertures *g* and *h* of the body A. Thus it will be manifested that the plate D may be detachably connected with the body A through the medium of three screws like the screw E of Fig. 2, and that when necessity demands the said plate D may be expeditiously and easily removed to afford access to the working parts of the wrench.

The coincident apertures *c* and *k* in the body A and plate D are designed to receive the trunnions *m* of the ratchet F, the teeth *n* of which are disposed between the body portion *b* and the plate D, and are opposed to the beveled end *i* of pawl B, after the manner best shown in Fig. 3. In the ratchet F and extending entirely therethrough is an opening *p* of square form in cross-section, and in opposite walls of the said opening *p* and at one end thereof are formed seats *r*, Figs. 1 and 5, which seats *r* are tapered inwardly from one face of the ratchet as illustrated.

As shown in Figs. 1, 3 and 5, the opening *p* in the ratchet F is adapted to receive the largest shaft end extant, and the seats *r* in opposite walls of the said opening *p* are provided to receive the tapered protuberances *s* on opposite sides of a shaft-receiver G, which shaft-receiver G is designed to be used in the ratchet F when the wrench is to be applied to a shaft end of smaller size in cross-section than the opening *p* in the ratchet. At this point I would have it understood that while I have shown but one shaft-receiver G, my invention contemplates the provision of a number of the said shaft-receivers having openings *t* of various sizes in cross-section, and also contemplates the interchangeable employment of the said

shaft-receivers in the ratchet F as occasion demands.

As will be readily understood by reference to Fig. 5, each of the shaft-receivers G employed is of a length corresponding to the thickness of the ratchet F so as to engage the angular end portion of a coal car shaft throughout the length of the said angular end portion, and the office of the tapered protuberances *s* on each shaft-receiver is to prevent endwise movement of their respective shaft-receiver in the ratchet F when the ratchet in which a receiver G is arranged is moved on the shaft end in the direction indicated by arrow in Fig. 5. At this point attention is directed to the important fact that the tapered protuberances *s* are designed to cooperate with the tapered seats *r* and serve the important purpose ascribed to them without entailing appreciable weakening of the ratchet F, which is obviously an important advantage.

In the practical use of my novel wrench the same is applied to the angular end of a coal car shaft, and is turned in the direction indicated by arrow in Fig. 3 so as to start the rotation of the shaft which is necessary to the dumping of the car. Subsequent to the starting of a coal car shaft in the manner described it frequently happens that the weight of the coal on the bottom sections of the car suddenly forces the said bottom sections downwardly and causes the shaft to turn in the direction indicated by arrow, with great force and rapidity. This contingency, however, will not in any way endanger the party handling my novel wrench, for it will be manifest by reference to Fig. 3, that when the shaft is forcibly and rapidly rotated by the weight of the coal as stated, the teeth of the ratchet F will ride past the beveled end of the pawl B, and will leave the handle of the wrench idle in the hands of the said party.

In addition to the practical advantages hereinbefore ascribed to my novel coal car wrench, it will be noticed that the pawl B is held against lateral movement and reinforced against lateral strain, and that the wrench is otherwise adapted to withstand the rough usage to which large tools of corresponding

character are ordinarily subjected. It will also be readily noted that the parts of the wrench may be quickly and easily assembled, and that when it is desired to gain access to the interior of the wrench, the only tool necessary is an ordinary screw-driver.

The shank *a* of the wrench body A is removably arranged in a longitudinal socket *t* of a body T that is preferably, though not necessarily, in the form of an open-work casting as shown. The said body T extends laterally from the shank *a* of the wrench body and is provided with an outer longitudinal socket *u* in which the handle U is arranged. A set screw V is threaded through the outer wall of the socket *u*, and is extended through the handle U and also through the wall between the sockets *u* and *t*, and bears against the shank *a* to retain the same in socket *t*.

It will be readily understood from the foregoing that the body T forms an offset for the handle U, and hence an operator is enabled to turn the wrench without interference from projections that frequently occur on the sides of coal cars. It will also be gathered from the foregoing that the set screw V may be loosened, and the body T withdrawn from the shank *a* of the wrench body A when it is desired to use another wrench in combination with the body T.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:

The combination of a wrench body having a shank, a body having a socket receiving said shank and extending laterally from the shank and having another socket in its extended portion, a handle arranged in the second socket and offset from the shank, and a screw extending through the body and the handle and fixing the shank in the first-named socket of the body.

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

JOSEPH APPLIGATE HEMSLEY.

Witnesses:

C. A. WORTHINGTON,
F. P. ZELLEY.