No. 878,388. PATENTED FEB. 4, 1908.

A. B. HEIMANN.

PIPE WRENCH.

APPLICATION FILED NOV. 14, 1907.

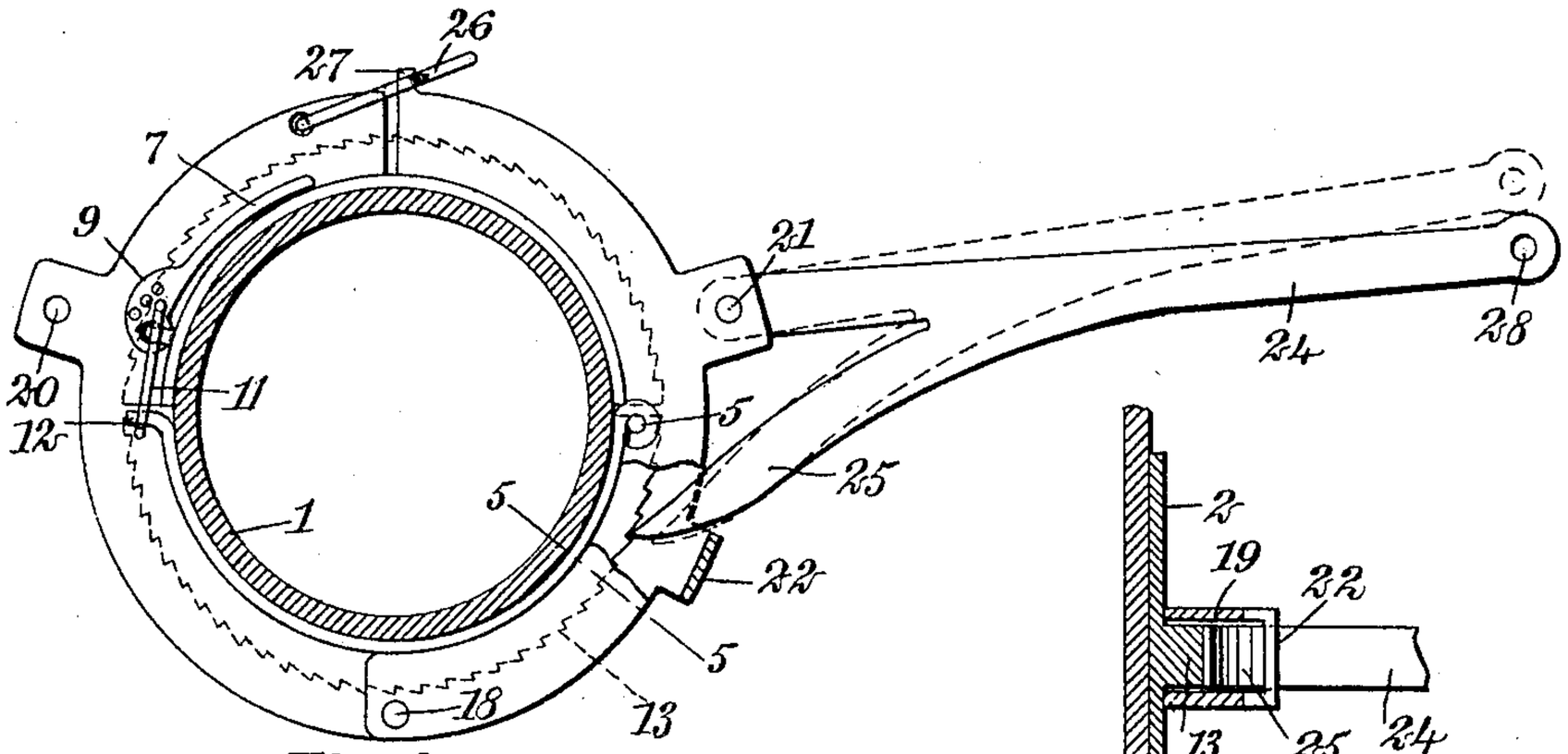

Fig. 1.

Fig. 5.

