

No. 819,803.

PATENTED MAY 8, 1906.

A. E. RICKERD.
VAT CLEANING APPARATUS.
APPLICATION FILED MAY 23, 1905.

2 SHEETS—SHEET 2.

Fig. 2.

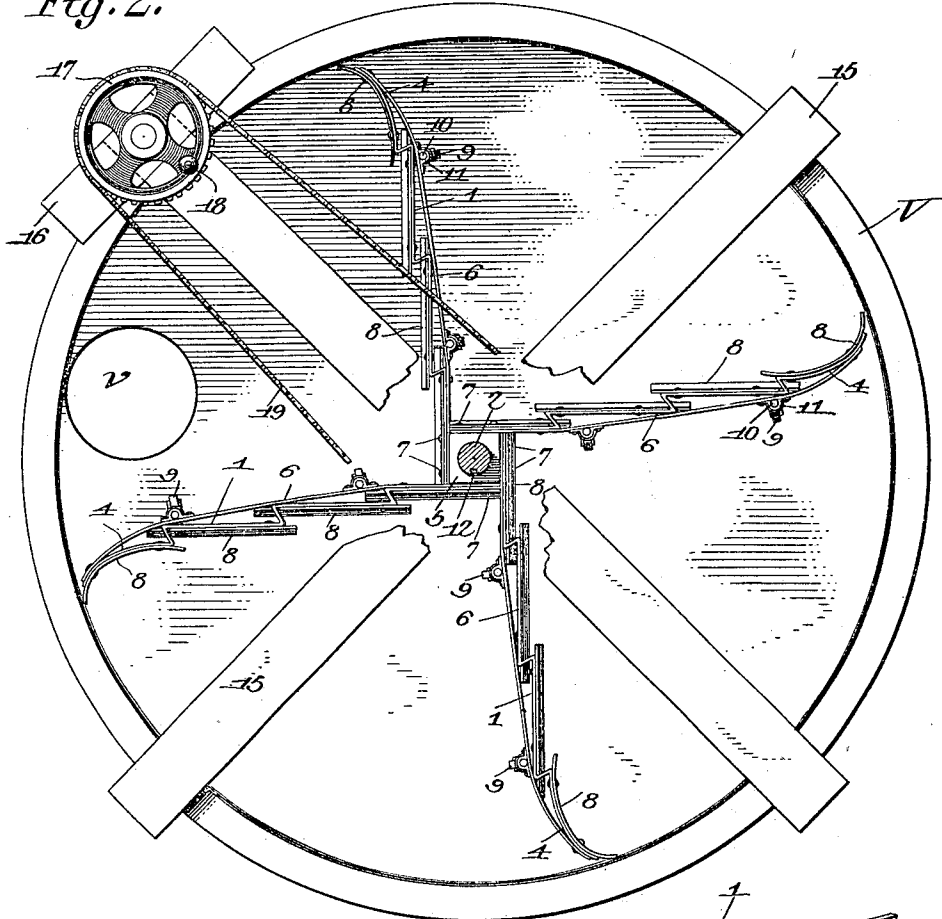
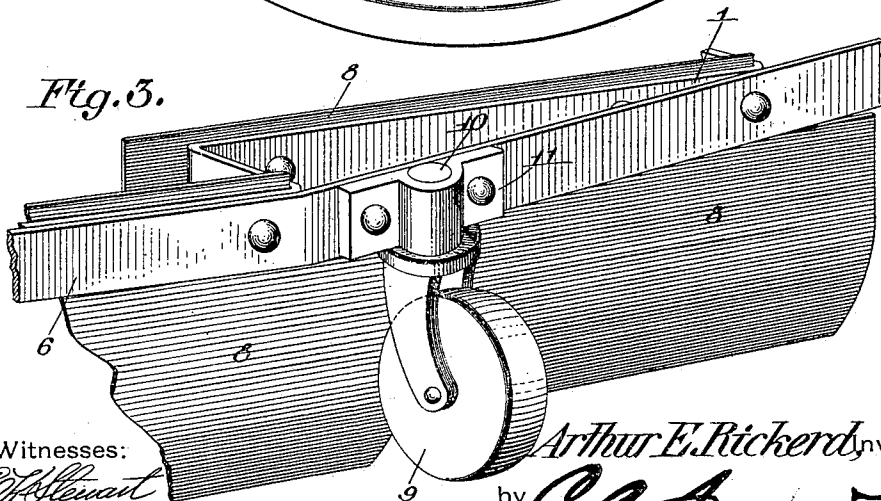


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

ARTHUR E. RICKERD, OF STANLEY, WISCONSIN.

VAT-CLEANING APPARATUS.

No. 819,803.

Specification of Letters Patent.

Patented May 8, 1906.

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To all whom it may concern:

Be it known that I, ARTHUR E. RICKERD, a citizen of the United States, residing at Stanley, in the county of Chippewa and State of Wisconsin, have invented a new and useful Vat-Cleaning Apparatus, of which the following is a specification.

This invention relates to apparatus for clearing tanning and other vats of contained material.

