

O. E. BERG.
GASKET SCRAPER.
APPLICATION FILED NOV. 26, 1918.

1,289,615.

Patented Dec. 31, 1918.

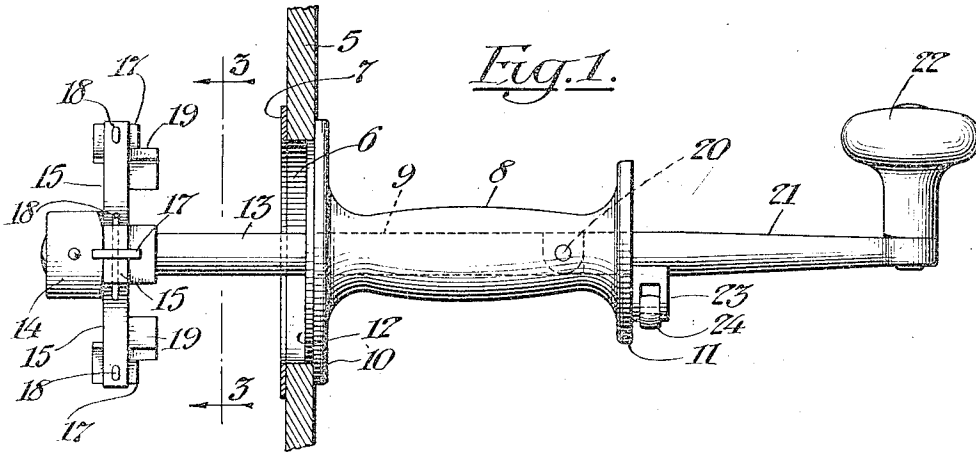
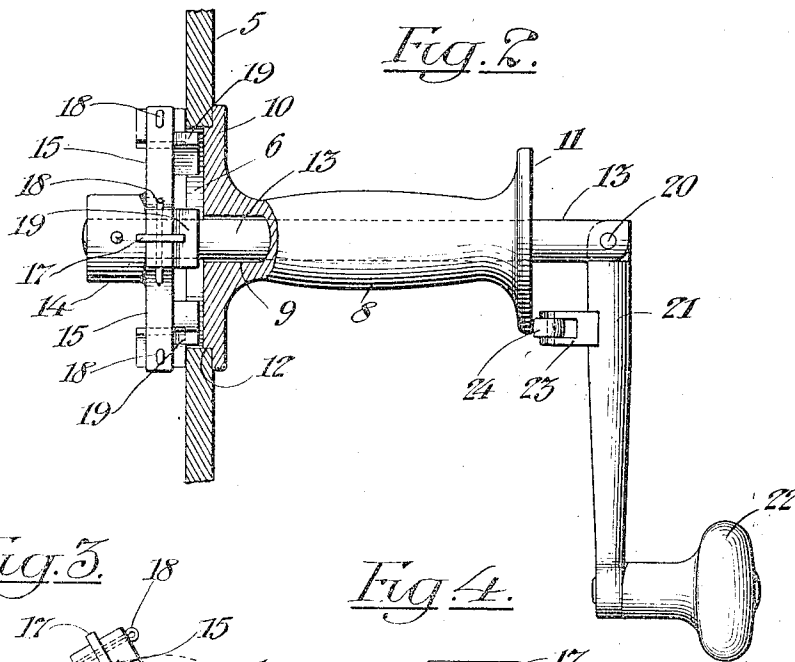
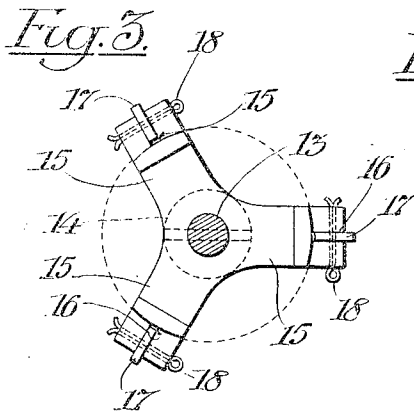
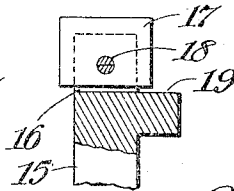


Fig. 4.



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GASKET-SCRAPER.

1,289,615.

Specification of Letters Patent.

