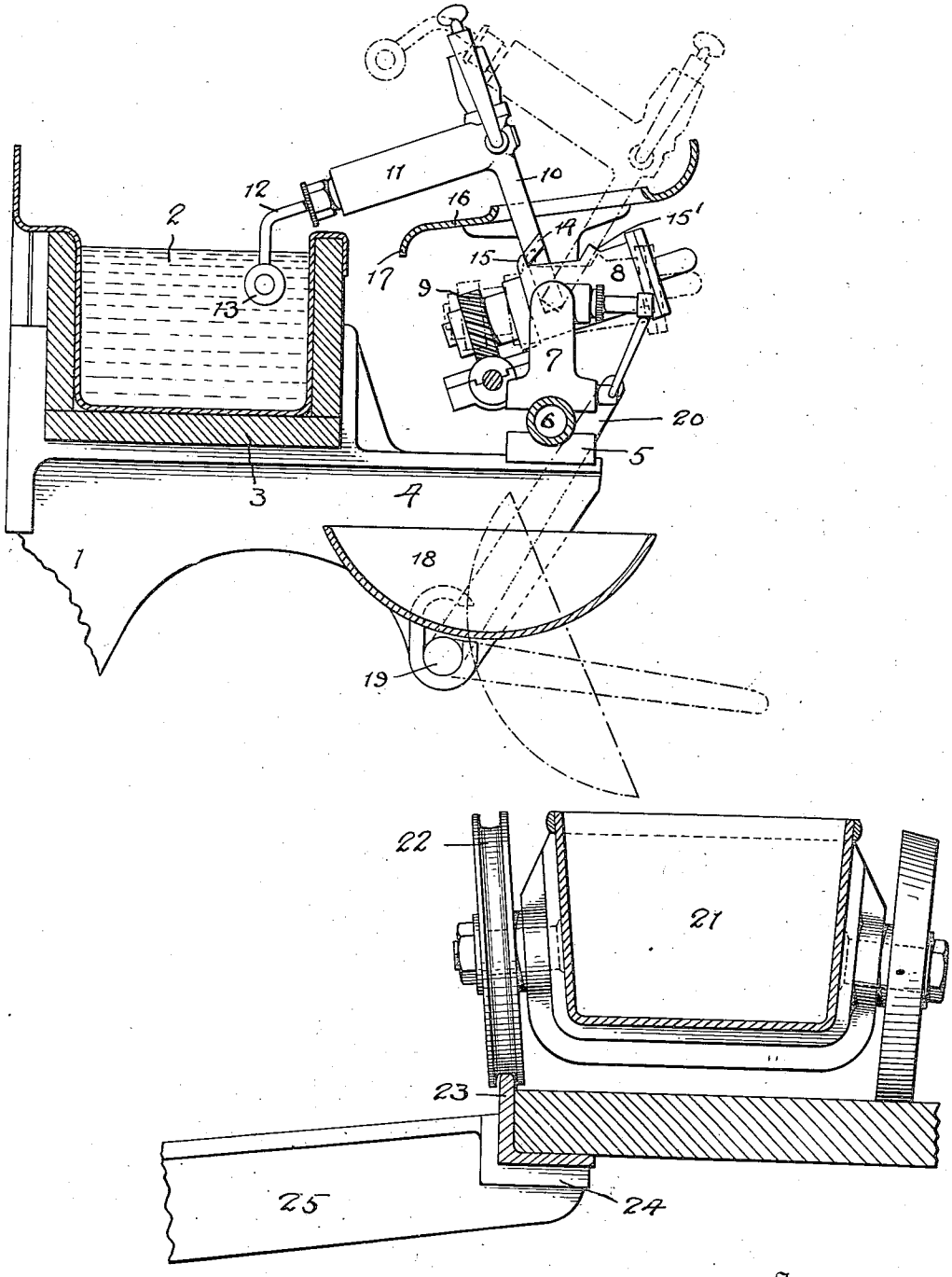
J. CLAYTON.

APPARATUS FOR SPINNING ARTIFICIAL SILK.

APPLICATION FILED OCT. 12, 1920.

1,425,368.

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR SPINNING ARTIFICIAL SILK.

1,425,368. Specification of Letters Patent. Patented Aug. 8, 1922.

Application filed October 12, 1920. Serial No. 416,535.

To all whom it may concern:

Be it known that I, JAMES CLAYTON, a subject of the King of Great Britain and Ireland, and a resident of Sebakwe, Babbicombe, county of Devon, England, have invented certain new and useful Improvements in Apparatus for Spinning Artificial Silk, of which the following is a specification.

My invention relates to artificial silk spinning apparatus, and particularly to the mounting of the spinning nozzle and associated parts. The object of my invention is to provide an improved assembly of the nozzle arm, filter and pump with relation to the driving apparatus, and for protecting the latter against fouling, as well as for catching and preserving waste solution.

The accompanying drawing shows the apparatus in side elevation with the setting bath, drip catcher, and collecting wagon in transverse section.

The present invention relates to apparatus adapted for the spinning of artificial silk. But a single spinning unit is illustrated, it being understood that in usual installations a series of such units is supported upon the frame 1 of the machine, and discharge a cellulose solution, such as viscose, into the setting bath 2 contained in a trough 3 extending the length of the frame. As here shown, the main frame is provided with a series of brackets, of which one, 4, is illustrated, provided at its outer end with a seat 5, upon which rests the supply pipe 6 running longitudinally of the frame, and through which the solution is supplied to the several spinning mechanisms. Between the legs of the standard 7 above the supply pipe is pivoted the casing 8 of a rotary feed pump, driven by the worm wheel 9 adapted to mesh with a worm on the longitudinal shaft 10 extending the length of the machine. Pivoted on the same axis between the standards 7, but independently of the pump, with which however it communicates, is the pipe 10 leading to and supporting the filter 11, from which emerges the stem 12 of the spinning nozzle 13. Upon the pipe 10 is fixed a stop 14 which works between a pair of lugs 15, 15′ on the pump casing 8.

