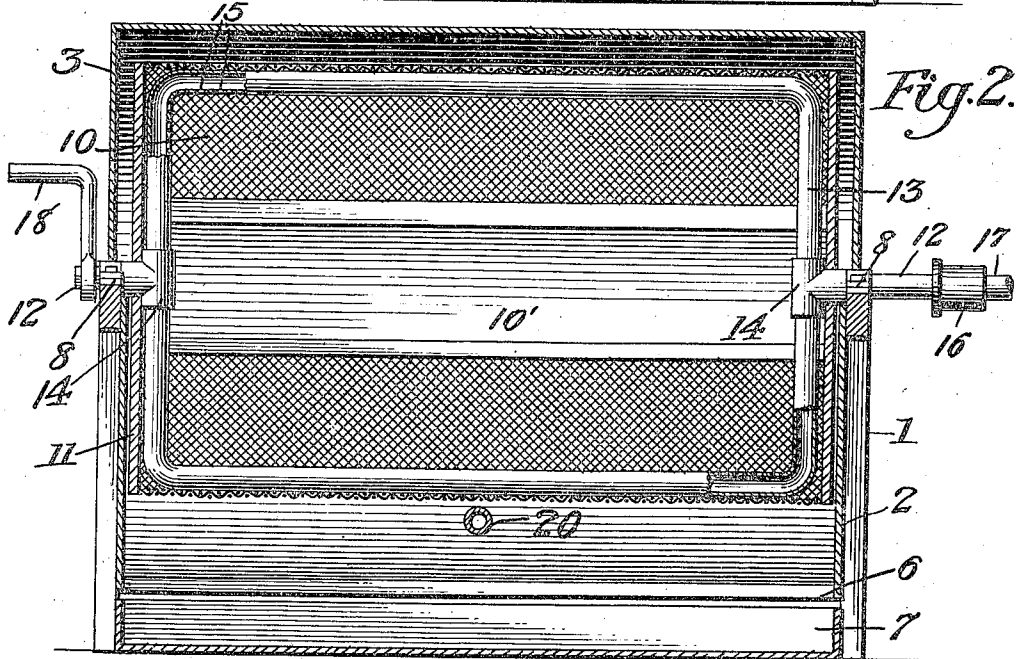
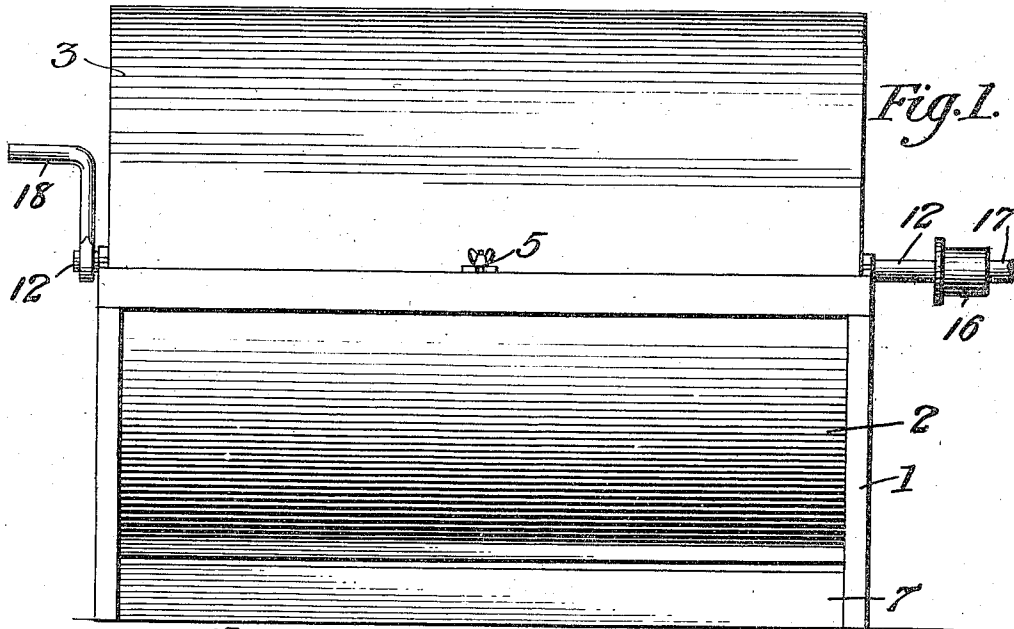


I. JONES.
METHOD OF TREATING OIL SOAKED WASTE.
APPLICATION FILED SEPT. 14, 1912.

1,051,116.

Patented Jan. 21, 1913.

