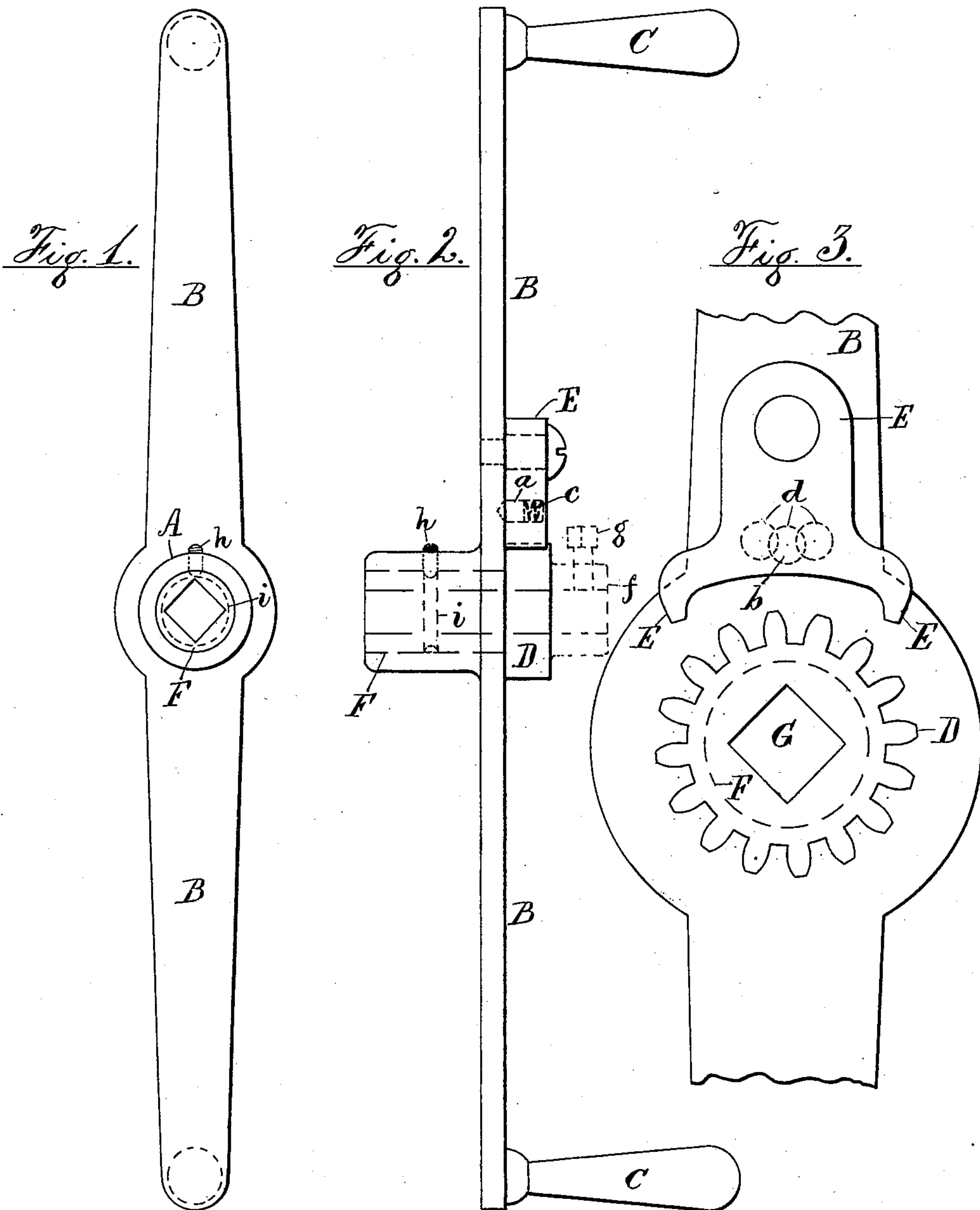


(No Model.)

G. A. OHL.
LIFTING JACK.

No. 253,753.

Patented Feb. 14, 1882.



Attest:

W. F. D. Crane,
Samuel A. Baldwin

Inventor.

Geo. A. Ohl, per
Thos. S. Crane, Atty.

UNITED STATES PATENT OFFICE.

GEORGE A. OHL, OF NEWARK, NEW JERSEY.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 253,753, dated February 14, 1882.

Application filed November 4, 1881. (No model.)

To all whom it may concern:

Be it known that I, GEO. A. OHL, a citizen of the United States, residing in the city of Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Lifting-Jacks, fully described and represented in the following specification and the accompanying drawings forming a part of the same.

My invention relates to an improvement in lifting-jacks; and it consists in a detachable ratchet-handle of the construction herein described.

My invention was devised especially for use with Tischer's lifting-jack, patented on September 23, 1879, but is equally applicable to other lifting-jacks requiring a hand-lever, crank, and ratchet in combination.

