

No. 652,522.

Patented June 26, 1900.

J. G. ROBERTS.
BOILER SCRAPER.

(Application filed July 25, 1899.)

(No Model.)

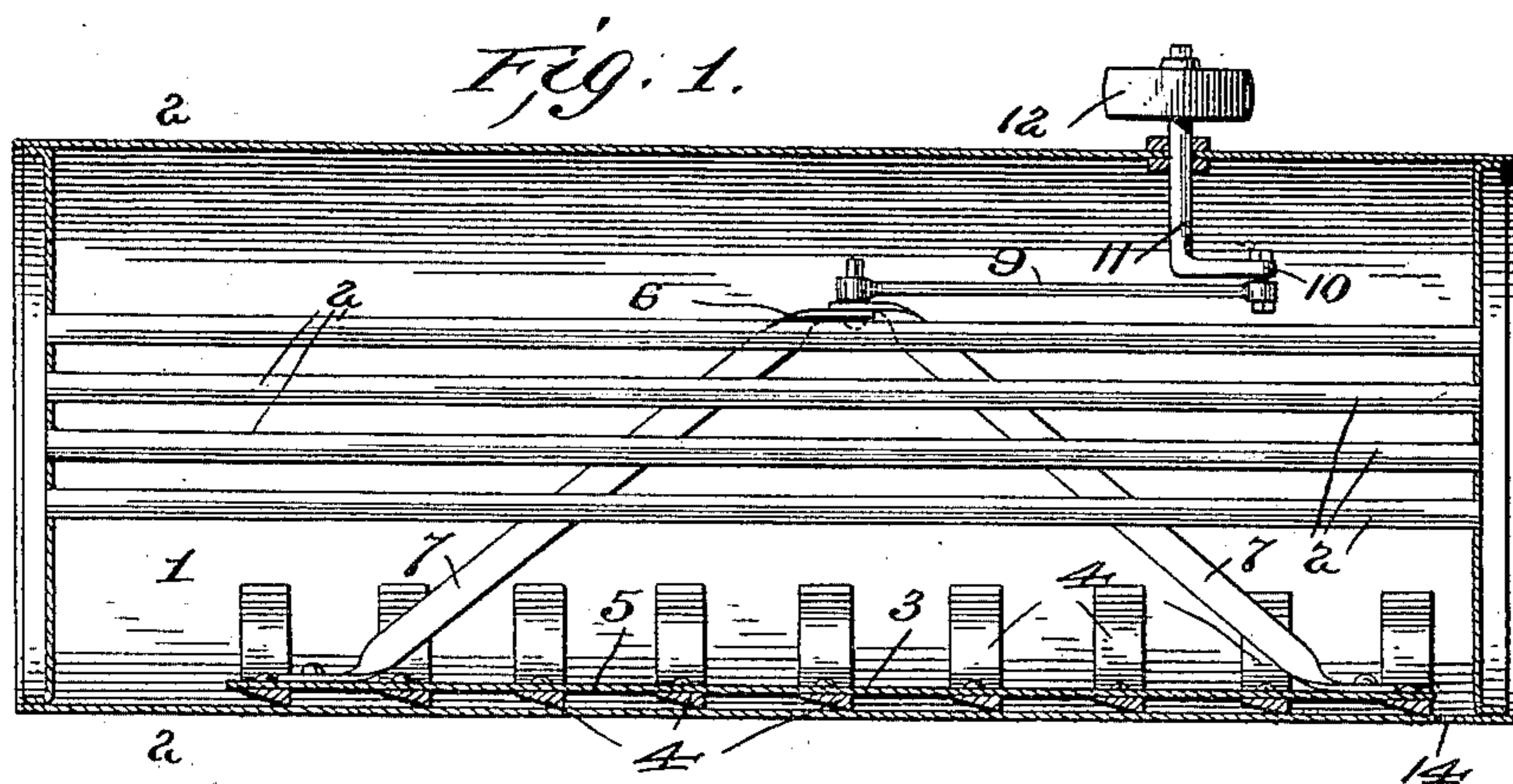
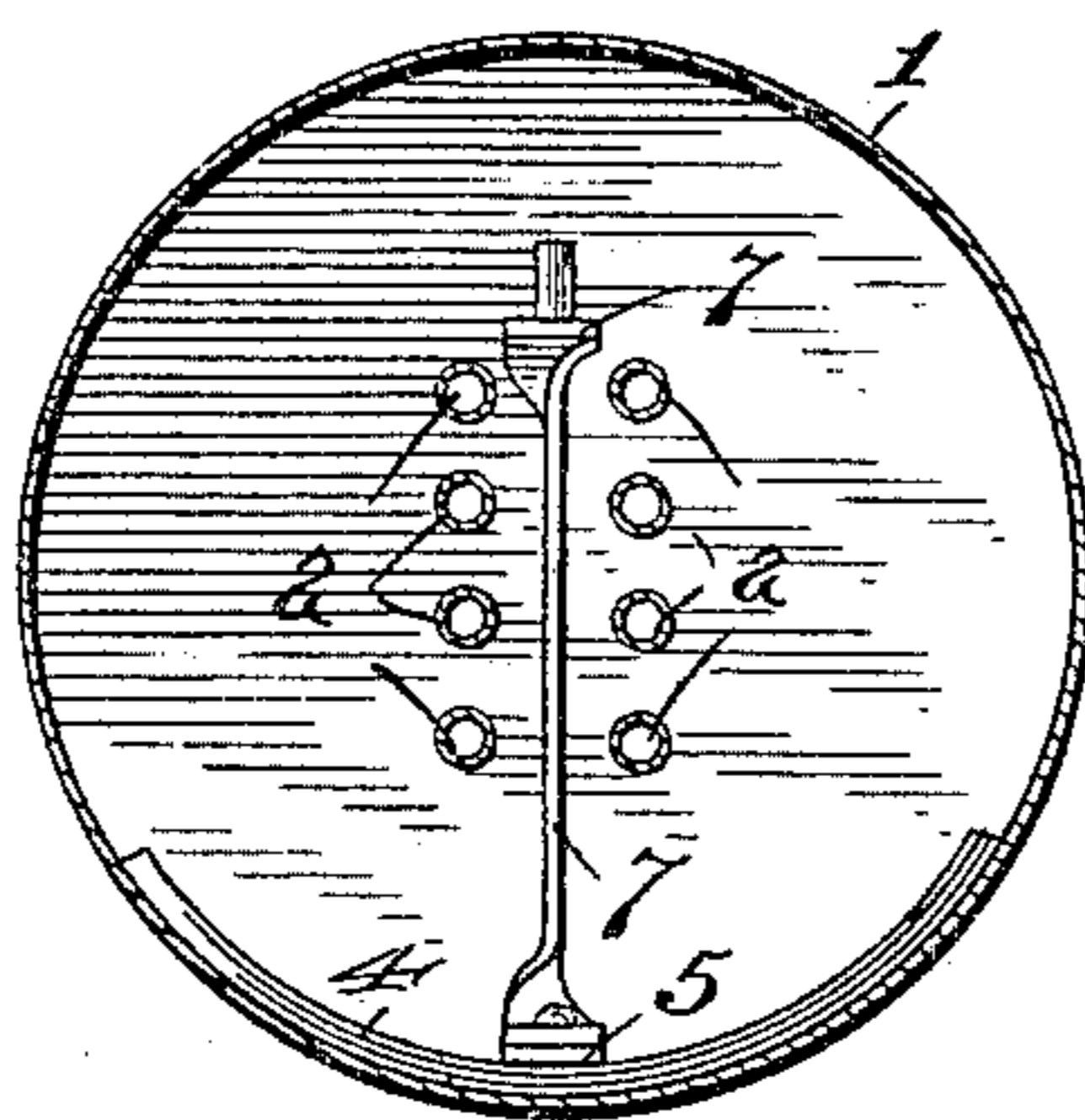