2 SHEETS—SHEET 1.



Witnesses.
Guthrie Matheson.
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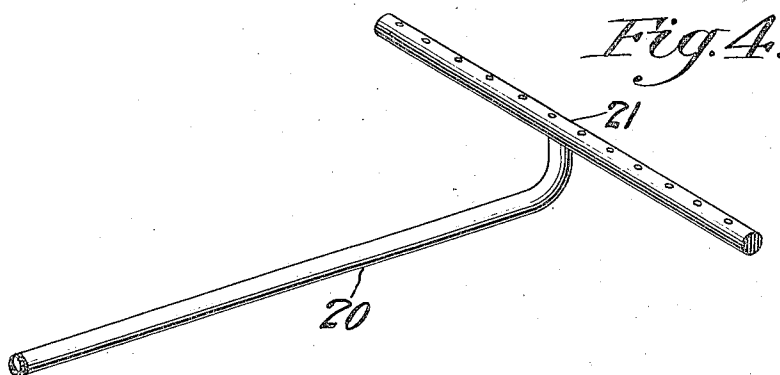
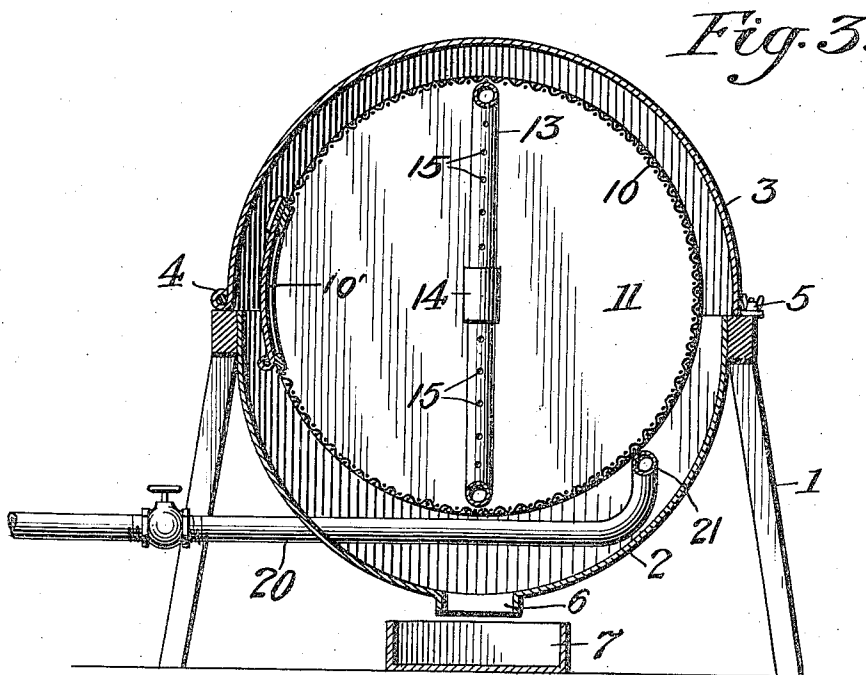
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UNITED STATES PATENT OFFICE.

ISAAC JONES, OF CHEYENNE, WYOMING.

METHOD OF TREATING OIL-SOAKED WASTE.

1,051,116.

Specification of Letters Patent. Patented Jan. 21, 1913.

Application filed September 14, 1912. Serial No. 720,330.

To all whom it may concern:

Be it known that I, ISAAC JONES, a citizen of the United States, residing at Cheyenne, in the county of Laramie and State of Wyoming, have invented certain new and useful Improvements in Methods of Treating Oil-Soaked Waste; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same.

This invention relates to the method of renovating oil soaked waste, such as is used in journal boxes and like bearings, and has for its object to treat the waste in such manner as to completely remove the dirt from the waste, to remove the short pieces of yarn, dissipate and remove the glazed surface which ordinarily forms upon the waste next to the journal, to fluff the fiber in the yarn, and to effect these several results without materially diminishing the oily or greasy content of the waste, so that the thoroughly cleaned oil soaked waste may be further employed without the necessity of saturating the same with a new portion of oil or grease.

To this end, the invention relates to the method of cleaning dirt and the like from oil impregnated waste without materially diminishing the oily content, which consists in agitating the waste and simultaneously subjecting the body of agitated waste to blasts of heated fluid medium, preferably steam, which blasts traverse the waste in all directions forcing the dirt and foreign material out of the body of the waste, expanding or fluffing the individual fibers of the waste and at the same time leaving the oily content practically intact in the body of the waste.

A relatively simple form of apparatus for carrying out the process is illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of the said apparatus; Fig. 2 is a vertical longitudinal section therethrough; Fig. 3 is a vertical transverse section; Fig. 4 is a perspective view of the spraying head employed in the apparatus.

Referring to the drawings, 1 indicates a frame of wood or other suitable material in which is secured a pan-like receptacle 2, semi-cylindrical in shape, above which is a hood or cover 3 of similar shape, which cover is hinged at 4 to the frame 1 and is adapted to be locked thereto in closed posi-

tion by a screw and thumb nut 5. The lower part of the portion of the receptacle 2 is provided with a discharge outlet 6 emptying into a suitable drip pan 7.