The purpose of the invention is to combine in one fixture a two-armed lever for turning the pinion-shaft of the jack continuously in either direction, a ratchet for moving the shaft through small arcs in either direction, and a lever for operating the ratchet in substantially the same manner as the pumping-lever of a hydraulic jack.

The object of my invention is to render a screw lifting-jack as convenient and applicable for use in cramped situations as the hydraulic jack, which may be operated by a very small movement of the pumping-lever in cases where adjacent objects obstruct the vicinity. By the use of a crank, as commonly applied to the pinion-shank of a screw lifting-jack, a continuous lifting movement is easily imparted to the screw; but by the construction heretofore employed, if any adjacent object interferes with the rotary movement of the crank, the same has to be removed from the square usually formed upon the pinion-shaft and replaced in another position. Such a change enables the operator to effect another partial rotation when the crank requires again to be removed and replaced in a new position, as before. By my improvement a ratchet adapted to operate by a short movement of the crank-arm is combined with the crank in such a manner as not to interfere with the continuous rotary movement of the same when possible, but, when such movement is impossible or undesirable, arranged to be thrown readily into action and to transmit a

very limited movement of the crank-arm to the pinion-shaft, or one of more extent, if admissible.

In the drawings annexed, Figure 1 is an inside view of a double-armed crank provided with my improvements. Fig. 2 is an edge view of the same, and Fig. 3 an enlarged view of the ratchet gear and pawl as located upon the outside of the crank-eye.

A is the said eye; B B, two arms attached thereto, by which both hands can be applied thereto when using the ratchet. C C are handles affixed in the outer ends of the arms for such purpose. D is the ratchet-gear, by which the force of the hands is transmitted to the pinion-shaft of the lifting-jack, the center of the gear being formed with a square hole, G, for application to such shaft. E is a double pawl pivoted to one arm, B, and formed with two teeth, e, adapted to push the wheel D in either direction required.

To keep the pawl in contact with the desired side of the gear it may be provided with the usual conical pointed spring-plug, as shown at a, or any other arrangement of spring. The plug a is shown inserted in the body of the pawl in a socket, b, and provided with a spiral spring, c, to keep it in the required conical seat d. By this mechanism, and with three of the seats d suitably located, as shown in Fig. 3, the pawl may be set to press upon either side of the gear D, or in a central position, disengaged.

As the entire fixture is commonly removed from the jack when moving from place to place, the gear is shown connected with the crank-eye A, so as to retain its position in the latter. This is effected by forming a sleeve, F, integral with the gear, at one side of the latter, and boring the eye of the crank to fit the sleeve loosely. The crank is thus adapted to rotate freely upon the sleeve when the latter is placed upon the square shaft to which the movement is transmitted, or to turn the sleeve continuously with the shaft when the crank is turned all the way around in lifting the screw.

To secure the gear and crank upon the shaft when in use a hub, f, may be provided upon the outside of the gear and fitted with a set-screw, g, or the device operated without securing, and thus be removed with more facility.

To prevent the sleeve from pulling out of the

eye A the latter may be provided with a pin, *h*, adapted to fit in an annular groove, *i*, formed in the outside of the sleeve within the eye.

By the construction described it is obvious
5 that the pawl may be set in the teeth upon either side of the gear D and the screw moved continuously by turning the crank around. In cases where the load upon the head or foot of the jack obstructs the crank's continued move-
10 ment the latter may immediately, without any rearrangement of the parts, be operated as a ratchet, and an intermittent movement transmitted to the shaft by working the arms back and forth as far as the obstacle permits. When
15 thus operated the double arm B B adds materially to the power of the operator, as both hands can be employed at once. When a load has been raised by such ratchet movement and it is desired to lower it, the pawl can be read-
20 ily reversed, and the same movement of the arms effects the lowering.

If desired, one of the arms may be fitted into a socket upon the eye A, and thus made removable for certain emergencies.

25 The sleeve F may, if preferred, be secured in the eye A by projecting upon the inner side and having a collar applied to the projecting part. The pawl and ratchet-gear may also be applied to the shaft in some other way than by
30 a square, as by a key and key-seat or a set-screw, or in any way so as to be removed at pleasure for transportation.

I am aware that various feeding devices have been constructed upon a principle similar to mine and applied to machine-tools of different
35 kinds; but in such devices there is no need of the two-armed lever, which forms a prominent feature of my construction. I do not therefore claim a combination of a pawl and ratchet broadly with a handle for working the same,
40 but only the special construction described herein for convenient application to and removal from a screw-jack; and

I therefore claim my invention as follows:

The removable handle for portable lifting-
45 jacks, constructed as herein shown and described, with ratchet-gear D, having sleeve F, provided with square hole G, and the two-armed lever B, fitted to turn freely upon said sleeve, and provided with the double pawl E, arranged
50 to push the gear in either direction, the sleeve being secured in the gear by pin or collar, and the whole operating substantially as herein set forth.

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

GEO. A. OHL.

Witnesses:

WM. F. D. CRANE,
THOS. S. CRANE.