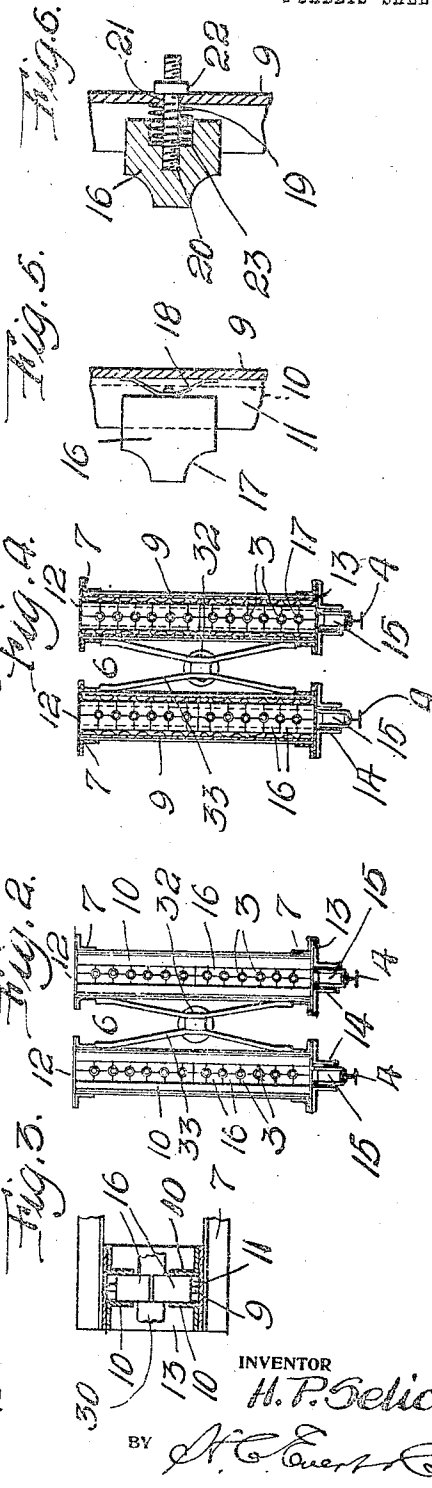
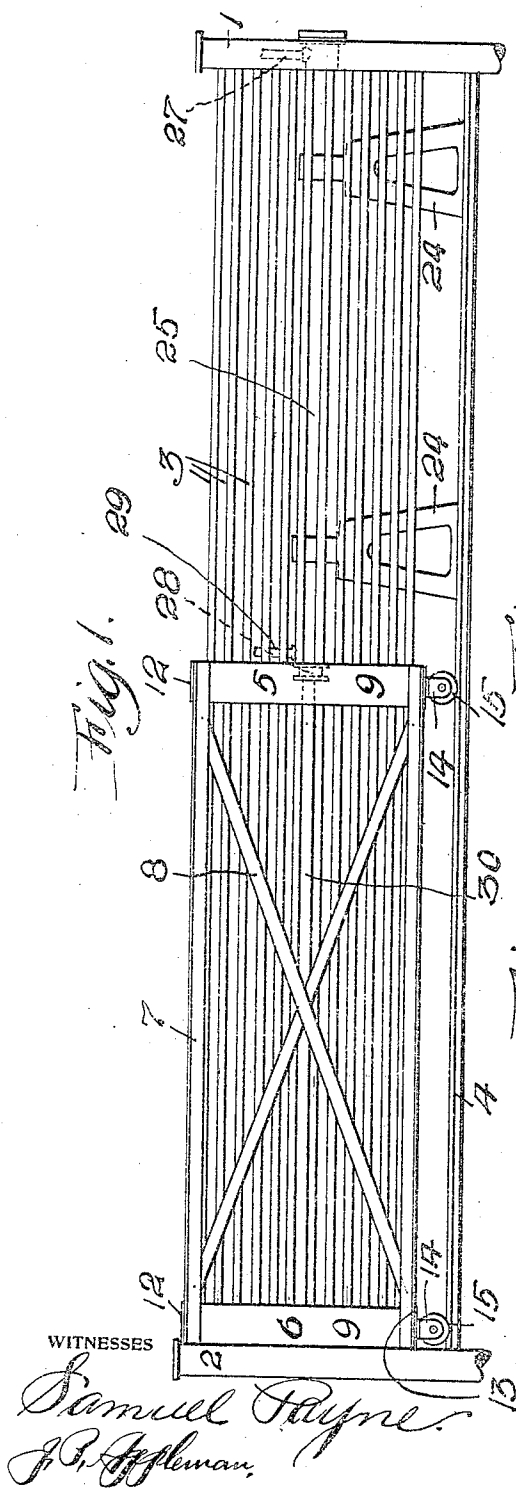