Inclosed in the casing formed by the parts 2 and 3 and journaled in suitable bearings 8 carried by the frame 1, is a foraminous drum, preferably composed of an outer covering of wire mesh 10, attached to solid heads or end portions 11, which latter are secured to the T-couplings 14, which in turn are provided with trunnions 12 engaging the bearings 8 aforesaid. The right hand trunnion 12 is formed by a supply pipe for steam or other fluid under pressure, which is connected by a suitable swiveling coupling 16 to the supply pipe 17. Connected to the T-couplings 14 and disposed as a rectangular frame within the rotary drum is a spray pipe 13 having perforations 15 which direct jets of the fluid medium radially, toward the axis of the drum and longitudinally or parallel with the drum axis. The left hand trunnion 12 is provided with a crank or other suitable means for rotating the drum and the spray pipe contained therein. One side of the said drum is provided with a hinged door 10' adapted to admit the waste to and discharge the same from the drum. If it is desired to rotate the drum automatically, steam or other fluid medium under pressure is supplied in jets which strike the peripheral surface of the drum at a suitable angle by means of a spray pipe 21 connected with the supply pipe 20, which latter, like the supply pipe 17, is provided with the usual form of shut-off valve.

In operating the apparatus to carry out the novel method, the oil soaked waste from journal boxes and the like is thrown into the cylinder through the hinged door in the side of the drum after which the door 10' is closed and the hood-like member of the casing is likewise closed and locked into position. Steam or other hot fluid medium under pressure is admitted through pipe 18 and the drum revolved, either by means of the handle 18 or by means of jets from the pipe 21 striking against the periphery of the drum. The jets of steam or the like are thereby forced through the body of the waste while the latter is tumbled about and violently agitated by the rotary movement of the drum with the result that the steam jets traverse the waste in all directions and thoroughly permeate the same and as a con-

sequence the dirt and short pieces of waste are driven forcibly out of the mass of waste and escape through the perforated portions of the drum into the lower part of the casing 2 where they are ultimately discharged with the water of condensation through outlet 6 into the drip trough 7. The shaking or agitation of the waste, together with the impingement of the steam jets upon the agitated waste also subserves the purpose of breaking up the glaze which is commonly formed on the surface of the waste adjacent the journals which is apparently due to a mixture of dirt and oil, which prevents the oil passing through the waste to the journal and is a very common cause of overheating in the journals. It has been the common practice heretofore to attempt to remove this glaze and other foreign matter from old waste by shaking it up by hand which, however, has merely the effect of distributing the glazed portion of the waste throughout the whole mass without removing the glaze. By the present method, however, the glaze is not only fractured and broken away from the waste, but is also so far broken up and dissipated as to admit of its being shaken out of the waste and carried off with the other foreign material. A still further result of the process aforesaid is the swelling or fluffing of the fiber in the yarn constituting the waste which is obviously a desirable feature and one which is not attained by any of the ordinary methods of cleaning or renovating waste.

One of the most important results of the process aforesaid is that, while it removes all dirt and other deleterious material from the waste, it does not extract the oil, but leaves the oily or greasy content of the waste, unimpaired and practically intact, distributed throughout the body thereof. In all of the waste cleaning processes heretofore employed, it has been the common practice to remove or wash out the oil so that when the cleaned waste was again used it was necessary to completely impregnate the entire mass of waste with a fresh supply of oil. The present invention results in a great saving of oil in that very little of the lubricant contained in the waste is carried off during the cleaning of the waste by the process hereinbefore described. To illustrate by a concrete example, it requires approximately four pounds of lubricating oil to saturate one pound of new waste or old waste washed or renovated by the former process. In a series of operations, involving over five tons of old oil saturated waste, it was found that by the application of the present method one pound of oil added to

the renovated waste was sufficient to bring forty-six pounds of the said waste up to a complete saturation so that it was ready for immediate use in the journal boxes. This fact alone clearly demonstrates that practically all of the oil content in the old waste is left intact while the dirt, glaze, short pieces of waste and other objectionable material are completely removed from the waste by the improved process aforesaid.

In carrying out the process, it is desirable that the steam or other fluid medium be of a sufficient temperature to cause the oil to become softened without rendering it so highly fluid as to run out of the waste, and the pressure of the fluid medium should be sufficient to cause the jets traversing the waste to blow the dirt and foreign material out of the waste and permit the same to escape through the foraminous walls of the rotary drum. Very satisfactory results have been obtained in an apparatus such as illustrated in the drawings, with substantially dry steam at about eighty pounds pressure supplied to a body of waste in the drum for approximately three minutes, the result being a thoroughly cleaned and fluffed waste, ready for reuse and with its oily content practically unimpaired.

What I claim as my invention is:—

1. The method of cleaning dirt and the like from oil impregnated waste without materially diminishing the oily content, which consists in agitating the waste and simultaneously subjecting the same to blasts of heated fluid medium.
2. The method of cleaning dirt and the like from oil impregnated waste without materially diminishing the oily content, which consists in agitating the waste and simultaneously subjecting the same to blasts of steam.
3. The method of cleaning dirt and the like from oil impregnated waste without materially diminishing the oily content, which consists in tumbling the waste in the presence of blasts of steam which traverse the material.
4. The method of cleaning dirt and the like from oil impregnated waste without materially diminishing the oily content, which consists in separating and loosening the waste by agitation and subjecting the separated and loosened waste to blasts of heated fluid medium.

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

ISAAC JONES.

Witnesses:

BERTHA MATHSON,
JOHN D. CLARK.