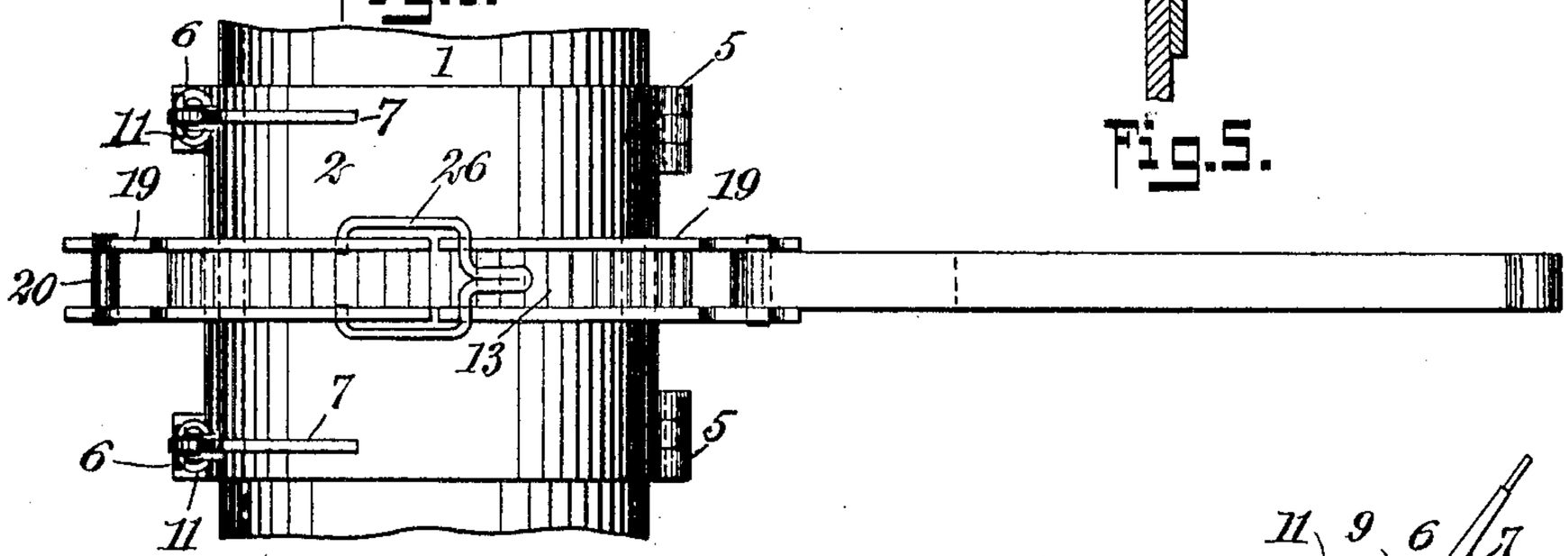

Fig. 2.

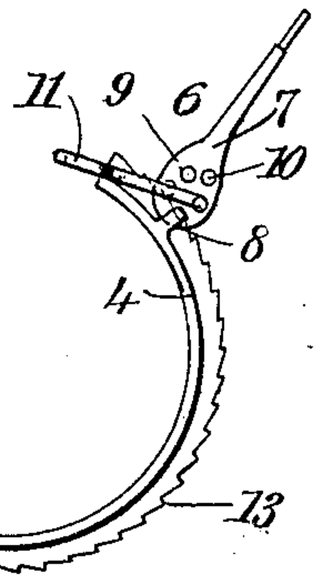

Fig. 4.