Fig. 2.



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JOHN GRIFFITH ROBERTS, OF DENVER, COLORADO.

BOILER-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 652,522, dated June 26, 1900.

Application filed July 25, 1899. Serial No. 725,082. (No model.)

To all whom it may concern:

Be it known that I, JOHN GRIFFITH ROBERTS, a citizen of the United States, residing at Denver, Colorado, have invented certain
5 new and useful Improvements in Boiler-Scrapers, of which the following is a specification.

The object of the present invention is to provide a mechanically-operated boiler-scraper which will effectually remove the mud
10 and scale from the bottom of the boiler.

To this end the invention comprises a series of scraping-bars carried by a suitable frame extending up between the flues and
15 means for reciprocating said frame.

It further comprises the particular arrangement of the scraping-bars and the details of construction, as will be hereinafter described, and particularly pointed out in the claims.

20 The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a sectional view of a boiler, showing the scraper in place; and Fig. 2 is a detail cross-sectional view.

25 The boiler 1 herein shown has the ordinary flues 2 extending between the heads thereof. In the bottom thereof the scraper 3 rests, which consists of a series of blades 4, extending transversely of the boiler and curved to
30 conform to the bottom thereof. These blades are connected together by a longitudinal bar 5, bolted centrally of each blade 4. A vertical frame 6, consisting of flat members 7, guided between the central flues, has its
35 lower ends bolted to the longitudinal bar and its upper end connected to a pitman 9, which in turn is connected to a crank 10, carried by the shaft 11. The latter is journaled in a boxing in the upper wall of the boiler and
40 projects outside of the same to receive a pulley 12, which drives said shaft, and thereby through the connections described reciprocates the scraper-frame and scraper-blades. Each of the scraper-blades is given a slight
45 twist or beveled on its under face, so that

in the forward reciprocatory movement the cutting edges of the same will be pressed against the boiler by the water therein bearing on the upper faces and in the backward movement the whole frame will be lifted
50 slightly by the water in the boiler pressing against the lower incline face of the blades. The blow-off hole 14 is located near the rear head of the boiler, so that the scale and mud will be scraped toward the same on each forward reciprocation of the device. The blades
55 are so positioned or spaced apart that on each successive forward reciprocation each blade will carry forward the scrapings which have been moved by the blade in the rear
60 thereof in the previous reciprocation, so that the scale and mud will be gradually fed from the front to the rear of the boiler, the blades rising above the scrapings on each rearward reciprocation.

I claim—

1. In combination with the boiler, a scraper comprising a scraper-blade having an inclined under surface and means connected to the scraper for reciprocating it, said connection being loose to permit the scraper to float
70 and rise vertically when moving back for a new scraping action, substantially as described.

2. In combination, the boiler, a scraper
75 comprising a series of blades connected together and having inclined lower sides to cause the scraper to float in moving back for a new scraping action, a driving connection for said scraper extending to a point centrally
80 over the same, and the inclined rods 7 extending from said connection to the opposite ends of the scraper, substantially as described.

In testimony whereof I affix my signature
85 in presence of two witnesses.

JOHN GRIFFITH ROBERTS.

Witnesses:

JOHN W. ELDER,
C. H. JACOBSON.