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H. P. SELICK.
SCRAPER FOR CONDENSERS.
APPLICATION FILED JAN. 20, 1912.

Patented Sept. 3, 1912.

2 SHEETS—SHEET 1.

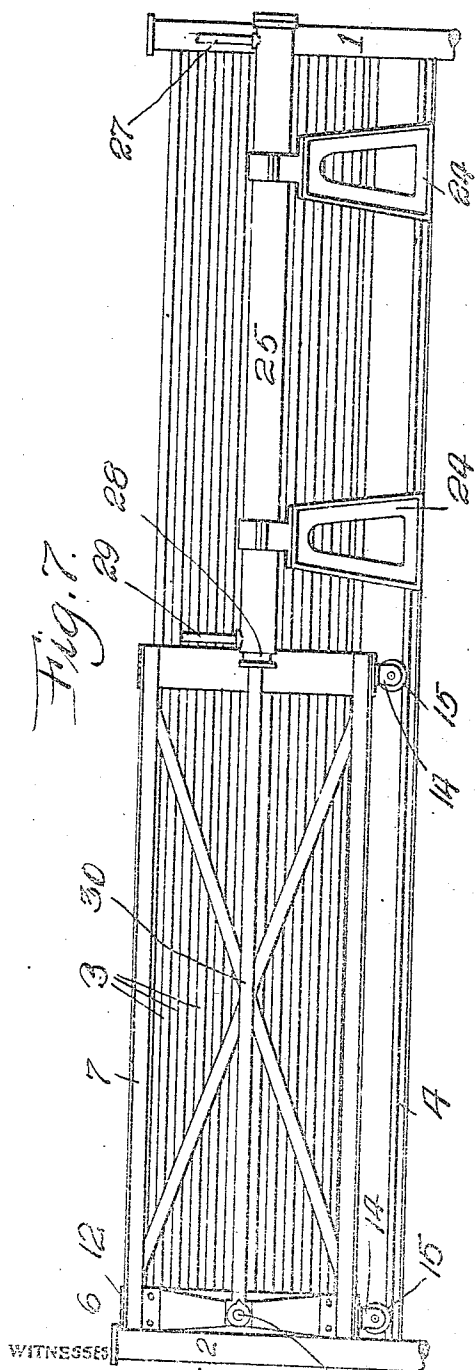


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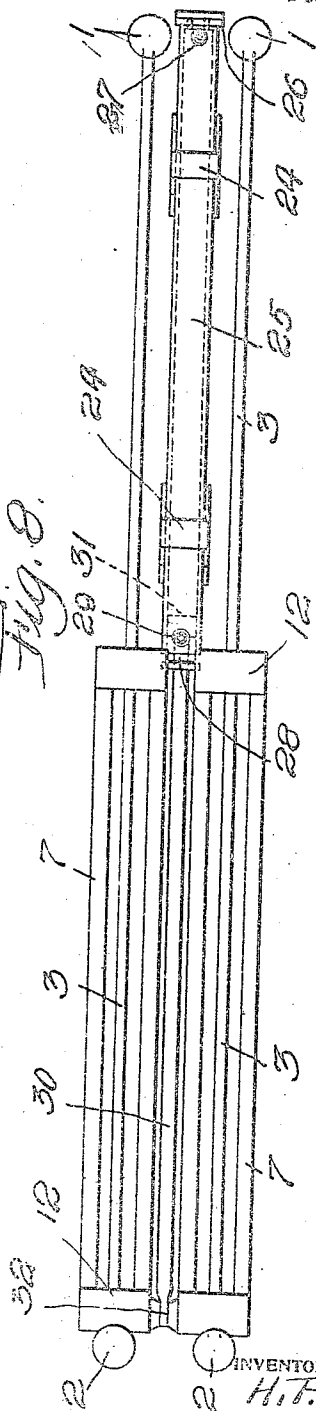
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WITNESSES
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UNITED STATES PATENT OFFICE.

