A. SCHWEIZER.

PROCESS OF AND MACHINE FOR MAKING GLUE AND THE LIKE.

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1,318,464. Patented Oct. 14, 1919.

Fig. 1.

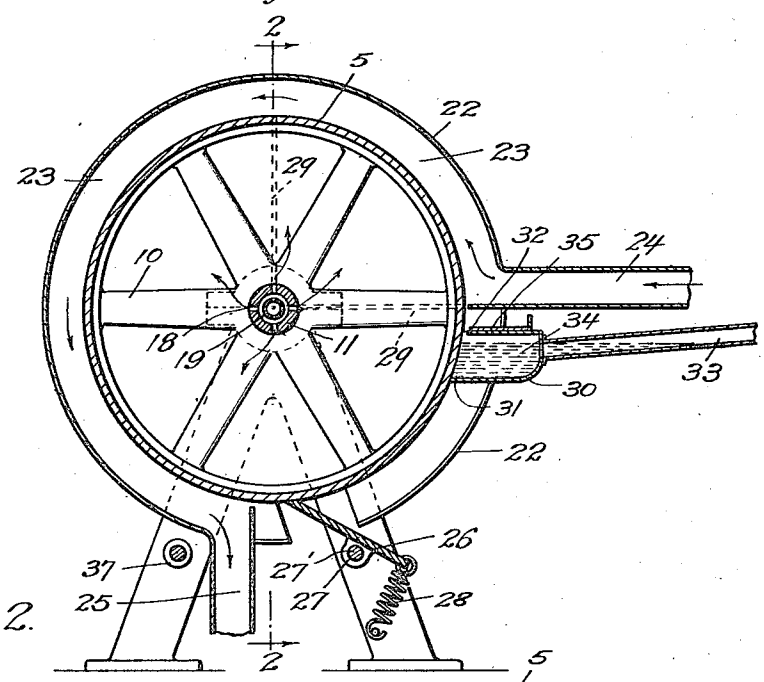
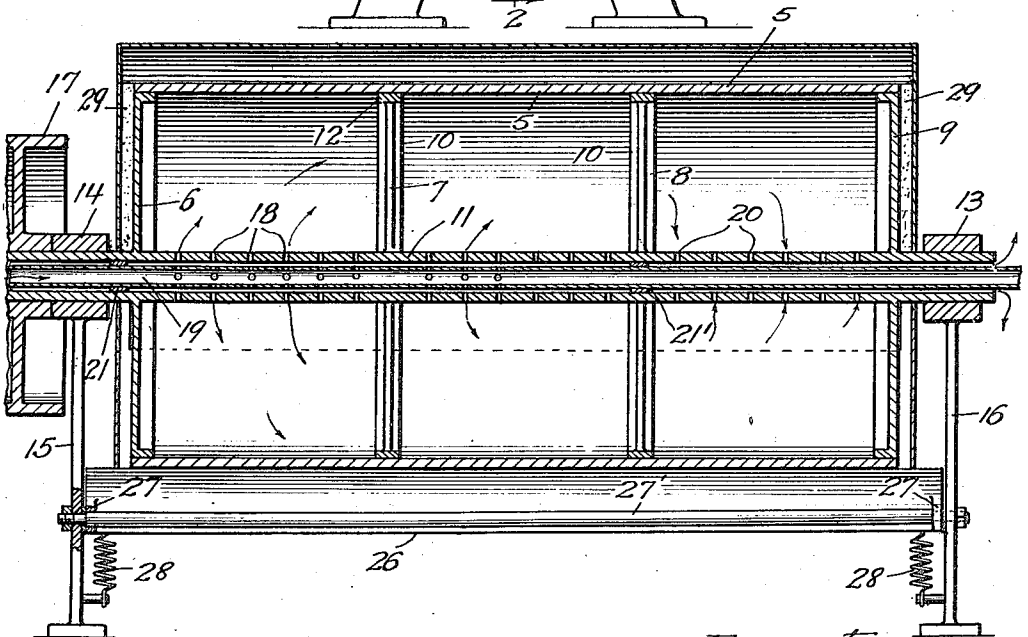


Fig. 2.



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PROCESS OF AND MACHINE FOR MAKING GLUE AND THE LIKE.

1,318,464. Specification of Letters Patent. Patented Oct. 14, 1919.

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To all whom it may concern:

Be it known that I, ADOLPH SCHWEIZER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Processes of and Machines for Making Glue and the like, of which the following is a specification.

My invention relates to improvements in a process of and machine for making glue, gelatin and the like.

In the usual process of making glue and gelatin, animal tissue, having first been properly treated, is boiled in solution with water until a colloidal liquid of a gelatinous nature is obtained. This is spread out in thin sheets and chilled, after which it is cut into suitable size strips or slabs and dried and finally again divided into smaller pieces and properly prepared for the market.

One of the objects of my invention is to hasten and cheapen the process by omitting the step of cooling prior to the drying step in the process, by dehydrating or directly eliminating the proper quantity of moisture content, thereby producing the hardening effect without the necessity of first cooling and subsequently drying the jelly-like liquid.

Another object of my invention is to provide a simple and efficient machine for carrying my process into effect.

