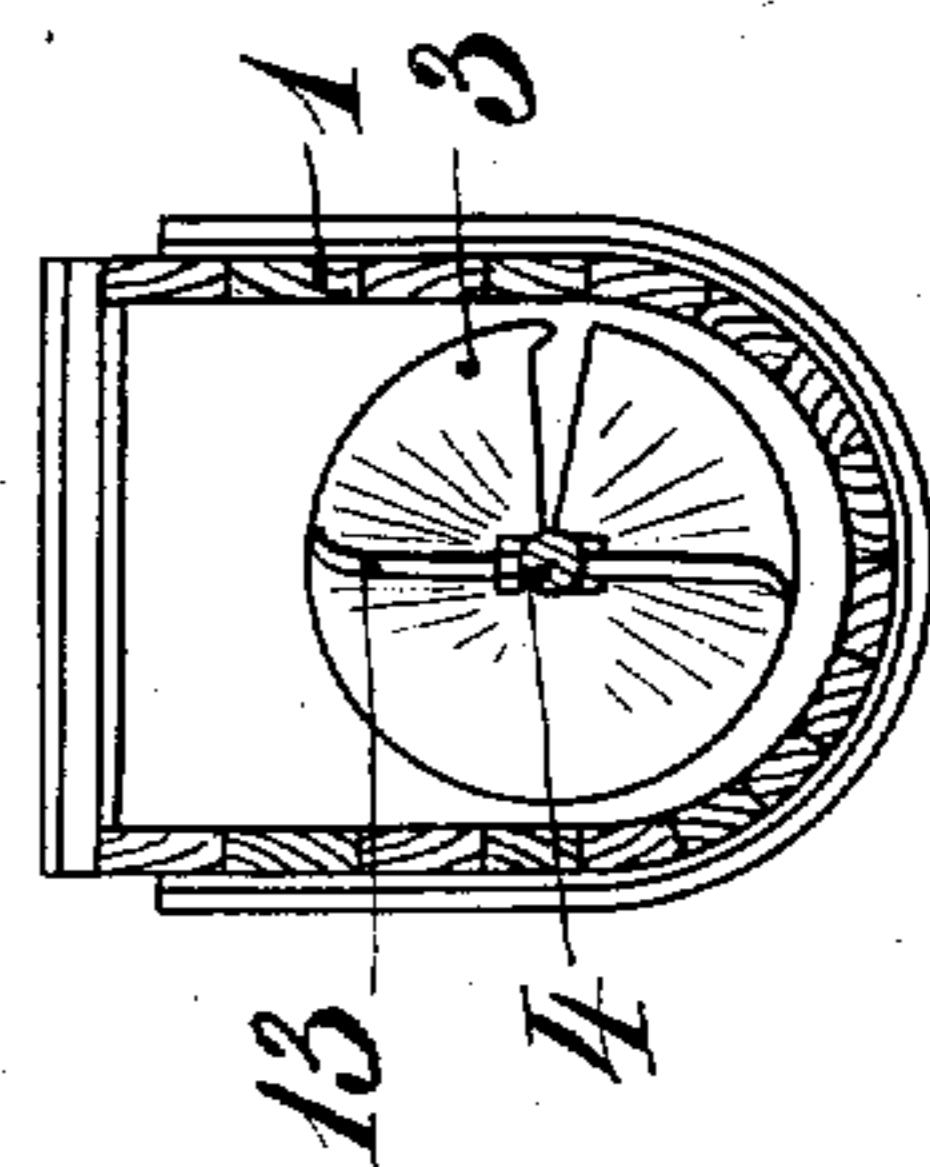
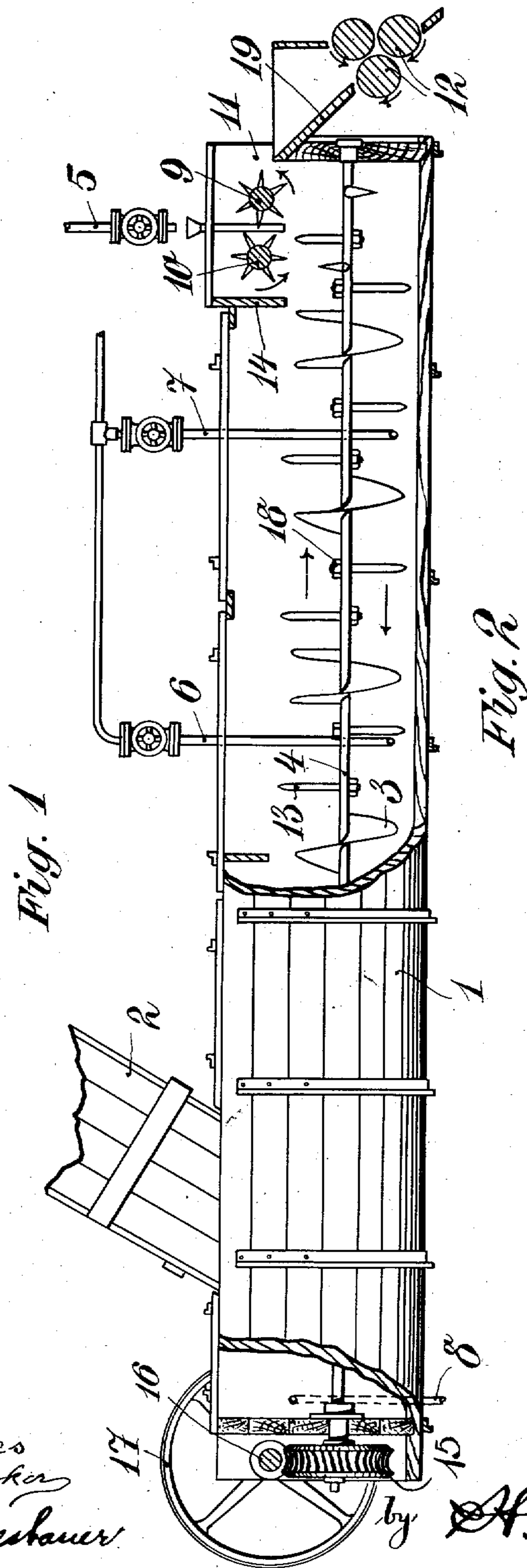