The object of the invention is to provide an apparatus of the class described which will in a rapid, certain, and expeditious manner clear a tank or vat of any contained material and which shall be simple of construction, thoroughly efficient and durable in use, and which may be readily repaired in case of damage or breakage.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a vat-cleaning apparatus, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, Figure 1 is a view in vertical longitudinal section through a vat, exhibiting the apparatus of the present invention combined therewith. Fig. 2 is a view in top plan. Fig. 3 is a perspective detail view, on an enlarged scale, of a portion of one of the cleaning-arms. Fig. 4 is a view in transverse section through one of the cleaning-arms.

Referring to the drawings, V designates a vat which may be made of any suitable material and of any size and provided in its bottom near the wall with a discharge-opening *v*. As the exact construction of the vat is immaterial, further description thereof is deemed unnecessary.

Arranged within the vat is a cleaning apparatus, which constitutes the subject-matter of the present invention and embodies a plurality of arms 1, carrying knives or shovels, a shaft 2, with which the arms are operatively combined, and an actuating or driving mechanism for the shaft, (designated generally 3.) In this form of the invention four of the arms are shown, and as each is a counterpart of the other in all details of construction a description of one will serve for all. Each arm, as clearly shown in Fig. 1, is a zig-zag structure and is constructed from a bar of metal of the appropriate strength, the outer

terminal of the arm being curved, as shown at 4, and the inner terminal being secured to a block or casting 5, rigidly secured to the shaft. The arm is reinforced against yielding by means of a brace 6, which extends from the outer to the inner end of the arm, and is also, in common with the latter, secured to the block, as by rivets or bolts 7. Secured to one face of the arm is a series of scrapers or shovels 8, the outer one of which is curved longitudinally to conform to the shape of the curved portion of the arm, and the series of scrapers or shovels being transversely curved, as shown in Fig. 4, and arranged in break-joint order, with the ends of each overlapping the ends of the adjacent scrapers.

In order to keep the scrapers or shovels from contacting with the bottom of the vat, which would result in wear of the latter, there is combined with each arm a plurality of roller-supports, which may be in the form of ordinary casters 9, the spindles 10 of which are secured in suitable sockets 11, bolted or otherwise suitably secured to the brace. As herein shown, there are but two of the casters, one being disposed adjacent to the inner and the other adjacent to the outer end of the arm; but it is to be understood that a greater number than this may be employed, if found necessary or desirable, and as this will be apparent detailed illustration of such obvious modification is deemed unnecessary. As shown in Fig. 2, the outer scraper or shovel is of greater height than the remaining ones, and this will generally be the preferred arrangement; but if found advantageous it may be made of the same height as the others.

The shaft 2 carries a spline 12, which extends throughout its entire length and is adapted to engage a keyway formed in the head 13 of a sprocket-wheel 14, so that the shaft and attached scraping mechanism may be readily raised or lowered as the necessity therefor occurs. The shaft passes through a suitable bearing formed in a frame 15, consisting, as shown in Fig. 2, of two crossed members, the terminal of one of which carries a member 16, on which is journaled a second sprocket-wheel 17, carrying a crank 18, the two sprocket-wheels being connected by a sprocket-chain 19. By this simple arrangement the scraping mechanism may be operated by hand, and when the contents of the vat are removed the apparatus may be transferred to another vat, and so on. The means

for driving the shaft—namely, by two sprocket-wheels and a sprocket-chain—is exhibit-
 5 ing obvious that, if preferred, the apparatus may be driven by suitable power, such as a steam-engine or the like, and still be within the scope of the invention.

In the operation of the apparatus the first
 10 scraper, or that adjacent to the shaft, dislodges a portion of the material in the vat and moves it a distance equal to its length, whereupon the second scraper catches it and moves it outward toward the periphery of the
 15 vat, and so on, this movement being due to the fact that the shovels are tangentially disposed relatively to the shaft 2, the final or longitudinally-curved scraper operating to discharge the material out through the es-
 20 cape-opening *v*. In some instances tan-vats are provided with a discharge-orifice practically at their center, and when the apparatus is used with such form of vat the position of the arms will be reversed—that is to say, the
 25 curved arms will be attached to the block.

Having thus described the invention, what is claimed is—

1. A vat-cleaning apparatus embodying a

driven shaft, a plurality of zigzag-shaped arms carried thereby and disposed tangentially thereto, and shovels combined with the arms and having their lower portions curved in the direction of rotation of the arms.

2. A vat-cleaning apparatus embodying a driven shaft, a plurality of rotatable zigzag-shaped arms carried thereby, shovels carried by the arms and having their lower longitudinal portions curved, the outer one of each of the shovels being transversely curved.

3. A vat-cleaning apparatus embodying a driven shaft, a plurality of rotatable zigzag-shaped arms carried thereby, shovels combined with the arms and arranged in break-joint order relatively to each other and having their lower portions longitudinally curved, braces combined with the arms, and roller-supports carried by the braces and disposed near the outer terminals of the arms.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ARTHUR E. RICKERD.

Witnesses:

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