Other and further objects of my invention will become readily apparent, to persons skilled in the art, from a consideration of the following description when taken in conjunction with the drawings, wherein—

Figure 1 is a transverse section through the machine; and

Fig. 2 is a central longitudinal section taken on line 2—2 of Fig. 1.

In both views the same reference characters are employed to indicate similar parts.

A cylinder 5 is supported upon spiders 6, 7, 8 and 9. The two end supports are disks to close the ends of the cylinders. The other two comprise spokes 10, which connect the hub portion 11 with the rim portion 12. The rim portion 12 of the spiders is turned true, so as to fit neatly inside of the cylinder 5. The hub portion 11 extends the full length of the cylinder, and beyond, it being supported in bearings 13 and 14 that are provided on the top of the standards or end frames 15 and 16. Secured to the outer end of the hub portion 11, is a driving pulley 17, which may be rotated by any suitable means. The hub portion is perforated, as at 18, to admit heated air, steam or other heating agency or fluid into the interior of the cylinder 5, that may come through the pipe 19. Other perforations 20 in the hub are provided, through which exhaust steam may pass out of the cylinder, between the hub 11 and the steam pipe 19. A packing ring 21 is placed in the hub portion 11, centrally supports the steam pipe 19, and prevents communication between the live and exhaust steam. Another similar ring 21′ is placed between the steam pipe 19 and the hub cylinder 11 to prevent the steam or hot air from flowing backwardly from the pipe 19 without entering the interior of the cylinder 5. A jacket 22 surrounds the cylinder and is spaced apart therefrom to provide a space 23 through which hot dry air may flow from the inlet 24 to the discharge outlet 25. A scraper, or blade 26, extends the full length of the cylinder and is pivoted at each end, as at 27, to the standards 15 and 16 and is held in yielding contact with the outer surface of the cylinder 5 by springs 28.

A strip of felt 29 or other suitable packing material is placed radially from the hub 11 to the outer diameter of the cylinder 5 to prevent the hot air that comes in through the inlet 24 from short circuiting across the diameter of the cylinder at its ends. A scoop-shaped receptacle 30 extends across the outer peripheral surface of the cylinder with its lower edge 31 in substantially direct contact therewith, and its upper edge 32, slightly removed from the contact of the cylinder. The scoop-shaped receptacle 30 is connected by a pipe 33 with a reservoir which contains a hot gelatinous liquid 34, that fills the scoop.

In carrying my process into effect, the cylinder 5, as illustrated in Fig. 1, is rotated anti-clockwise and hot air, steam or other heating agency is admitted through the pipe 19 into the interior of the cylinder so as to heat the cylinder 5 to a temperature that will not be injurious to the gelatinous film that is to be dried on the outside of the cylinder but preferably to a temperature

higher than that of the contacting solution. As the cylinder is rotated, in the manner described, a film of liquid from the scoop 30 will adhere to the adjacent outside surface of the cylinder 5, thereby uniformly covering the outer surface of the cylinder as it is rotated. The thin film of gluey substance adhering to the outer surface of the cylinder encounters the hot air that will enter the conduit 24, and being in contact with the relatively hot wall of the cylinder 5, will rapidly give up its moisture to the traveling current of hot dry air, which will absorb it and be exhausted through the opening 25. When the film of gelatinous substance thus formed upon the cylinder, encounters the knife, or scraper 26, the sharp point of which bears against the surface of the cylinder, the material has become substantially dried and will readily peel off from the outer surface of the cylinder in thin, substantially continuous sheets, which sheets may be subsequently divided in to suitable sizes, convenient for marketing purposes. The scoop-shaped receptacle 30 should be maintained substantially filled with the liquid and the upper wall should be cut back to a point 32 so that the clinging material, to the outer surface of the cylinder, may pass by this point uninterruptedly, or this wall may be horizontally adjusted as to regulate the thickness or amount of liquid that will cling to the cylinder, and for this purpose I have shown a plate 35 overlying the upper wall of the scoop and capable of being adjusted toward or from the outer surface of the cylinder 5.

The standards 15 and 16 may be properly spaced apart and so held by the rods 27' and 37.

While I have herein shown a single embodiment of my invention for the purpose of clear disclosure, it is manifest that changes may be made in the general arrangement and form of the parts of the apparatus within the scope of the appended claims.

Having described my invention, what I claim is:—

1. The process of making glue or gelatin, which consists in boiling animal tissue, or similar substance, until the solution will coagulate, when cool; lifting the adhesive liquid thus obtained, while hot, from a body thereof by surface contact with a moving hot dry surface against the action of gravity, to provide a single, smooth, uniformly continuous thick film; constantly moving the said surface and deposited film; passing a current of hot dry air over the entire surface of the film in a path parallel with the path of movement of the film while moving and continuously removing the film of dried deposit from the moving surface after it leaves the influence of the hot air.

2. A machine for the purpose described having in combination a rotatable drum, means to admit steam to the interior of the drum; an air jacket surrounding substantially 270 degrees of the exterior surface of the drum; air admitting and discharging conduits at the respective ends of the jacket; a glue receiving receptacle having one of its walls provided by the drum, its lower wall in substantial contact with the outside surface of the drum; a scraper bearing upon the drum, said receptacle and scraper being within the zone unoccupied by the air conducting jacket.

In testimony whereof I hereunto set my hand.

ADOLPH SCHWEIZER.