HENRY P. FELICK, OF STEUBENVILLE, OHIO.

SCRAPER FOR CONDENSERS.

1,037,672.

Specification of Letters Patent.

Patented Sept. 3, 1912.

Application filed January 20, 1912. Serial No. 672,358.

To all whom it may concern:

Be it known that I, HENRY P. SELICK, a citizen of the United States of America, residing at Steubenville, in the county of Jefferson and State of Ohio, have invented certain new and useful Improvements in Scrapers for Condensers, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to scrapers for condensers of that type wherein steam is condensed by running water or atmospheric conditions, the condensers being generally located upon the top of a building.

15 The primary object of my invention is to provide a scraper for removing slime, incrustations and other matter that forms upon condensing pipes due to the running water or atmospheric conditions, such incrustations impairing the efficiency of the condenser and necessitating a cessation in the operation of the condenser from time to time in order that it can be cleaned.

20 Another object of this invention is to provide a scraper that can be advantageously used in connection with the condensers of ice plants, the scraper being arranged whereby it can be intermittently operated to prevent the formation of a coating upon the condenser pipes, the operation of the scraper not interfering with or retarding the operation of the condenser.

25 A further object of this invention is to provide a scraper made of standard materials and equipped with yieldable scraping blocks or blades that will not injure the condenser pipes.

30 A still further object of this invention is to provide a scraping machine that is durable, easy to install and highly efficient for the purposes for which it is intended.

35 With the above and other objects in view, the invention resides in the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawings, wherein:—

40 Figure 1 is a side elevation of the scraping device, Fig. 2 is an end view of the same, Fig. 3 is an enlarged horizontal sectional view of a portion of the device, Fig. 4 is a vertical sectional view of the device, Fig. 5 is an enlarged elevation of one of the scrapers, Fig. 6 is a longitudinal sectional view of a modified form of scraper,

Fig. 7 is a longitudinal sectional view of the scraping device, and Fig. 8 is a plan of the same.

The reference numerals 1 denote vertical parallel steam inlet pipes and spaced apart from said pipes are vertical parallel steam outlet pipes 2. The pipes 1 and 2 are connected by longitudinal parallel condensing tubes 3.

60 Arranged longitudinally beneath the tubes 3 is a track 4 and movably mounted upon said track is a scraper truck approximately half the length of the condenser tubes 3. The scraper truck comprises sets of vertical scraper holders generally designated 5 and 6, said holders having the upper and lower ends thereof connected by longitudinal parallel angle bars 7 and by diagonally disposed braces 8.

75 Each scraper holder comprises side plates 9 having the inner sides thereof provided with sets of vertical angle bars 10 forming vertical channels 11. The upper and lower ends of the angle bars 10 and the side plates 9 are connected by horizontal plates 12 and 13. The latter are provided with bearings 14 for revoluble truck wheels 15 that travel upon the track 4.

80 Arranged within the channels 11 of each holder are scrapers, comprising blocks 16 having the confronting faces thereof recessed, as at 17, each recess having a curved wall representing a quarter of the circumference of one of the tubes 3, whereby the blocks 16 will surround or encompass the tubes 3, as best shown in Figs. 2 and 4. The blocks 16 are yieldable in a lateral plane through the medium of springs 18 secured to the outer sides of the blocks 16 and engaging the side plates 9. The springs 18 are flat, as shown in Fig. 5 and in lieu of these springs coiled compression springs 19 can be utilized, as shown in Fig. 6, in which instance, guide bolts 20 are mounted in the blocks 16 and extend through openings 21 provided therefor in the side plates 9. The guide bolts are provided with nuts 22 and the springs 19 encircle the bolts between the side plates 9 and said blocks, the inner convolutions of said springs extending into sockets 23 provided therefor in said blocks.