Patented Dec. 31, 1918.

Application filed March 26, 1918. Serial No. 224,734.

To all whom it may concern:

Be it known that I, OSCAR E. BERG, a citizen of the United States, and resident of the city of New York, in the county of Bronx and State of New York, have invented certain new and useful Improvements in Gasket-Scrapers, of which the following is a specification.

This invention relates to means for cleaning surplus material from annular gasket-bearing surfaces on the inner walls of boiler water legs and the like; and it has for its object to provide a tool of simple and efficient construction which can be readily applied to any of the tube holes, for example, of a water leg, and then be manipulated in such a manner as to clean from the internal surface of the wall any worn out adherent gasket material, or other foreign matter, circumscribing the edge of the hole, thereby insuring a clean and unobstructed seat for the reception of a new gasket.

The invention, generally stated, comprises a body, constituting a spindle support and handle; an axial spindle therein having capacity for rotative and longitudinal movements relatively to said body; a scraper element carried by said spindle so as to be movable thereby toward and from one end of said body, and a handle section, constituting a lever-like crank, jointed on the spindle adjacent the opposite end of said body and having a fulcrum portion adapted to bear on the latter; all of which, together with various details of construction will be hereinafter described, and the precise scope of the invention then be defined in the appended claims.

In the drawings—

Figure 1 is a side elevation of a tool embodying a preferred form of my invention, showing the parts in the relative positions which they occupy when the tool is first applied to a tube hole in the wall of a water-leg or the like, said wall being in section.

Fig. 2 is a similar view showing the parts in the relative positions which they occupy when the tool is in operation.

Fig. 3 is a transverse section, as on the line 3—3 of Fig. 1.

Fig. 4 is a sectional detail showing one of the scrapers and a part of its supporting arm.

Referring to the drawings, 5 designates a

portion of a wall of a boiler member, such, for example, as the outer plate of a water leg or header in which are suitably-located tube or hand holes. In practice these holes are closed by cap members which are detachably clamped against annular gaskets on that portion of the inner surface of the plate encircling the holes, as usual. One of these holes is indicated at 6 and the annular gasket therefor at 7. When a gasket becomes impaired, the cap member is removed, the old gasket, or so much thereof as remains, is scraped off, and a new gasket is applied. The old gasket material adheres tightly to the metal, and as the clinging material is on the inner side of the plate, it has heretofore been difficult to remove the material sufficiently to insure a clean seat for the new gasket. A tool embodying the principle of my invention, however, enables the old gasket material to be rapidly and effectually removed.

In the preferred form of tool herein illustrated, 8 designates a substantially cylindrical body having an axial bore 9 and peripheral end flanges 10, 11, which body is of appropriate size and shape to enable it to be conveniently grasped and held by the user. The flange 10, which is slightly greater in diameter than the plate hole 6, is circumferentially reduced to provide a portion 12 that may be snugly applied to the hole adjacent the outer side of the plate, and the flange thus caused to bear firmly against the latter, as seen in Fig. 1. Hence the body can be accurately positioned with its bore in axial alinement with the hole.

Extending freely through the bore of the body 8, so as to have capacity for longitudinal and rotative movements therein, is a spindle 13, to that end of which adjacent the flange 10 is affixed a scraper supporting element. In the present instance this element comprises a hub 14 having three equally-spaced radial arms 15, such hub being pinned or otherwise fixedly secured to the spindle. The outer ends of the arms 15 are slotted, as at 16, for the reception of scrapers 17. Each of these scrapers preferably comprises a rectangular blade of steel which is inserted into the slotted portion of the arm and pivotally supported therein by a pin 18 so as to have capacity for limited vibratory movement, for a purpose below mentioned.

Cotter pins are preferably employed so as to facilitate the removal and replacement of the cutters, or any of them, as occasion may require. The scrapers are equidistant from
 5 the center of the spindle and are so located that when the spindle is rotated their inner vertical edges describe a circle corresponding with that of the gasket bearing surface of the plate, or substantially so.

10 The arms 15 are preferably provided adjacent the acting edges of the scrapers with shoulder portions 19 which are so disposed as to fit with nicety into the inner end of the hole 6 and thus support the cutters in proper
 15 position for engagement with the gasket material.