W. WIEGAND.  
 APPARATUS FOR MAKING EXTRACTS.  
 APPLICATION FILED JULY 15, 1909.

979,362.

Patented Dec. 20, 1910.



Witnesses  
*E. H. Hocking*  
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# UNITED STATES PATENT OFFICE.

WILHELM WIEGAND, OF MERSEBURG, GERMANY, ASSIGNOR TO RICHARD RIEDER, OF FRANKFORT-ON-THE-MAIN, GERMANY.

## APPARATUS FOR MAKING EXTRACTS.

979,362.

Specification of Letters Patent.

Patented Dec. 20, 1910.

Original application filed February 17, 1908, Serial No. 416,399. Divided and this application filed July 15, 1909. Serial No. 507,857.

*To all whom it may concern:*

Be it known that I, WILHELM WIEGAND, engineer, citizen of Germany, subject of the King of Prussia and Emperor of Germany, residing at Merseburg, in the Kingdom of Prussia and Empire of Germany, have invented new and useful Improvements in an Apparatus for Making Extracts, of which the following is a specification.

10 The invention refers to an apparatus for drawing extractive matter from different materials such as tannic materials, dye-wood, beet, and the like.

15 The apparatus is especially adapted for carrying out the process claimed in my U. St. application Ser. No. 416,399 filed February 17, 1908.

20 One object of the invention is the arrangement in an oblong horizontal receptacle having a conveying device, of especial means for stirring and mixing the solid material and bringing those parts of it which lie at first above the surface of the liquor into the body thereof.

25 A further object is that such stirring means consists of arms provided on a horizontal shaft of the oblong receptacle, helical conveying segments alternating with said arms on said shaft. Through the action 30 of this stirring and forwarding device the formation of large stagnant areas of liquor both in the upper and lower portion of the receptacle is avoided and the solid material is at the same time stirred in a vertical di- 35 rection and fed in a horizontal one.

40 A still further object is to provide an apparatus of this character which will be most simple and cheap in construction and which may be constructed of wood, this being of importance in view of the liability of iron and the like to be acted upon by tanning liquor.

45 With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangements of parts, as will be more fully described and particularly pointed out in the appended claim.

50 One form of construction of the device is illustrated in the drawing, Figure 1 being a side view of the apparatus partly in section and Fig. 2 a cross section of it.

