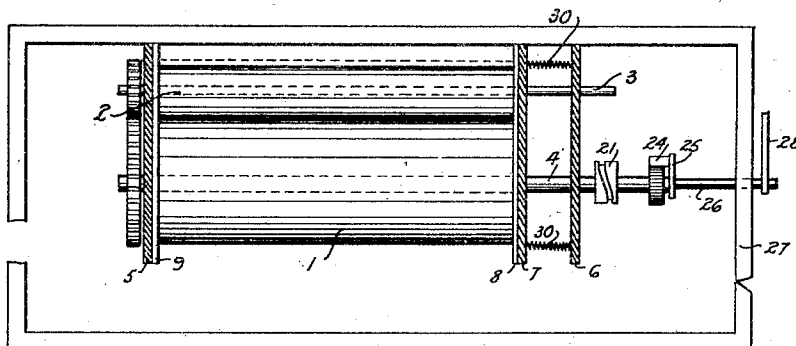
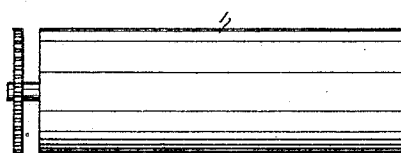


APPLICATION FILED JAN. 24, 1921.

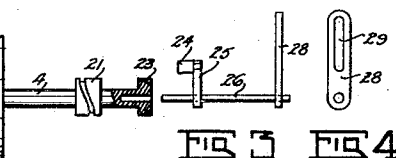
Patented May 24, 1921.



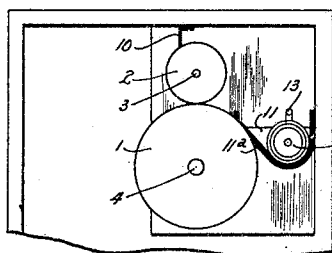
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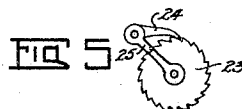
四 2



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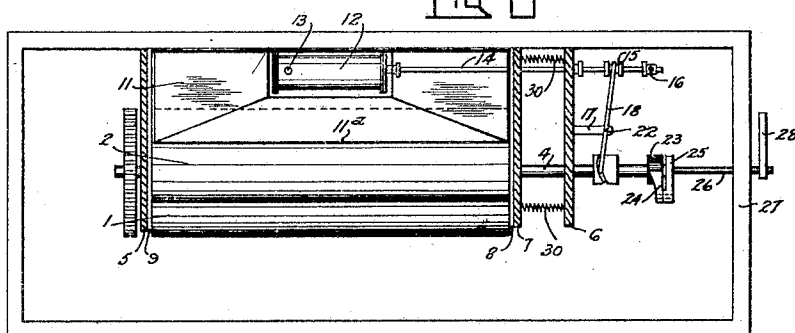
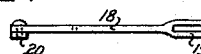


四 6



四二

西7



WITNESSES:-

W. J. Gray
Lott Miller

John Foster.

INVENTOR.

UNITED STATES PATENT OFFICE.

JOHN FOSTER, OF CALGARY, ALBERTA, CANADA.

OIL-SEPARATOR.

1,379,176.

Specification of Letters Patent.

Patented May 24, 1921.

Application filed January 24, 1921. Serial No. 439,617.

To all whom it may concern:

Be it known that I, JOHN FOSTER, a subject of King George of Britain, residing at the city of Calgary, in the Province of Alberta and Dominion of Canada, have invented certain new and useful Improvements in an Oil-Separator, of which the following is a specification.

It is generally conceded that oil in the feed water is detrimental to the operation of a steam boiler and the object of my invention is to provide a means of removing the oil from the condensed exhaust steam, and effect an economy by re-use of the oils extracted.

I accomplish this by the device illustrated in the accompanying drawings in which—

Figure 1 is a vertical elevation showing the rollers between which the particles of oil pass. Fig. 2 is a view of the larger roller showing the cam and hollow shafting into which the operating shaft is connected. Fig. 3 is a view of the operating shaft showing the ratchet lever and bell crank, which is connected to the power shaft by a rod. Fig. 4 is a front view of the bell crank showing the slot for adjusting the length of the stroke. Fig. 5 is a detail view of the ratchet and wheel. Fig. 6 is a vertical cross section through the device showing the rollers and oil pump in relation to one another, the method of removing oil from the large roller, and water cut off on the smaller roller. Fig. 7 is a view of the forked rod which operates the oil pump from the cam on the shaft of the large roller, and Fig. 8 is a view looking down from above, showing the general arrangement of the various units.

Similar numbers refer to similar parts throughout the several views:

A large roller 1, is geared to a smaller roller 2, which are mounted centrally one above the other and have smooth metallic faces which are in contact with one another. The central shafts of these rollers 3 and 4 are mounted in brackets 5 and 6, secured to the upper portion of the case, or lid. A bracket 7, is loosely mounted upon the roller shafts 3 and 4 and has a leather face plate 8, against which the end of the rollers 1 and 2, engage to prevent creeping of water. a similar face plate 9, being provided at the opposite ends of the rollers with support against the bracket 5. Springs 30 are

mounted between the brackets 6 and 7 to insure perfect contact between the leather face plates 8 and 9 and the ends of the rollers 1 and 2, and to insure the exclusion of water over the top of the small roller 2, a skimming plate 10, is provided, secured to the upper case or lid as shown in Fig. 6. An oil receiver 11 has a skimmer edge 11^a which engages the large roller 1 and removes the oil therefrom, which said oil travels to the bottom of the receiver 11 and thence through a pump 12 by the pipe 13 to a tank (not shown) outside the device. The pump shaft 14 is parallel to that of the large roller 1 and has a sleeve 15, traveling between two brackets 16 and 17, the position of the bracket 16 being adjustable so as to lengthen or decrease the stroke. A connecting rod 18, is pivotally mounted in a bracket 22, which bracket is rigidly secured to the bracket 6, carrying the rollers, and has a forked end 19, engaging the grooved sleeve 15, before described and a traveler 20, at its other end engaging in the groove of a horizontal cam 21, which said cam is rigidly secured upon the shaft 4, of the larger roller. Secured to the hollow end of the shaft 4, before described, is a ratchet wheel 23, and engaging this ratchet wheel is a ratchet lever 24, pivotally mounted upon a shaft 25. This ratchet arm 25 is rigidly mounted upon a shaft 26, which fits into the hollow end of the shaft 4 of the larger roller. The shaft 26, after passing through the side casing 27, is provided with a bell crank 28, which bell crank has an adjusting slot 29, within which slot a connecting rod is secured. This connecting rod conveys the power from any suitable part of the engine to the device and is not shown as it does not form any part of my invention.

A float valve, or any other suitable means is provided so as to prevent an undue accumulation of water.

I claim:

In an oil separator, the combination of smooth faced metallic rollers their surfaces in close rolling contact, mounted for rotation in stationary brackets and being geared together. leather cut-offs, engaging the ends of the rollers and mounted upon the interior face of a bracket carrying the metallic rollers. a bracket loosely mounted upon the roller shafts and having a leather face plate kept in contact with the ends of the rollers

by means of tension springs between the loose bracket and the rigidly mounted bracket, water cut off engaging one side of the small roller to exclude water, a skimming plate coacting upon the large roller and delivering the oil skimmed therefrom to a receiver and means of removing the

said oil from the container to an oil tank all substantially as described.

Calgary, January 14th, 1921.

JOHN FOSTER.

Witnesses:

W. J. SHAY,

V. AYLING.