

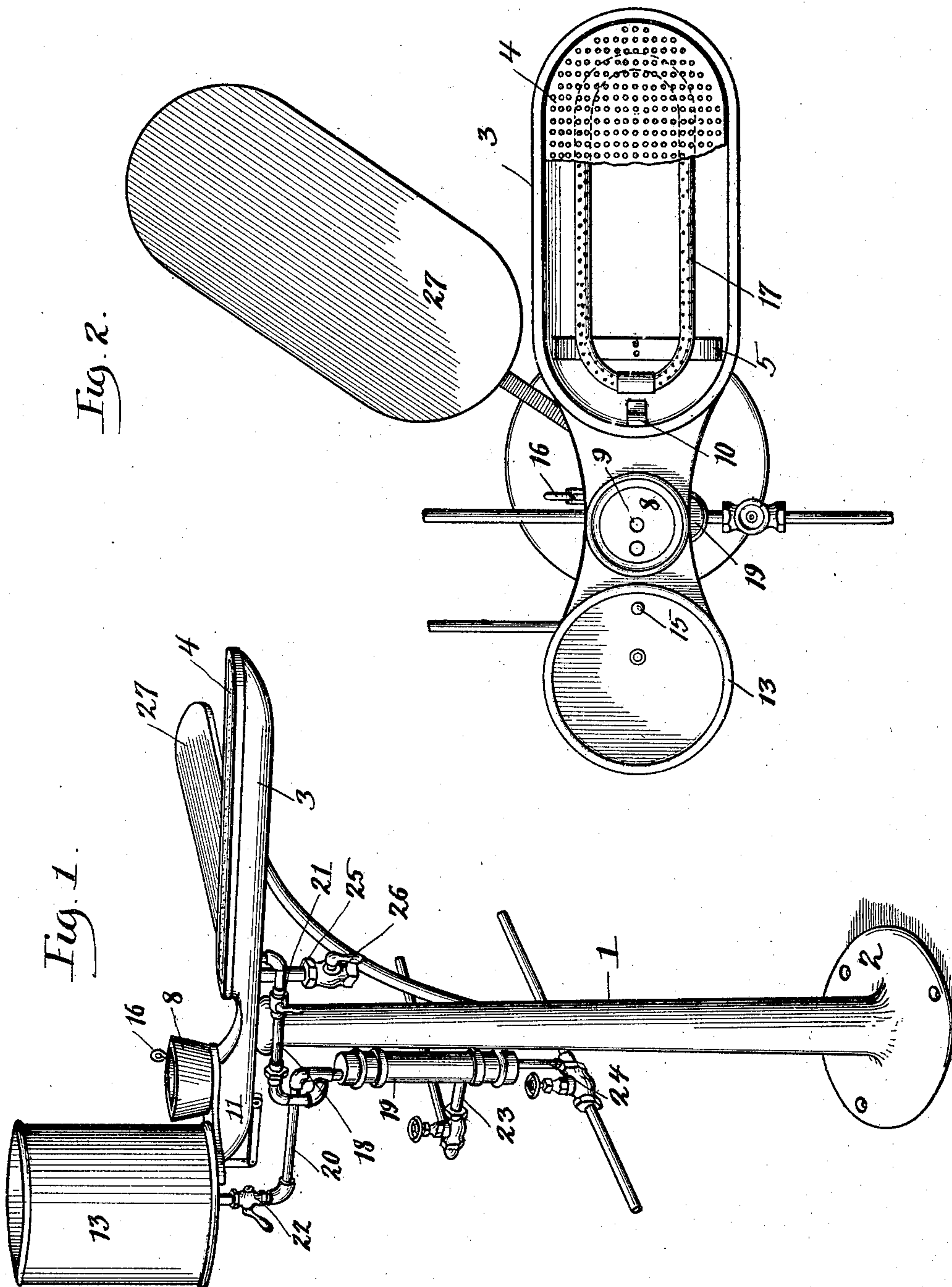
No. 736,601.

