Sept. 2, 1930. E. W. KING 1,774,752

TURBINE SPINNING TONGS

Filed Feb. 4, 1929

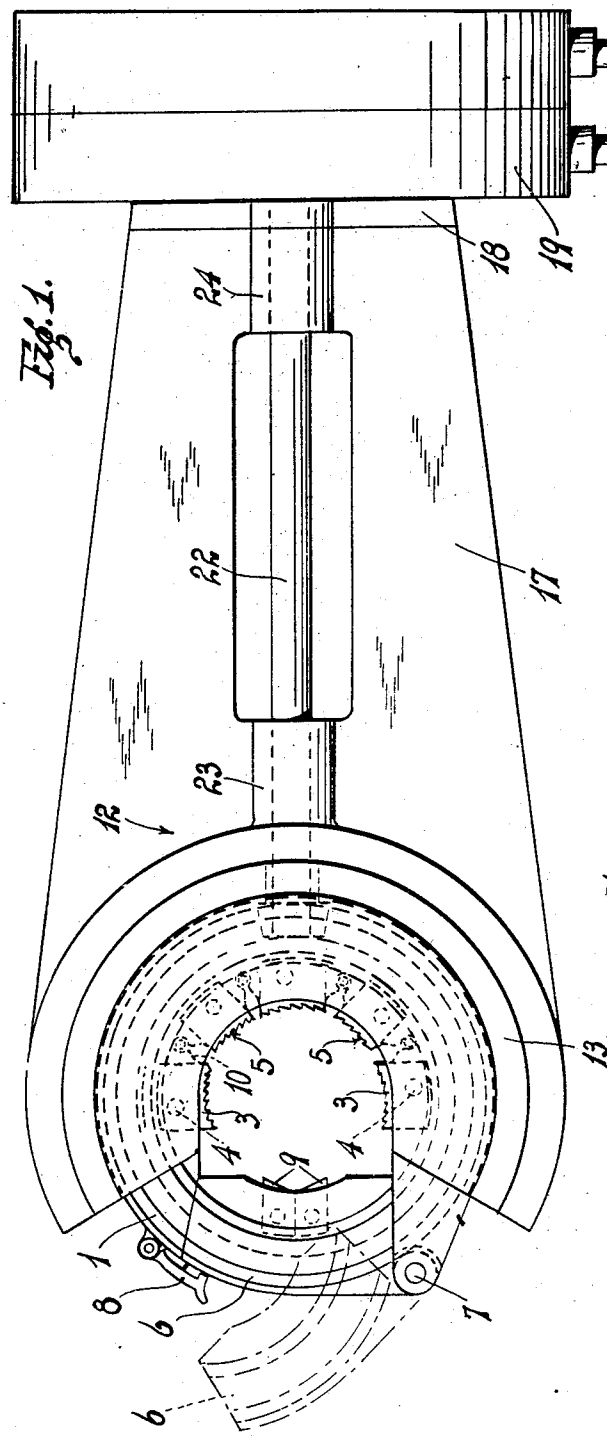


Fig. 1.

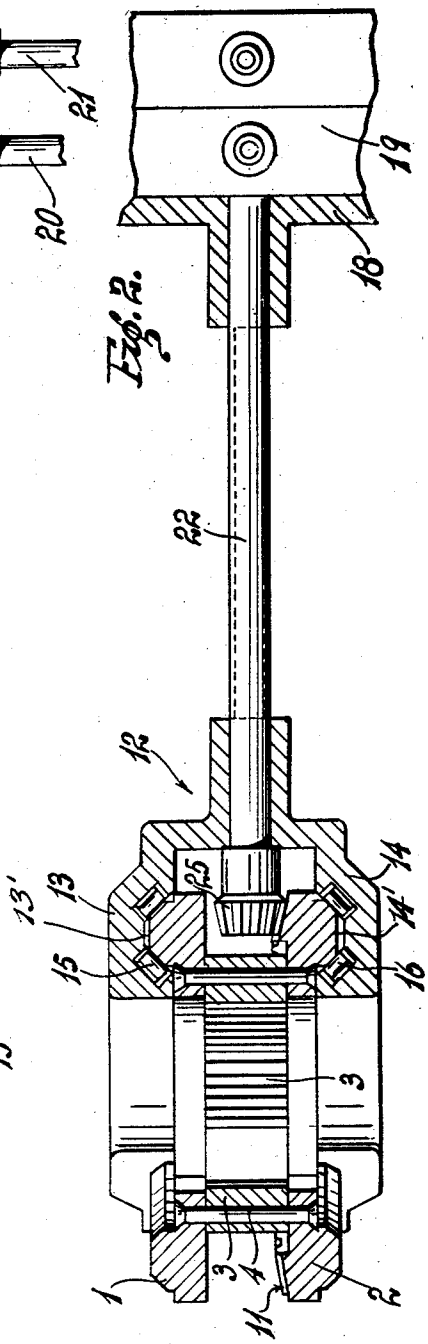


Fig. 2.

