

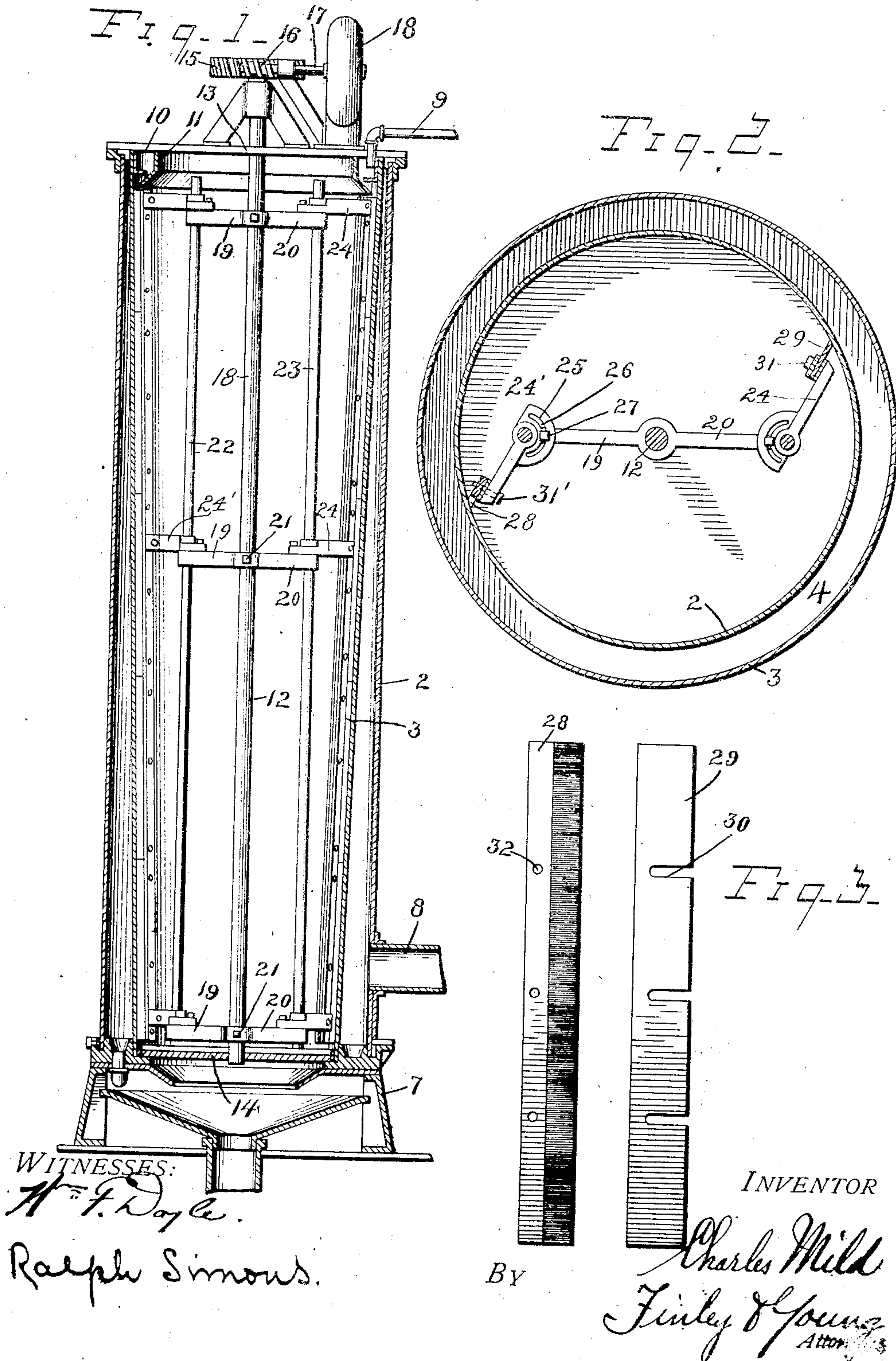
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C. MILD.

CLEANER FOR STEAM CONDENSERS.

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WITNESSES:
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CLEANER FOR STEAM-CONDENSERS

No. 864,664.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed April 7, 1906, Serial No. 310,464. Renewed July 11, 1907. Serial No. 333,322.

To all whom it may concern:

Be it known that I, CHARLES MILD, a citizen of the United States, residing at Mount Vernon, in the county of Knox and State of Ohio, have invented a new and useful Improvement in Cleaners for Steam-Condensers, of which the following is a specification.

My invention relates to improvements in cleaners or steam condensers.