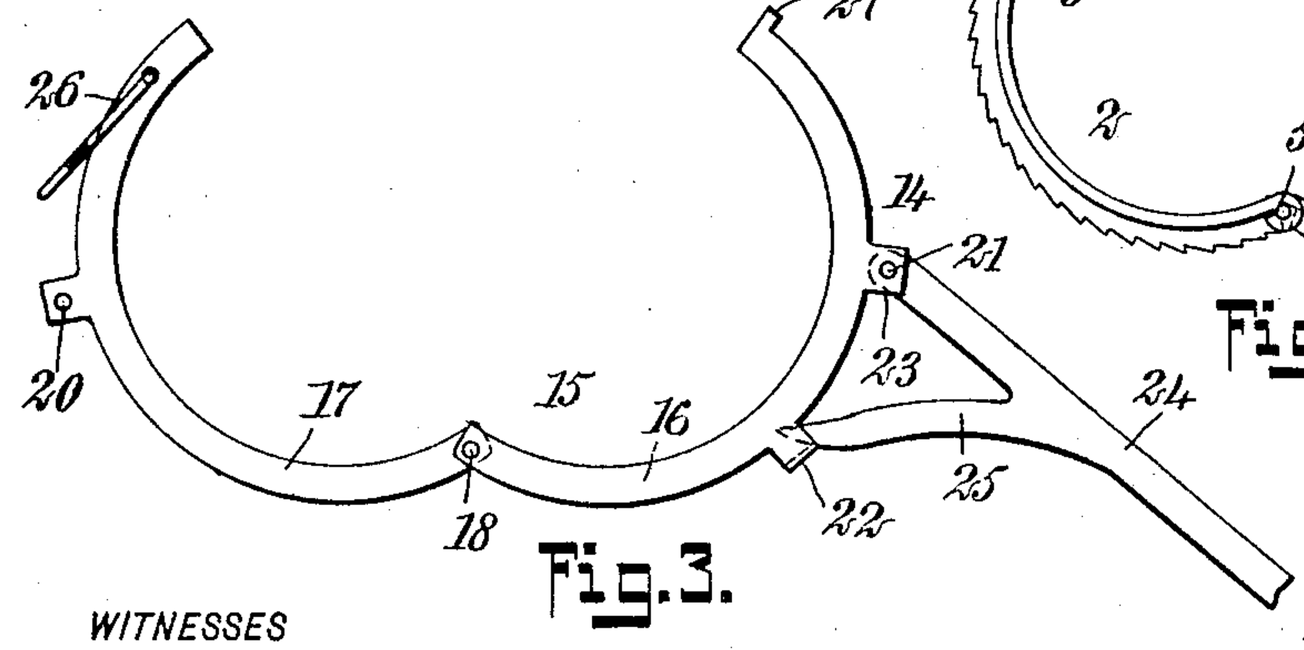

Fig. 3.

WITNESSES

Chas. A. Clark.

F. D. Emmons

INVENTOR

August B. Heimann

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

AUGUST BENARD HEIMANN, OF COALINGA, CALIFORNIA.

PIPE-WRENCH.

No. 878,388. Specification of Letters Patent. Patented Feb. 4, 1908.

Application filed November 14, 1907. Serial No. 402,101.

To all whom it may concern:

Be it known that I, AUGUST BENARD HEIMANN, a citizen of the United States, and a resident of Coalinga, in the county of Fresno and State of California, have invented a new and Improved Pipe-Wrench, of which the following is a full, clear, and exact description.

This invention relates to pipe wrenches, and is especially adapted for use in the construction of pipe wrenches of unusually large size. More specifically, the wrench is intended to be used for facilitating the laying of line pipes for oil wells, and for screwing and unscrewing the sections of the pipe casing at the well.

The object of the invention is to produce a wrench of this class which can be readily applied to the pipe or detached therefrom at any desired point, and which will operate effectively.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a cross section through a pipe to which the wrench is applied, the wrench being shown substantially in elevation but partially broken away; Fig. 2 is a plan of a short section of pipe to which the wrench is represented as applied; Fig. 3 is a side elevation of the body of the wrench, representing the same as detached from the pipe; Fig. 4 is a view similar to Fig. 3, but showing a ratchet ring constituting a part of the complete wrench; and Fig. 5 is a cross section on the line 5—5 of Fig. 1 and illustrating details of the construction of the wrench.

Referring more particularly to the parts, and especially to Figs. 1 and 2, 1 represents a short portion of a pipe to which the wrench is applied. The wrench comprises a clamping sleeve or clamp 2 illustrated in Fig. 4, the same being formed in two sections 3 and 4, which are pivotally attached together at 5 by suitable hinge connections. This sleeve is adapted to be applied to the pipe as illustrated in Fig. 2, and is adapted to be clamped securely thereupon by means of clamping devices 6 arranged at the side of the sleeve opposite to the hinges 5. Each of these clamping devices 6 comprises a lever 7 pivotally attached at 8 to the section 4 of the sleeve, and this lever has an enlarged head 9 which is provided with a plurality of openings 10. These openings 10 afford means for attaching removably a link 11, the lower end of which is adapted to be received over an outwardly projecting ear 12 formed on the section 3 of the sleeve. In applying the clamp to the pipe, the links 11 are forced over the ears 12, and the levers 7 are forced toward the right so as to bring the point of attachment of the link 11 to the lever on the right of the pivot point or fulcrum of the lever, and in this way the sleeve or clamp is firmly secured to the pipe, as illustrated in Fig. 1. By providing a plurality of openings 10 a desirable adjustability of the clamp is obtained, enabling the clamp to be tightly clasped upon pipes of slightly varying diameters.

