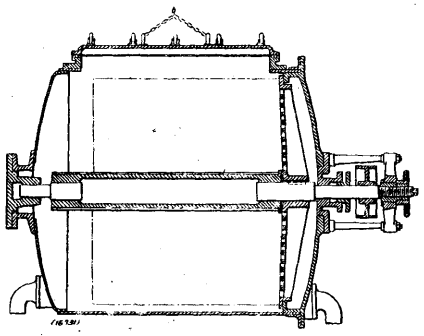
TEXTILE MACHINERY.

16,731. W. Mather, Manchester. Fabric Bleaching Apparatus. [7 *Figs.*] August 17, 1899.—In apparatus for bleaching cotton fabric without twisting or creasing it; the web (or webs temporarily connected together) is passed through an opening on the upper side of a cylindrical vessel, and in that vessel is wound upon a fluted mandrel so as to form a roll. The vessel being then closed, the fabric is pushed against a perforated partition, which separates from the main vessel a compartment at one end of it. The vessel is partially filled with the solution with which it is desired to impregnate the web, so that while the web is being wound upon the fluted core it becomes saturated with the solution. After the vessel is closed, further solution is added to fill the vessel, and by means of a pump, pipes, and valves the solution is caused to circulate from the main vessel to the compartment, or *vice versâ*; passing in its course through and between the convolutions of the rolled web, in streams approximately parallel



to the axis of the roll. In order to insure that the flow shall be parallel to the axis of the roll, the web, before it is rolled, may have pieces of impervious fabric attached to its ends so that, when rolled, these pieces form internal and external covers preventing radial flow of the fluid. During the circulation of the fluid, the roll of cloth and the perforated plate against which it is pressed are slowly revolved so as to bring every portion of the roll under the same conditions of circulation, and thus secure uniformity of treatment. The solution may be heated in the course of circulation, and may be applied under pressure. After treatment the door on the top of the vessel is again opened, and the roll being moved away from the perforated partition plate so that it can revolve freely, the web is unwound and then conducted onwards to be soured if necessary; and finally washed by apparatus in which it takes a zigzag course and is sprayed upon by jets of liquid. (*Accepted August* 15, 1900.)