PATENTED AUG. 18, 1903.

J. HUEBSCH.  
STARCHING MACHINE.  
APPLICATION FILED SEPT. 27, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

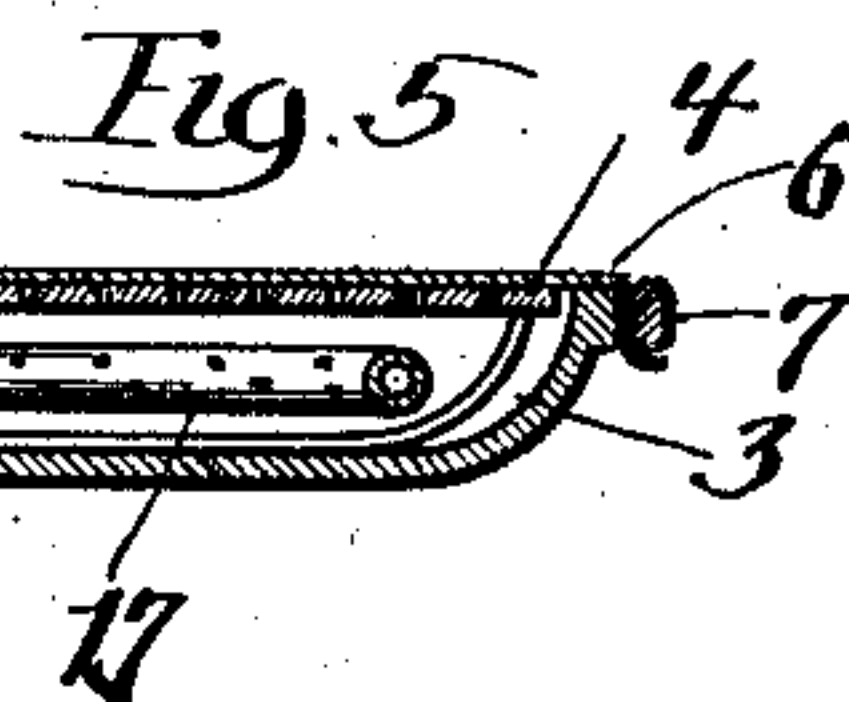
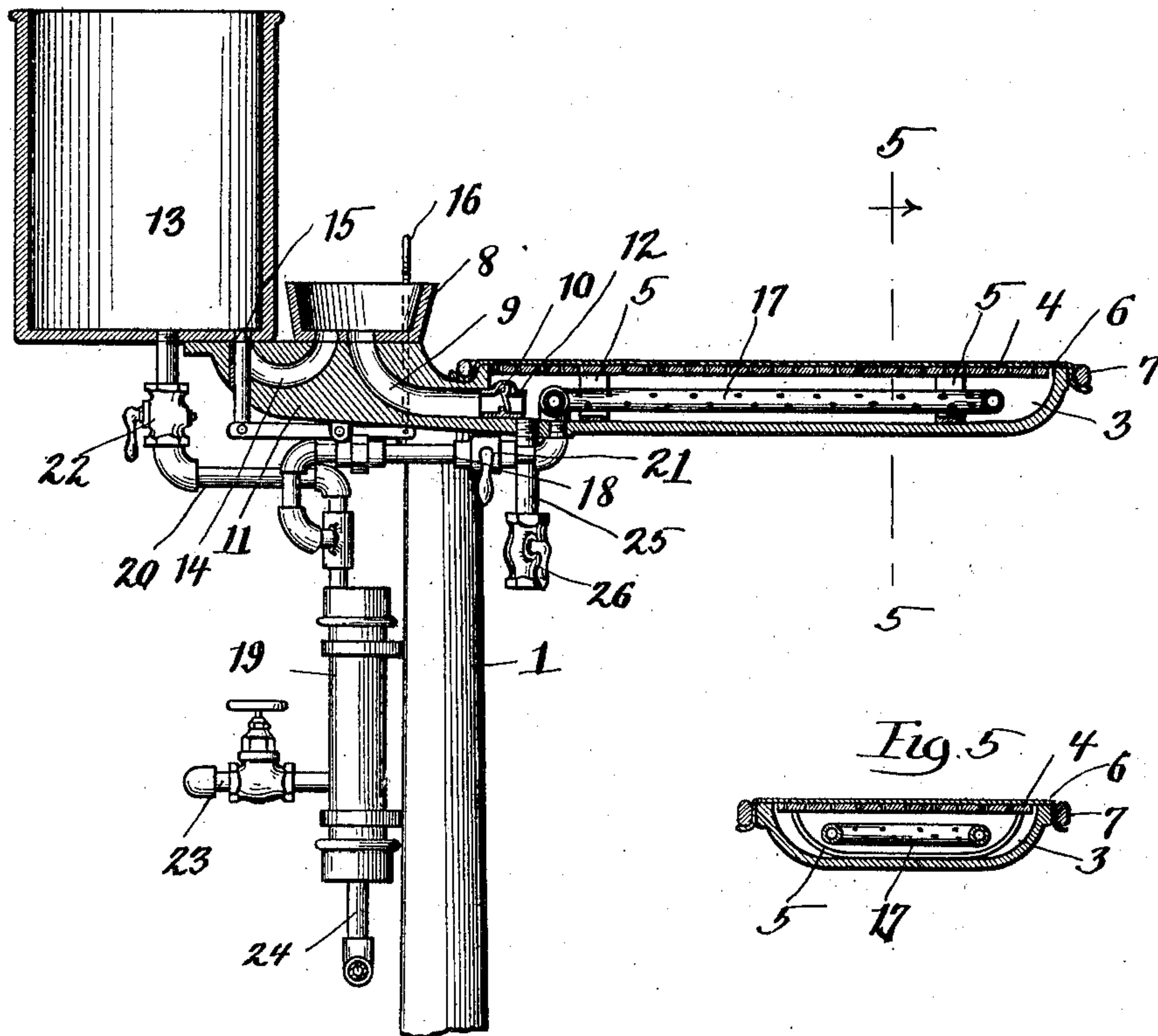
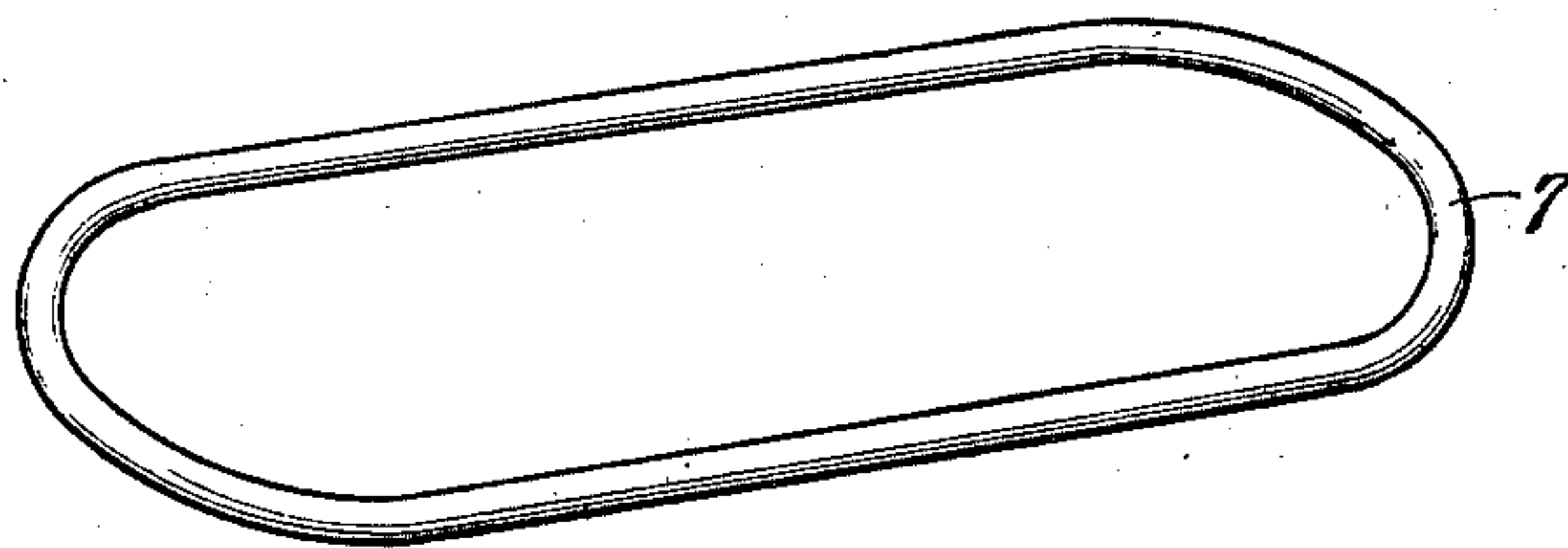


