

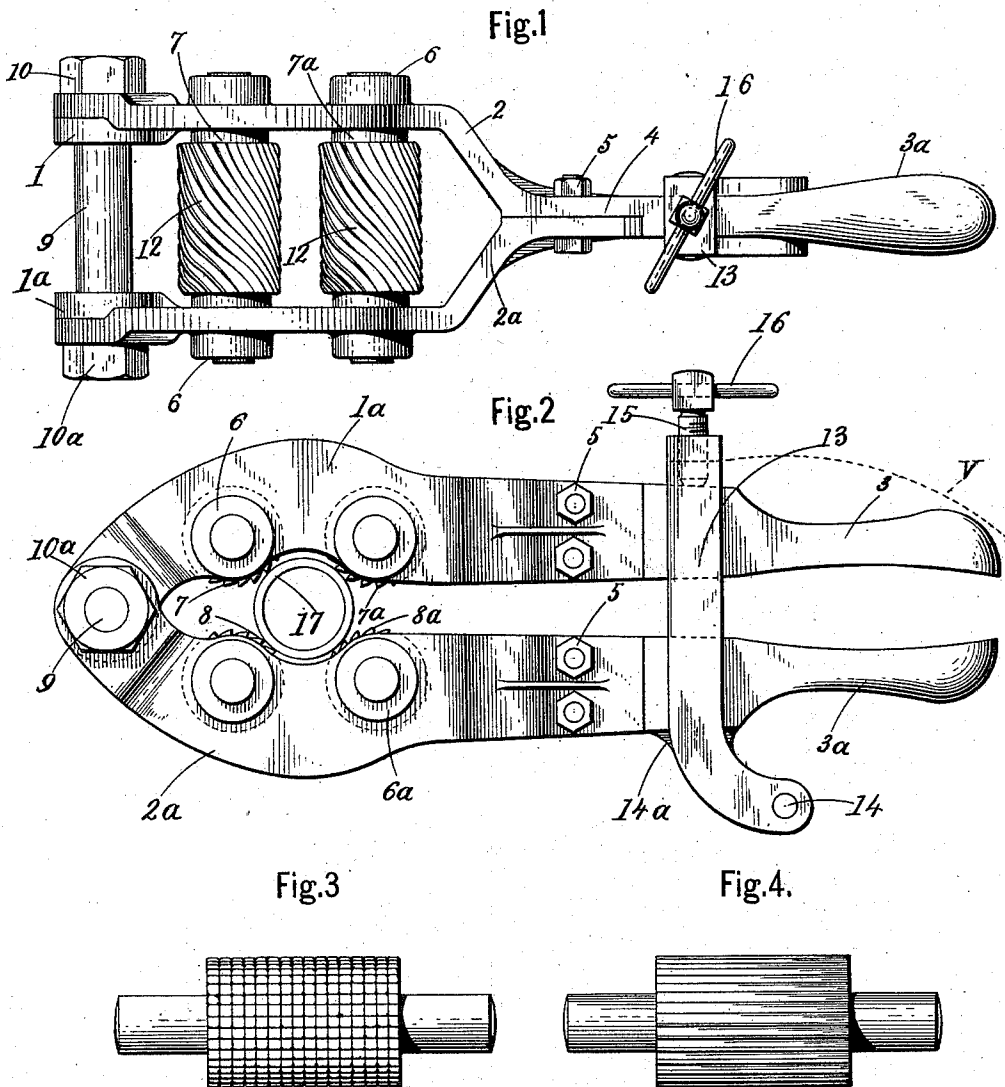
(No Model.)

F. G. BIRD.

DEVICE FOR REMOVING SCALE FROM BOILER TUBES.

No. 573,853.

Patented Dec. 29, 1896.



Witnesses.
A. Sangster.
L. M. Spong.

Frederick B. Bird. Inventor.
By *James Sangster*
Attorney.

UNITED STATES PATENT OFFICE.

FREDERICK G. BIRD, OF DUNKIRK, NEW YORK.

DEVICE FOR REMOVING SCALE FROM BOILER-TUBES.

SPECIFICATION forming part of Letters Patent No. 573,853, dated December 29, 1896.