At the middle plane of the clamping sleeve or clamp 2 a ratchet wheel 13 is formed, the teeth of which are inclined as indicated. In using the wrench, after the clamp has been applied as described, I attach the body 14 of the wrench to the pipe. This body consists of a double ring 15 formed in segments 16 and 17 which are pivotally attached together at 18. Each of the segments 16 and 17 consists of two curved bars 19. The bars which compose the segment 17 are held apart by a stud 20, while the bars 19 which compose the segment 16 are held apart by a pivot bolt 21 and a transverse strap 22. The pivot bolt 21 is arranged between outwardly projecting ears 23, and between these ears there is attached on the pivot pin 21, a lever 24. The body of this lever extends outwardly from the body of the wrench, but it is formed with an inclined finger or pawl 25 disposed under the strap 22, and the point of which is adapted to engage with the teeth of the ratchet wheel 13, as indicated most clearly in Fig. 1.

The free end of the segment 17 is provided with a link or shackle 26, the free end of which is adapted to be received over outwardly projecting lugs 27 formed on the free end of the opposite segment 16. The curved bars 19 which compose the segments 16 and 17, are disposed a sufficient distance apart to receive the ratchet wheel 13 between them, the said ratchet wheel fitting nicely into position so as to operate as a guide to hold the wrench body against longitudinal movement on the sleeve.

It should be understood that after the clamp has been applied, the wrench body is opened as indicated in Fig. 3, and applied to the clamp, whereupon it will be then locked in position by the shackle 26, and by rocking the lever 24 back and forth, the ratchet wheel can be rotated. In this way the clamp is revolved, and likewise the pipe 1 to which the clamp is rigidly attached.

The outer end of the lever 24 is provided with an eye 28 for the attachment of a cable or link so as to apply power to the lever if necessary. The transverse strap 22 which lies over the finger 25, operates as a guard to protect the finger to prevent accidents occurring at this point. It should be understood, of course, that the ring body 15 of the wrench is quite loose upon the clamp, so that it will rock or rotate freely when a force is applied to the lever. The wrench will be made of different sizes to suit the different sizes of pipes, but every wrench will have a certain adjustability by reason of the plurality of openings 10 in the head 9 of the clamping lever 7.

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

1. In a pipe wrench of the class described, in combination, a sleeve, means for clamping the same rigidly to a pipe, said sleeve being formed in sections and having a ratchet wheel formed thereupon, a ring formed in segments adapted to be applied over said ratchet wheel and engaging the sides thereof, and a lever pivotally attached to said ring and having a pawl engaging said ratchet wheel.

2. In a wrench of the class described, in combination, a clamping sleeve adapted to be rigidly secured to a pipe and having a ratchet wheel formed thereupon, said clamping sleeve having pivotally connected segments, an adjustable clamping device for locking the free ends of said segments to secure said sleeve to the pipe, a ring formed in segments pivotally attached together, said segments having each a pair of curved plates lying on opposite sides of said ratchet wheel and engaging the side faces thereof, means for locking said ring segments together, and a lever pivotally attached to said ring and having a pawl engaging said ratchet wheel.

3. In a wrench of the class described, in combination, a clamp formed in segments pivotally attached together and adapted to be attached to a pipe, one of said segments having clamping levers pivotally attached thereto, said levers having a head with a plurality of openings therein, links adapted to be attached in said openings, the segment opposite said clamping levers having means for engaging said links, a ratchet wheel formed on said clamp, a ring adapted to be applied to said ratchet wheel and rotatable freely on said clamp, and a lever carried by said ring and having a pawl engaging said ratchet wheel.

4. In a wrench of the class described, in combination, a clamping sleeve formed in pivotally connected segments and adapted to be secured rigidly to a pipe, a ratchet wheel formed on said sleeve, a ring composed of segments having double plates spaced apart to receive said ratchet wheel therebetween, a shackle carried by one of said ring segments and adapted to engage the opposite ring segment to hold said ring upon said ratchet wheel, a lever attached to said ring and having a pawl engaging said ratchet wheel, and a strap connecting the plates of the segment carrying said lever and guarding the point of said pawl.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

AUGUST BENARD HEIMANN.

Witnesses:
J. H. BROWN,
R. BARKS.