Fig. 4.



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# UNITED STATES PATENT OFFICE.

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## STARCHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 736,601, dated August 18, 1903.

Application filed September 27, 1902. Serial No. 125,021. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH HUEBSCH, a citizen of the United States, residing at the city of Eau Claire, in the county of Eau Claire and State of Wisconsin, have invented certain new and useful Improvements in Starching-Machines, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This invention has relation more particularly to that class of starching-machines in which the application of starch to shirt-bosoms, collars, cuffs, and like garments is effected; and the main object of the invention is to provide a simple and effective machine whereby the starch may be applied to the garment and may be thoroughly worked into it at the same time that the garment is being stretched and any wrinkles, creases, or the like are being removed therefrom.

The invention consists in the novel features hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in claims at the end of this specification.

Figure 1 is a perspective view of a starching-machine embodying my invention. Fig. 2 is a plan view of the machine, the fabric covering being removed from the starching-plate and this plate being partially broken away to expose the subjacent parts. Fig. 3 is a view in vertical longitudinal section. Fig. 4 is a detailed view of the clamping-ring whereby the fabric covering is held over the starching-plate. Fig. 5 is a sectional view on line 5 5 of Fig. 3.

Like numerals of reference designate corresponding parts in the several figures of the drawings.

The frame of the machine, which may be of any suitable construction, is shown as consisting of a pedestal 1, having at its lower end an expanded base 2, that is perforated for the reception of screws or other suitable fastening devices whereby the frame is secured to the floor or other supporting-surface. To the top of the pedestal 1 is secured a pan or receptacle 3, that is preferably shallow and is designed to contain starch that may be delivered thereto from a suitable reservoir. In the open top of the pan 3 loosely sits the

starching-plate 4, that is a perforated or open-work plate of rigid material adapted to support the garment to be starched and to enable the stretching of the garment and the removal of wrinkles or creases to be effected by the same operation, whereby the starch is applied and worked into the garment from its under side. The starching-plate 4 is preferably of brass or like rigid and non-corrodible material and by preference is supported upon suitable springs that serve to normally hold the plate 4 approximately upon a level with the top of the pan or receptacle 3. The supports for the starching-plate 4 may consist of plate-springs 5, suitably held within the pan or receptacle 3 and extending from side to side thereof, the bent ends of these springs 5 bearing against the under side of the starching-plate 4. Preferably, although not essentially, the upper surface of the starching-plate 4 is provided with a fabric covering 6 of one or more layers of cheesecloth or like material, that may be secured to the top of pan or receptacle 3 by the clamping-ring 7, as clearly shown in Fig. 3 of the drawings. The fabric covering 6 has the advantage of aiding in the more uniform distribution of the starch over the starching-plate 4 and as well also aids in the straining of the starch before it passes to the garment above it.