Application filed March 25, 1896. Serial No. 584,843. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK G. BIRD, a citizen of the United States, residing at Dunkirk, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Devices for Removing Scale from Boiler-Tubes, of which the following is a specification.

My invention relates to an improved means for removing the scale from the outside of locomotive or other boiler tubes, and will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents an inverted plan view of my improved device, showing the corrugated rollers and other parts. Fig. 2 represents a side elevation of the same, showing an end view of a boiler-tube in place between the cleaning-rollers. Figs. 3 and 4 are side elevations of the scale-removing rollers, showing modified forms of corrugations on the face of the cleaning-rollers.

Referring to the drawings in detail, 1 and 2 represent the two parts composing the upper roller-frame, and 3 and 3^a the parts composing the lower roller-frame.

The parts 1 and 2 are formed in one piece or integral with the handles 3 and 3^a, and are each provided with a depressed portion 4 (see Fig. 1) on one side, (both parts 1 and 2 being alike in this respect,) in which is fitted the parts 1^a and 2^a. They are then rigidly secured in place thereon by bolts 5, so as to be removable, thereby forming a forked frame portion provided with handles 3 and 3^a and having bearings 6 and 6^a, in which are mounted rollers 7 7^a and 8 8^a and adapted to turn easily in their bearings. These forked portions are pivoted together at their ends by a pivotal cross bar or bolt 9, secured by nuts 10 and 10^a, so that by taking the device by the handles 3 and 3^a they can be opened or closed. The rollers 7 and 7^a and 8 and 8^a are each provided with grooves 12, which are preferably arranged in spiral form around the rollers, substantially as shown in Fig. 1. These corrugations may be made in any suitable form, or as in Figs. 3 and 4, but the spiral form (which may have more or less lead than that shown in the drawings) is preferred for reasons that will appear farther on.

13 represents a yoke having its lower ends secured by a cross bar or bolt 14 to a lug 14^a. At the top of the yoke is a screw 15, provided with a handle 16. The yoke 13 is adapted to swing on its pivotal pin 14 over the ends of the handles 3 and 3^a in the direction of the dotted line V, so that the device may be easily removed or attached to a boiler-tube and tightened thereon by means of the handle 16.

I have shown four corrugated cleaning or scaling rollers, but it will be readily seen that more or less can be used and the same result accomplished.

The operation of the device is as follows: A boiler-tube (17, for instance, see Fig. 2) is put into a lathe and secured therein in the well-known way. The vise having the yoke turned back is then opened out and put on the tube so that the teeth of the rollers are in contact therewith, substantially as shown in Fig. 2. The yoke is then slipped on over the handles to or about the position shown in Fig. 2 and the set-screw tightened sufficiently to take off the scale. The device being placed at the starting end of the tube and the lathe started, the lead of the corrugated teeth will cause the device to move rapidly to the opposite end of the tube, cleaning and removing the scale from the tube as it moves. The device is now removed from the tube, and the tube which has thus been perfectly cleaned is taken from the lathe and another put in its place and the process repeated.

By the above means a large number of boiler-tubes may have all the scale removed in a comparatively short time.

I am aware that corrugated rollers and means for holding them have heretofore been used for taking the scale from boiler-tubes. I therefore do not claim such broadly; but

What I do claim is—

1. In a device for taking the scale from boiler-tubes, the combination of two roller-holding frames each consisting of two parts, one part carrying a handle, the other, a removable portion secured by bolts 5, and forming one member of a pair of forked roller-holding frames, corrugated rollers mounted in suitable bearings in said frames, a pivotal pin 9, pivoting the two frames together at

the ends, a yoke pivoted to a support near the opposite end of one of the roller-frames, adapted to swing over the ends of the handles, and a hand-screw for drawing the two frames
5 toward each other for the purposes described.

2. In a device for taking the scale off from boiler-tubes, a pair of half-frame portions 1 and 2, the operating-handles being an integral part thereof, one having a tightening-
10 yoke pivoted to its under side, in combination with a pair of half-frame portions, bolts

5, for securing them to the handle-frame portions, thereby removably securing the corrugated rollers in their bearings, and a bolt 9, for pivoting together the ends of the
15 frame portions carrying the rollers, for the purposes described.

F. G. BIRD.

Witnesses:

JAMES SANGSTER,
L. M. SPONG.