Jointed, as at 20, to that end of the spindle adjacent the outer flange 11, is a member 21 which may be disposed in axial alinement
 20 with the spindle and be moved longitudinally therewith within the bore of the body, as seen in Fig. 1; or when the pivoted end of the member projects outwardly of the body said member may be swung at right
 25 angles to the spindle so as to constitute a crank element whereby the spindle and its cutter blades can be manually operated, as seen in Fig. 2. On the outer end of this member is a laterally projecting knob or
 30 handle 22 to facilitate its manipulation. On one side of the member 21 is a projection 23, preferably, though not necessarily, provided with an anti-friction roller 24, which is so disposed that when the member oc-
 35 cupies the angular position shown in Fig. 2, the roller bears against the adjacent flange 11 of the body and acts thereon as a fulcrum whereby more or less leverage, as desired, can be exerted upon the crank in order to
 40 shift the spindle within predetermined limits longitudinally of the body, and accordingly move the scrapers toward or from the flange 10.

To use the device, the body 8, which constitutes not only a spindle support but also
 45 a handle, is firmly grasped in one hand of the operator. With his other hand the member 21 is swung into axial alinement with the spindle 13 and the two jointed members
 50 moved along the bore of the body until the projection 23 of the member 21 takes against the opposing flange 11. The end of the spindle carrying the scraper elements is then passed through the selected plate hole
 55 into the interior of the water leg (or other structure) until the reduced portion of the flange 10 is in registry with the hole and the adjacent marginal portion of the flange against the plate, as seen in Fig. 1. The
 60 member 21 and spindle 13 are then retracted until the scrapers bear against the gasket 7; the joint 20 thus being exteriorly of the body. The member 21 is then swung down until the laterally projecting roller 24 (or
 65 equivalent fulcrum means) bears against

the opposing face of the flange 11, as seen in Fig. 2; whereupon the crank element thus provided is rapidly rotated and inward pressure exerted on the lower end thereof. The upper end of the crank element, to-
 70 gether with the rotating spindle and its scraper blades, are thus retracted, the scrapers bearing with more or less cutting force, as desired, against the opposing gasket material. The scrapers, having ca-
 75 pacity for limited vibratory movement as above described, automatically adapt themselves to the varying surface of the gasket material and progressively act thereon until such material has been entirely removed
 80 from the plate; thus insuring a smooth and clean seat for the new gasket. This done, the crank element is swung upward to axial alinement with the spindle, and the jointed
 85 members, together with the scrapers, are moved inward to the position shown in Fig. 1, preparatory to the withdrawal of the tool from the plate hole.

It is to be understood that my invention is not limited to the details of construction
 90 herein shown and described as the same may be modified within the principle of the invention and the scope of the appended claims.

I claim—

1. A tool of the character described, comprising a body constituting a spindle support and handle, an axial spindle mounted for independent and concurrent rotative and longitudinal movements in said body, a
 100 scraper element carried by said spindle and movable thereby toward and from one end of said body, and a crank element jointed on the spindle adjacent the opposite end of said body, and having a bearing portion which
 105 may be brought into contact with said body as a lever fulcrum when the crank element is moved into angular relation to the spindle.

2. A tool of the character described, comprising a body constituting a spindle support and handle, an axial spindle mounted for independent and concurrent rotative and longitudinal movements in said body, a supporting element on one end of the spindle,
 110 a series of scrapers mounted on said element to have independent vibratory movement thereon, a crank element jointed on the other end of said spindle and having a bearing portion positioned to be brought into
 115 contact with said body as a lever fulcrum when the crank element is moved into angular relation to the spindle.

3. A tool of the character described, comprising a body, constituting a spindle support and handle, said body having a portion adapted to be seated in a plate hole and against the plate, an axial spindle mounted for independent and concurrent rotative and longitudinal movements in said body, a sup-
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porting element on one end of the spindle having bearing portions adapted to be seated in said plate hole, a series of scrapers mounted on said element to have independent vibratory movement thereon, a crank element jointed on the other end of said spindle, and having a bearing portion positioned to be brought into contact with said body as a lever fulcrum when the crank element is moved into angular relation to the spindle. 10

Signed at the city of New York, in the county of Bronx and State of New York, this 22d day of March, A. D. 1918.

OSCAR E. BERG.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."