

(No Model.)

E. HARPER & P. G. METZLER.

FLANGE WRENCH.

No. 466,232.

Patented Dec. 29, 1891.

Fig. I,

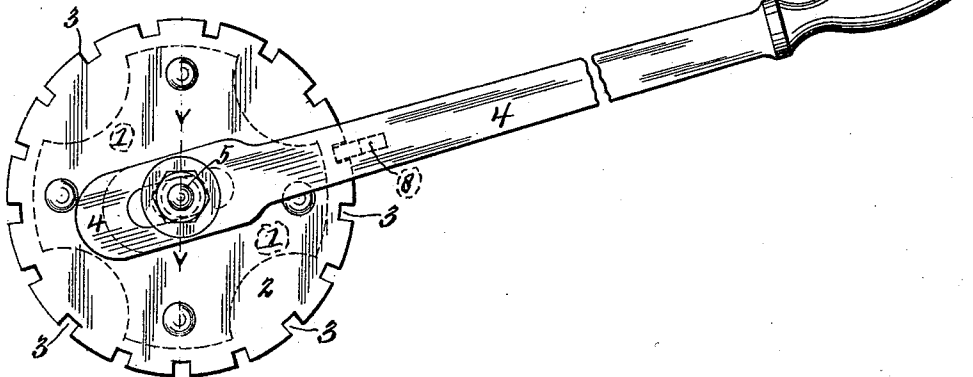


Fig. II,

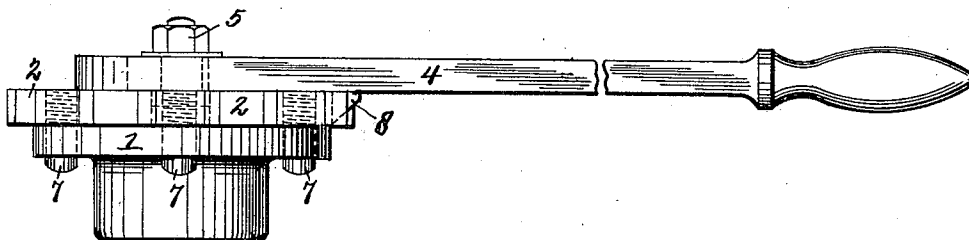


Fig. III,

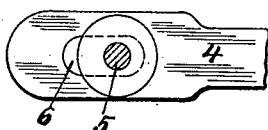


Fig. IV

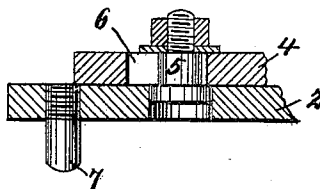
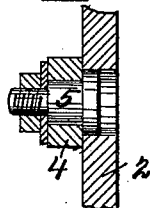


Fig. V



ATTEST

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UNITED STATES PATENT OFFICE.

EDWARD HARPER AND PAUL G. METZLER, OF LEADVILLE, COLORADO.

FLANGE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 466,232, dated December 29, 1891.

Application filed October 8, 1891. Serial No. 408,153. (No model.)

To all whom it may concern:

Be it known that we, EDWARD HARPER and PAUL G. METZLER, both of Leadville, in the county of Lake and State of Colorado, have invented a certain new and useful Improvement in Flange-Wrenches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to an improved wrench for applying unions to pipes; and our invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is an elevation illustrative of our invention. Fig. II is an edge view. Fig. III is a detail view of the inner end of the lever. Fig. IV is a section through the disk and lever, taken lengthwise of the latter; and Fig. V is a section of the disk and lever, taken crosswise of the latter on line V V, Fig. I.

The method heretofore practiced of connecting flange-unions to pipes is by placing two bolts in opposite holes in union, between which a crow-bar, pick-handle, or other implement used as a lever is placed to screw the union onto the pipe. This necessitates a constant changing of the lever and bolts, which requires two men, one holding the bolts in place and changing them as required, while the other operates the lever. When the union commences to tighten, greater force is required, and the bolts not being permanent in the union and only held in place by the thumb and fingers the great pressure brought to bear on the lever causes it to frequently slip away from the bolts, much to the discomfort of the man holding the bolts, and making the operation a long and difficult one, comparatively speaking, and in the case of breakage of steam-pipes or water-columns in mines great damage may occur by water rising in the shaft before the break can be repaired.

The object of our invention is to provide a device whereby unions can be quickly and easily applied to pipes in any position in which they may be found and requiring the attention of but one man.

Referring to the drawings, 1 represents a union or flange coupling adapted, as usual, to fit over the threaded end of a pipe and to be connected to the corresponding flange or

union on the adjacent end of another pipe or section of pipe, the unions or flanges having holes, as usual, through which the connecting-bolts are passed.

2 represents a disk having a number of notches 3 in its periphery, and to which is centrally connected a lever 4 by means of a bolt 5, the bolt fitting in a slot 6 in the inner end of the lever.

7 represents pins projecting from the face of the disk, which are presented to the face of the flange or union and which fit into the bolt-holes of the flange or union, as shown clearly in Fig. II.

8 represents a lug or projection on the lever 4 for engaging the notches 3, and which may be disengaged from the notches by pulling the lever in a direction away from the disk, which movement is permitted by the bolt 5, fitting in the slot 6 of the lever, as explained.

The operation is as follows: The flange or union being placed or started on the threaded end of the pipe, the disk with the lever connected is placed against the flange or union with the pins 7, fitted into the bolt-holes of the flange or union. The lever is then forced endwise in a direction toward the disk until the projection 8 engages one of the notches in the periphery of the disk. The lever is then given a rotary movement, which turns the disk, and through it the flange or union, causing the latter to be screwed onto the pipe. If the pipe is so located that the lever cannot be given a full revolution or turn a complete circle, the lever can be moved endwise in a direction away from the disk to disengage the lug or projection 8 from the notch in the disk which it engages, and being moved backward can be made to engage another notch by forcing it in a direction toward the disk again, and thus the lever can be operated after the manner of the lever of a ratchet wrench or drill.

A device of this kind is very inexpensive and its utility will be at once understood.

We claim as our invention—

1. In a flange or union wrench, the combination of a disk adapted to engage the flange or union and a lever connected to the disk, substantially as and for the purpose set forth.

2. In a flange or union wrench, the combi-

nation of a disk having a notched periphery and adapted to engage a flange or union, a lever having slot-and-pin connection with the disk, and a projection on the lever for engaging the notches in the disk, substantially as
5 set forth. a slot-and-pin connection with the disk and 10 having a projection 8 for engaging the notches in the disk, substantially as and for the purpose set forth.

EDWARD HARPER.
PAUL G. METZLER.

3. In a flange or union wrench, the combination of the disk 2, having pins 7 and notches 3 in its periphery, and a lever having

In presence of—
B. C. BRIGGS,
L. C. WHITE.