Above the pump and protecting it and the driving gear is an inclined drip shield 16 slotted at 17 to permit the pipe 10 to work therein. The inner edge of the shield is down-turned at 17 to form a drip edge, from which waste solution falls clear of the pump and its mechanism to the drip pan 18 pivoted at 19 on the bracket, and provided with a handle 20 by which it may be swung to discharge position, shown in dotted lines. In this position it empties its contents to a wagon 21 traveling along the floor of the work room, and having at one side a grooved wheel 22 running on the guide rail 23 supported in the angle 24 of the foot piece 25 of the frame.

In the operation of apparatus of this type it frequently happens that the operative may desire to inspect the nozzle 13 to observe whether or not its orifice or orifices have become obstructed. This operation can best be performed while the pump 8 is still in operation. In the present arrangement this is accomplished by grasping the upper portion of the filter 11 and tilting the latter from its spinning position, shown in full lines, to a raised position intermediate that shown in full lines and that indicated in dotted lines. In this position the stop 14 on the pipe 10 moves away from the lug 15 on the pump casing 8, but does not impinge against the lug 15′. Inasmuch as the engagement between the worm wheel 9 and the worm on the shaft 10 is not broken, the pump continues to operate, and the feed to the nozzle is uninterrupted. The solution discharged from the nozzle is now deposited in the pan 18 and is gathered for recuperation. Should it be desired to interrupt the spinning operation, however, the operative has but to swing the nozzle further in the same direction to the position shown in dotted lines. This motion brings the stop 14 on the pipe 10 into engagement with the stop 15′ on the pump casing and tilts the latter on its axis to the position shown in dotted lines, thus lifting the worm wheel 9 out of mesh with the worm on the shaft 10 and automatically halting the feed from the pump by the interruption of the drive. The drip from the nozzle is now caught on the drip shield 16 and falls from the edge 17 to the drip pan 18, thus protecting the gear 9 and the associated elements beneath the shield 16 from fouling.

When the drip pans 18 on the frame accumulate sufficient waste, the attendant passes in front of the frame with the wagon 21, and tilting the several pans 18, discharges their contents into the wagon.

It will be observed that but a single motion by the operative is required to stop the feed to the spinning nozzle, and the motion is but a continuation of that required to lift the spinning nozzle from the setting bath. The lost-motion connection between the nozzle element and the pump casing nevertheless affords opportunity for the operative to inspect the nozzle orifices without interrupting the flow of solution through the nozzle. The return of the nozzle to the setting bath automatically restores the feed by reason of the impingement of the stop 14 against the lug 15 on the pump casing, so that the latter is automatically tilted again to a position in which the worm wheel 9 meshes with the worm on the spindle 10, thus restoring the pump drive and the feed to the nozzle.

Obviously the filter 11 may be arranged in any suitable position, and need not form a portion of the nozzle element, although I prefer this construction. Various modifications in detail of arrangement of the structural parts will readily occur to those dealing with the problem, without departing from what I claim as my invention.

I claim—

1. In apparatus of the type described, a movable spinning nozzle, a pump delivering liquid thereto, disconnectible driving gear for the pump, and an operative connection between the nozzle and pump driving gear to disconnect the latter on the operative movement of the spinning nozzle in one direction.

2. In apparatus of the type described, a spinning nozzle, a pump delivering liquid thereto, disconnectible driving gear for the pump, and a lost-motion connection between the nozzle and gear for disconnecting the latter after a predetermined extent of movement of the spinning nozzle in one direction.

3. In apparatus of the type described, a movable spinning nozzle, a pump for delivering liquid thereto, driving gear for the pump, and means operated by the spinning nozzle for rendering the pump drive inoperative upon predetermined motion of the spinning nozzle.

4. In apparatus of the type described, a pivoted spinning nozzle, a pivoted casing for the pump delivering liquid thereto, disconnectible driving gear for the pump and moving with the pump casing, and an operative connection between the nozzle and pump casing for moving the latter to disconnect its driving gear on the movement of the spinning nozzle in one direction.

5. In apparatus of the type described, a pivoted spinning nozzle, a pump delivering liquid thereto, disconnectible driving gear for the pump, and means operated by the spinning nozzle for rendering said gear operative or inoperative.

6. In apparatus of the type described, a movable nozzle, a pump for delivering liquid thereto, gear for driving said pump, a drip shield apertured to permit the movement of the nozzle therethrough but arranged between the nozzle and the pump and its associated gear to protect the latter from drip, together with a pivoted drip pan arranged below the pump and adapted to collect the drip from said shield.

7. In apparatus of the type described, a movable spinning nozzle, means for supplying liquid thereto, a drip pan beneath said nozzle and supply means, and a collecting receptacle movable to position beneath the drip pan and into which the latter may be discharged.

8. In apparatus of the type described, a frame, a spinning nozzle movably supported thereon, a drip pan carried by the frame beneath the spinning nozzle, and means for operating said drip pan to discharge its contents to a collecting receptacle.

9. In apparatus of the type described a spinnning frame, a spinning nozzle supported thereon, means carried by the frame for supplying liquid to said spinning nozzle, a drip shield overlying said liquid supply means and underlying the nozzle, together with a drip pan carried by the frame and underlying said supply means, said drip pan being located to receive the discharge from the drip shield.

In testimony whereof I have signed my name to this specification.

JAMES CLAYTON.