INVENTOR
ELMER W. KING.

by H. A. Druckman
ATTORNEY.

Patented Sept. 2, 1930

1,774,752

UNITED STATES PATENT OFFICE

ELMER W. KING, OF LONG BEACH, CALIFORNIA, ASSIGNOR TO DOROTHY KING, OF LONG BEACH, CALIFORNIA

TURBINE SPINNING TONGS

Application filed February 4, 1929. Serial No. 337,306.

An object of my invention is to provide a spinning tongs which may be quickly and easily secured around a pipe stand to rapidly rotate the pipe and cause it to screw into a collar.

Another object is to provide a spinning tongs operable by a fluid motor, the motor being controlled by an operator at a distance from the pipe.

Still another object is to provide a turbine spinning tongs which is quickly and easily assembled around the pipe to rotate said pipe either clock-wise or counter clock-wise.

An advantage of my spinning tongs is that the pipe or the like can be more quickly assembled or disassembled with a minimum amount of effort and with little danger to the workman.

Other objects, advantages, and features of invention may appear from the accompanying drawing, the subjoined detailed description, and the appended claims.

In the drawing,

Figure 1 is a plan view of my tongs.

Figure 2 is a fragmentary, longitudinal sectional view of the same.

Referring more particularly to the drawing, the numeral 1 indicates an upper ring and the numeral 2 a lower ring, which rings are held in spaced relation by a plurality of pivotally mounted dogs 3. Countersunk bolts 4 extend through the rings 1, 2 and through the dogs 3 thereby holding the rings and dogs in proper assembled position. The inner faces of the dogs 3 are toothed or corrugated so that they will grip the pipe. The teeth on certain of the dogs are tilted so that they will engage the pipe during clock-wise rotation of the rings and others of the dogs are toothed so that they will engage the pipe during counter clock-wise rotation of the rings. This arrangement is shown at 5.

A gate 6 is provided in each of the rings 1, 2 and is pivotally mounted on the rings, as at 7. Latches 8 hold the gates in closed position during the operation of the tongs. The latch 8 may be of any well-known construction, such as is commonly used upon elevators or similar tools.

The gates 6 are so arranged that when they are swung open the pipe, casing, or the like can readily be moved therethrough and brought into engagement with the dogs 3. A pair of dogs 9 are mounted between the gates 6 and these dogs bear against the pipe when the gate is closed. The dogs 3 are urged inwardly by suitable spring means, one type of spring being shown at 10.

A ring gear 11 is cut on the lower ring 2 by means of which the rings 1, 2 are rotated, as will be further described. The rings 1, 2 are rotatably mounted in a head 12 which comprises upper and lower arcuate bearing plates 13, 14 which plates are more than a half circle, and have recesses 13′ and 14′ respectively, formed therein to receive the rings. Anti-friction bearings 15, 16 are provided in the plates 13, 14, respectively, which bear against annular races or ribs formed on the rings 1, 2, respectively. Thus it will be seen that the rings are rotatably mounted and are securely held between the plates 13, 14. These plates do not extend entirely around the rings but are arcuate in form so that the pipe or casing can be positioned in the tongs without the necessity of gates in the plates.

A web 17 extends horizontally from the head 12 and a flange 18 is formed on the rear thereof to which the turbine casing 19 is bolted. In the casing 19 I provide two fluid turbines one of which rotates clock-wise and the other counter clock-wise. Pipes 20, 21 extend to these turbines and fluid is directed through either of these pipes by the operator who controls valves, not shown.

A shaft 22 extends from the turbines and is journaled in bearings 23, 24 on the web 17. A gear 25 is secured to the forward end of the shaft 22 and meshes with the ring gear 11. Thus when either of the turbines are operated the shaft 22 will be rotated, thus operating the rings 1, 2 through the medium of the gears 11, 25. The use and operation of my tongs will be evident from the foregoing description.

Having described my invention, I claim:

1. A pipe spinning tongs comprising a pair of separate spaced rings, a plurality of dogs mounted between said rings and extending

inwardly to engage the pipe, a gate in each of said rings, a head in which said rings are rotatably mounted, and means to rotate said rings, said head comprising rigid spaced arcuate plates integral therewith and having arcuate recesses of more than a half circle in their opposed faces, and the rings having annular ribs to engage said recesses and maintain the rings revoluble in said head.

2. A turbine spinning tongs comprising a pair of separate spaced rings, a plurality of dogs mounted between said rings, a gate in each of said rings, a head in which said rings are rotatably mounted, said head including rigid spaced upper and lower plates integral therewith, and having arcuate recesses of more than half a circle in their opposed faces, said rings having annular ribs to engage said recesses and maintain the rings revoluble in said head, anti-friction bearings in said plates against which said rings bear, a ring gear on one of said rings, a gear meshing with said ring gear, a shaft extending from said last named gear, a web extending from said head and integral therewith, said head being a flanged enlargement of the web, said shaft being journaled in enlargements on the web, a flange on the web, and a motor secured to said flange, said motor being connected to the shaft.

In testimony whereof, I affix my signature.

ELMER W. KING.