The object of my invention is to provide a cleaner of this character which is adapted to operate on the inner water-cooled surface of a condensing cylinder for removing any deposits which may adhere to the cylinder. The water-cooled surface of the condenser is at all times free from any deposits, and the water flowing over the same has a greater condensing action upon the steam within the cylinder.

Another object of my invention is to provide a more simple, cheap and effective cleaner which is readily adjusted to fit cylinders of different diameters and also provided with means for varying the pressure of the brushes and scrapers on the water-cooled surface.

In the accompanying drawings: Figure 1 is a vertical sectional view of a steam condenser, showing my improved cleaner applied thereto; Fig. 2 is a transverse sectional view taken on the line $x-x$ of Fig. 1; and Fig. 3 is an enlarged detail plan view of the brush and scraper.

Referring now to the drawings, 1 represents the condensing cylinder, which, as shown, is composed of an outer vertically disposed cylinder 2 and an inner inclined cylinder 3 forming a steam condensing space 4 between the same. The upper and lower ends of the cylinders have connected thereto plates 5 and 6 which close the upper and lower ends of the steam condensing chamber 4. The said condenser is supported upon a base 7 and is provided with a steam supply pipe 8 a short distance above the base. The inner inclined cylinder 3 at its upper end is provided with a water supply pipe 9 and deflecting plates 10 and 11 for deflecting and spraying the water against or upon the inner face of said cylinder. The water thereupon travels downwardly in a thin sheet over the cylinder and keeps the same comparatively cool.

It has been found in condensers of this character that the inner cylinder 3 soon becomes coated with a deposit from the water and the cylinder does not readily transmit the cooling effect of the water to the inner face of the cylinder. In order to prevent this collection or deposit on the inner cylinder, I provide a vertically disposed shaft 12 rotatably supported in the center of the inner cylinder 3, the said shaft being supported at its upper end by a transverse bar 13 and its lower end by a plate 14 and is held against longi-

tudinal movement. The upper end of the shaft extends a distance above the upper end of the cylinder and is provided with a worm gear and meshing with the said worm gear 15 is a worm 16 which is carried on the shaft 17 of a water motor 18. The water motor may be driven through the medium of the water supply to the inner cylinder, thus the said shaft is caused to continually rotate.

The shaft 12 at its upper and lower ends and at the center is provided with oppositely arranged radially extending arms 19 and 20 which are rigidly secured to the shaft by set-screws 21. The outer ends of said arms have rigidly mounted therein vertically disposed rods 22 and 23 which extend parallel with the shaft. The said rods have loosely mounted thereon the arms 24 and 24' which are provided on their inner ends with segmental plates 25 having segmental slots through which passes a set-screw 27 which enters the arm 24 and whereby the arms may be adjusted in any position. The outer ends of the arms extend adjacent to the inner face of the cylinder 3 and support the brushes 28 and scrapers 29. The scrapers and brushes bear against the inner surface of the cylinder 3 and keeps it absolutely free of any deposit. The scraper 29, as shown, is of an elongated sheet of metal having a series of transverse slots 30 extending from one edge about three-fourths of the width of the scraper. Carried by the outer ends of the arms 24 are bolts 31 which pass through said slots and securely fasten the scrapers to the arms, the slots allowing for the inward and outward adjustment of the said scrapers. From the drawings, it will be seen that the scrapers are not made of a single piece extending the whole length of the cylinder, but are made in sections and the same slots 30 are used for securing the said sections together for forming a continuous scraper. The brush 28 is likewise secured to the arm 24' by the bolt 31', but instead of having slots they are provided with openings 32 through which the bolts 31 pass. These brushes need no adjustment to or from the cylinder 3 as the elasticity of the bristles of the brush does not require as fine an adjustment as do the scrapers.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A cleaner for steam condensers comprising a rotary shaft, radially extending arms carried by the said shaft, vertically disposed bars rigidly carried by the outer ends of said arms and parallel with the shaft, brush and scraper carrying members loosely mounted on the said bars and having segmental slots at their inner ends, set-screws passing through said slots for adjustably holding said members, bolts passing through the outer ends of said members and brushes and scrapers secured thereto by the bolts.

2. A cleaner for steam condensers, comprising a rotary shaft, radially extending arms carried by the shaft, vertically disposed bars carried by the outer ends of the said arms and parallel with the shaft, brush and scraper carrying members loosely mounted on the said bars and having segmental slots at their inner ends, set-screws passing through said slots for adjustably holding said members, bolts passing through the outer ends of said members, and brushes and scrapers having openings and slots,

respectively, through which they are secured to the said members and by means of which they are secured together. 10
In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES MILD.

Witnesses:

J. B. WAIGHT,
FRANK MOORE.