From the foregoing description it will be seen that when a shirt or like garment to be starched is placed over the starching-plate 4 the operator by the act of running his hands over the surface of the garment to straighten it and remove creases and wrinkles therefrom will depress the plate 4, thereby causing starch to rise through the perforations of the plate and to pass upward into and through the garment. Inasmuch as the plate 4 is of rigid material, the pressure exerted thereon forces the starch through the plate at different points, and the flat surface of the plate enables the garment to be readily smoothed and straightened at the same time that the starch is being forced upward into and through the garment.

Liquid starch may be supplied to the pan or receptacle 3 in any suitable manner; but, preferably, the pan or receptacle is connected with an elevated starch-bowl 8 by a short



passage 9, that may be formed in an extension at one end of the pan or receptacle, and a check-valve 10, interposed in the passage 9, may be employed to permit starch to flow  
 5 freely into the pan or receptacle 3, while preventing the backflow of the starch from the pan or receptacle when the starching-plate 4 is depressed in manner heretofore described. The check-valve 10 may be mounted in a  
 10 short tube or nipple 12 at the mouth of the passage 9; but this is not essential, and any suitable form of check-valve may be used. The extension 11 at the end of the pan or receptacle 3 has connected thereto a starch-res-  
 15 ervoir 13, from the bottom of which a passage 14 leads to the starch-bowl 8. A cut-off valve 15, of suitable construction, is employed to control the flow of starch from the reservoir 13 into the bowl 8. As shown, the valve 15  
 20 is operated by a pivoted lever, to the opposite end of which lever is connected a rod or handle 16, by which the valve 15, that is held normally closed, may be opened from time to time to admit a fresh supply of starch from  
 25 the reservoir 13 into the bowl 8. While the check-valve 10 serves to prevent the backflow of the starch from the pan or receptacle 3 into the bowl 8, it will be seen that when pressure incident to the stretching of a gar-  
 30 ment is relieved from the starching-plate 4 and this plate is forced upward by the springs that support it the check-valve 10 will open and permit starch to pass from the bowl 8 into the pan or receptacle 3 to replace the  
 35 amount of starch that has been taken up by the garment. The operator may from time to time replenish the supply of starch in the bowl 8 by merely manipulating the handle 16 of the valve 15.  
 40 Within the pan or receptacle 3 is arranged a perforated steam-distributing pipe 17, which supplies steam to the starch in order to maintain it at the proper temperature. The steam-distributing pipe is connected by a short pipe  
 45 18 with a steam-drying cylinder 19, that is also connected by a short pipe 20 with the starch-reservoir 13. These pipes 18 and 20 are provided with suitable valves 21 and 22 for regulating the supply of steam to the pan  
 50 or receptacle 3 and to the reservoir 13. The cylinder 19, that is connected with a suitable steam-supply pipe 23, is designed to be provided with means for drying the steam to prevent excess moisture from being carried by  
 55 the steam to the starch. This steam-drier 19, which forms no part of the present invention and is not essential thereto, is shown as provided with a drip-pipe 24 for carrying off the water of condensation. The pan or re-  
 60 ceptacle 3 is shown as being provided with depending drain-pipe 25, that is furnished with a cut-off valve 26, this pipe enabling water or other liquid to be readily withdrawn from the pan or receptacle when the latter is  
 65 to be cleaned. I wish it distinctly understood that the precise details of construction

set out may be varied within wide limits without departing from the spirit of invention and that features of the invention may be employed without its adoption as an en-  
 70 tirety. So far as I am aware my invention presents the first instance of a starching-machine having a starching-plate or garment-supporting surface that is perforated (and by this term I include a reticulated, foraminous, or  
 75 other open-work plate) and is formed of rigid material, the plate being supplied from beneath with starch, so that by one and the same operation the garment may have starch ap-  
 80 plied thereto and worked into it and may have the creases and wrinkles removed from it. I believe also that this invention offers the first instance of a starching-machine comprising  
 85 a perforated starching-plate of rigid material that is yieldingly supported above a starch-containing pan or receptacle, so that the plate serves as a support over which the garment  
 90 may be stretched and smoothed, while the depression of the plate insures the forcing of the starch upward through the plate and into  
 and through the garment.