85 Arranged between the sets of condenser tubes 3, adjacent to the steam inlet pipes 1, are bearings 24 for a longitudinal cylinder 25 that is approximately half the length of the condensing devices. The outer end of

the cylinder 25 is closed by a head 26 and is provided with an inlet and outlet pipe 27. The inner end of the cylinder has a stuffing box 28 and an inlet and outlet pipe 29. Extending through the stuffing box 28 is a piston rod 30 having the end thereof within the cylinder provided with a piston head 31. The opposite end of the piston rod 30 is mounted by a transverse pin 32 between two straps 33 carried by the confronting sides of the scraper holders 6.

Steam, air or water or any suitable fluid can be admitted to the cylinder 25 for moving the piston head 31 and the piston rod 30 therein. When steam is admitted to the pipe 29, the piston rod 30 is drawn into the cylinder and moves the scraping truck from one end of the condensing device to the opposite end thereof, the steam in the outer end of the cylinder exhausting through the pipe 27. By reversing the course of the steam in the cylinder, that is, admitting steam by the pipe 27 and allowing the steam in the inner end of the cylinder to exhaust through the pipe 29, the scraper truck can again be shifted relatively to the condensing tubes 3. It is in this manner that the scraper truck can be intermittently shifted to prevent the accumulation of slime or other matter upon the condensing tubes 3, and as the scraping blocks 16 yieldably engage said tubes, said blocks remove matter that accumulates upon the surface of the condensing tubes.

Other means than the cylinder and piston can be utilized for reciprocating the scraping truck and it is obvious that the truck can include a greater number of scraper holders whereby the device can be used in connection with a large condenser. It is obvious that the scrapers can be removed from the holders and thoroughly cleansed or renewed.

While in the drawing there are illustrated the preferred embodiments of the invention, it is to be understood that the structural elements thereof are susceptible to such variations as fall within the scope of the appended claims.

What I claim is:—

1. An apparatus for scraping the tubes of boilers and condensers comprising a reciprocatory truck, means for shifting the truck scraping holders positioned at each end of said truck, resilient supported scrapers arranged in said holders and capable of engaging with the periphery of the tube for scraping the same when the truck is reciprocated.

2. An apparatus for scraping the tubes of boilers and condensers comprising a reciprocatory truck, sets of vertically disposed scraper holders carried by said truck and oppositely disposed sets of scrapers carried by

each holder and capable of engaging the periphery of the tubes by scraping the same when the truck is reciprocated.

3. An apparatus for scraping the tubes of boilers and condensers comprising a reciprocatory truck, a vertically disposed scraper holder carried at each end of said truck, and two sets of scrapers arranged in each of said holders, the holders of one set projecting toward the holders of the other set and capable of engaging with the periphery of the tubes for scraping the same when the truck is reciprocated.

4. An apparatus for scraping the tubes of boilers and condensers comprising a reciprocatory truck, a vertically disposed scraper holder carried thereby, and two sets of scrapers supported by said holder, the scrapers of one set extending toward the scrapers of the other set and said scrapers capable of cleaning the periphery of the tubes when a truck is shifted.

5. An apparatus for scraping the tubes of boilers and condensers comprising a reciprocatory truck, means for shifting the truck, a vertically disposed scraper holder carried by the truck, two sets of scrapers arranged in said holder, the scrapers of one set extending toward the scrapers of the other set and said scrapers capable of cleaning the tubes when the truck is shifted and means for resiliently connecting the truck to said holder.

6. An apparatus for scraping the tubes of boilers and condensers comprising a reciprocatory truck, a vertically disposed scraper holder arranged at each end of said truck, two sets of scrapers mounted in each of said holders, the scrapers of each set extending toward the scrapers of the other set and the scrapers of each holder capable of engaging the periphery of the tubes for cleaning them when the truck is shifted.

7. An apparatus for scraping the tubes of boilers and condensers comprising a reciprocatory truck, a vertically disposed scraper holder arranged at each end of said truck, two sets of scrapers mounted in each of said holders, the scrapers of each set extending toward the scrapers of the other set and the scrapers of each holder capable of engaging the periphery of the tubes for cleaning them when the truck is shifted, and means for resiliently connecting the scrapers to the holders.

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

HENRY P. SELICK.

Witnesses:

MAX H. SROLOVITZ,
KARL H. BUTLER.