In the drawing 1 is the closed trough

shaped wooden receptacle which may have a length of about ten to thirty and more 55 meters. This long receptacle is horizontally arranged and is provided with an entrance chute 2 for feeding the solid material from which the extract is to be drawn out. A long shaft 4 is arranged in the receptacle 60 and this shaft 4 may be rotated by means of the intermeshing gear wheels 15 and 16 and the belt pulley 17, connected with the gear 16. Helical segments 3 are attached to this shaft 4 at intervals and between these seg- 65 ments vertical stirring arms 13 are arranged, which may be fastened to the shaft 4 by nuts 18.

70 A pipe 5 serves for continuously introducing extracting liquor into the trough while through the pipes 6 and 7 steam may be blown into it if desired. 8 is the discharge pipe for the enriched liquor which opens at a fixed height in the receptacle 1 near the chute 2. 75

For the removal of the solid material from which the tanning, dyeing etc. principle has been extracted a discharging contrivance is affixed to the opposite end of the trough which in the instance illustrated consists of 80 rollers 9 and 10 provided with spikes or pins. These rollers 9 and 10 may be rotated by any suitable means from outside the receptacle.

11 is the discharge opening for the solid material and a funnel 19 is provided beyond 85 this opening outside the trough. Three rolls or cylinders 12 are arranged at the lower end of this funnel which may be turned in opposite directions as indicated by the arrows by any suitable means. 90

95 The material discharged from the vat by the rolls 9 and 10 falls through the opening 11 and the funnel 19 between these revolving cylinders or rolls 12 and is thereby freed from the extract adhering thereto. If, for example, it is desired to extract the tanning principle from tanniferous material, a purpose for which this device is eminently adapted, the device may be used in about the following manner: The fresh material is in- 100 troduced through the chute 2 while water is admitted through the pipe 5 and steam through the pipes 6 and 7 and the forwarding helix 3, 4 is made to revolve. By this means the tanniferous material is quite grad- 105 ually passed along toward the discharging

end of the trough and through the action of the stirring arms 13 and the helical segments 3 is at the same time thoroughly worked up and mixed with the liquor. The ingress and outlet of the liquor is so regulated that the level of the surface of the liquor is always below that of the goods from which the tanning is being extracted. The liquor consequently can advance only quite gently from its inlet through the tanniferous material to the outlet opening 8 by thoroughly penetrating step by step the material which lies in front of it and is forced against it. In this way experiments have proved that, without employing costly apparatus, extracts of very high concentration can be continuously produced. The solid material which is slowly moved without a great expenditure of power owing to the horizontal arrangement of the oblong receptacle by means of the helical segments toward the discharge end and is deprived of its extractible material in a corresponding rate becomes heaped up at the discharge end and by the help of the partition 14 in front of the rollers 10 makes then a steam tight closure for the receptacle and when it has become heaped up sufficiently high, is dis-

charged through the opening 11 by the help of the rollers 9 and 10.

Having now described my invention what I claim and desire to secure by Letters Patent of the United States is:

In an apparatus for the drawing of extractive matter from different materials the combination of a long horizontally arranged trough shaped wooden receptacle, a horizontal rotatable shaft within said long receptacle and provided with alternating helical segments and stirring arms, a chute and a liquor outlet at a high point near one end of said receptacle, a water inlet pipe and a discharge device for the solid material at the other end, said discharge device consisting of rollers with spikes arranged near the top of said latter end of the receptacle before a corresponding opening and behind a vertical partition pendent from the top into the long receptacle.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILHELM WIEGAND.

Witnesses:

HENRY HASPER,  
WOLDEMAR HAUPT.

Correction in Letters Patent No. 979,362.

It is hereby certified that Letters Patent No. 979,362, granted December 20, 1910, upon the application of Wilhelm Wiegand, of Merseburg, Germany, for an improvement in "Apparatus for Making Extracts," were erroneously issued to Richard Rieder, as owner of the entire interest, whereas said Letters Patent should have been issued to the inventor, *Wilhelm Wiegand and Richard Rieder, jointly*, said Rieder being assignee of *one-half* interest only, as shown by the record of assignments of this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 7th day of February, A. D., 1911.

[SEAL.]

C. C. BILLINGS,

*Acting Commissioner of Patents.*

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