As shown, the pedestal 1 of the machine is provided at one side with a shelf 27 for supporting the work, and this shelf may be constructed and connected to the pedestal 1 in  
 95 any desired way. In practice the garment to be starched will be placed over the starching-surface with the wrong side of the garment downward, and it will be seen that  
 100 as the starch is forced upward through the garment in the manner above described the garment itself will aid in straining the starch, so that no specks may appear upon  
 the exterior or right side of the garment. The advantage of my machine will be ap-  
 105 preciated by any one familiar with this class of apparatus, as it provides a most simple and effective means by which the starching and the straightening and smoothing of  
 110 garments can be effected by one and the same operation, so that, if desired, the garment may be transferred directly to the dry-room  
 and without the intermediate straightening and smoothing operation that is necessary  
 115 where the starch has been applied by machines in which the garment is immersed in the starch and is subsequently operated on  
 by rollers or the like for expelling the superfluous starch.

Having thus described my invention, what  
 120 I claim as new, and desire to secure by Letters Patent, is—

1. A starching-machine comprising a perforated starching-plate of rigid material over which a garment or other fabric may be  
 125 straightened simultaneously with the starching operation, and means for supplying starch to the under side of said plate.

2. A starching-machine comprising a perforated starching-plate of rigid material, a  
 13 starch-receptacle beneath said perforated plate for delivering starch to the under side



of said plate, and an elevated starch-containing bowl for supplying starch to said receptacle.

3. A starching-machine comprising a starch-receptacle provided with a perforated cover forming a starching-plate fitting loosely and depressibly within said receptacle and means for restoring said cover to normal position after the pressure thereon has been relieved.

4. A starching-machine comprising a starch-receptacle provided with a perforated spring-supported starching-plate over which a garment or other fabric may be straightened and stretched, and means for supplying starch to the receptacle.

5. A starching-machine comprising a perforated starching-plate provided with a cover of suitable fabric and means for supplying starch to the under side of said perforated plate.

6. A starching-machine comprising a frame or stand, a starch-receptacle provided with a perforated starching-plate forming a cover for said receptacle, a bowl connected by a suitable channel with said starch-receptacle and adapted to deliver the supply of starch thereto, a check-valve between said bowl and said starch-receptacle, a starch-reservoir connected with said bowl and a valve for controlling the flow of starch from said reservoir to said bowl.

7. A starching-machine provided with a starching-surface having a backing of rigid material and arranged to receive a garment or other fabric to be starched and adapted to permit the same to be straightened and stretched over it simultaneously with the starching operation, said starching-surface being bodily depressible to enable the exterior pressure on the garment or fabric to force starch through the starching-surface and a

yieldable device normally supporting the starching-surface and adapted to return the same to its normal position when pressure is relieved therefrom.

8. A starching-machine comprising a frame or stand having a starch-receptacle, a cover-plate for the top of said receptacle provided with openings or apertures and a fabric extending over said plate and over said receptacle, said plate and said fabric being depressible within said receptacle whereby starch will be forced through said plate and said fabric covering it to the garment placed thereon.

9. A starching-machine comprising a pan or receptacle adapted to receive starch, a perforated cover-plate for said receptacle, springs for yieldingly supporting said plate, a fabric covering arranged above the plate and stretched over the edge of the receptacle and a clamping-ring for retaining the fabric covering in position.

10. A starching-machine comprising a frame or stand, a starch-receptacle, an open bowl adapted to receive starch and located above and connected with the starch-receptacle, a starch-reservoir connected with said bowl, means for controlling the flow of starch from said reservoir to said bowl, a flexible cover of suitable fabric arranged across the top of said receptacle and adapted to be depressed therein to force starch through it, a check-valve for retaining the starch in the receptacle when the flexible covering is depressed, and a yieldable device supporting the flexible covering and adapted to return the same to normal position when the pressure upon said covering is relieved.

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