

(No Model.)

J. B. FESSY.

MEANS FOR BLEACHING PAPER PULP, &c.

No. 311,425.

Patented Jan. 27, 1885.

Fig. 1.

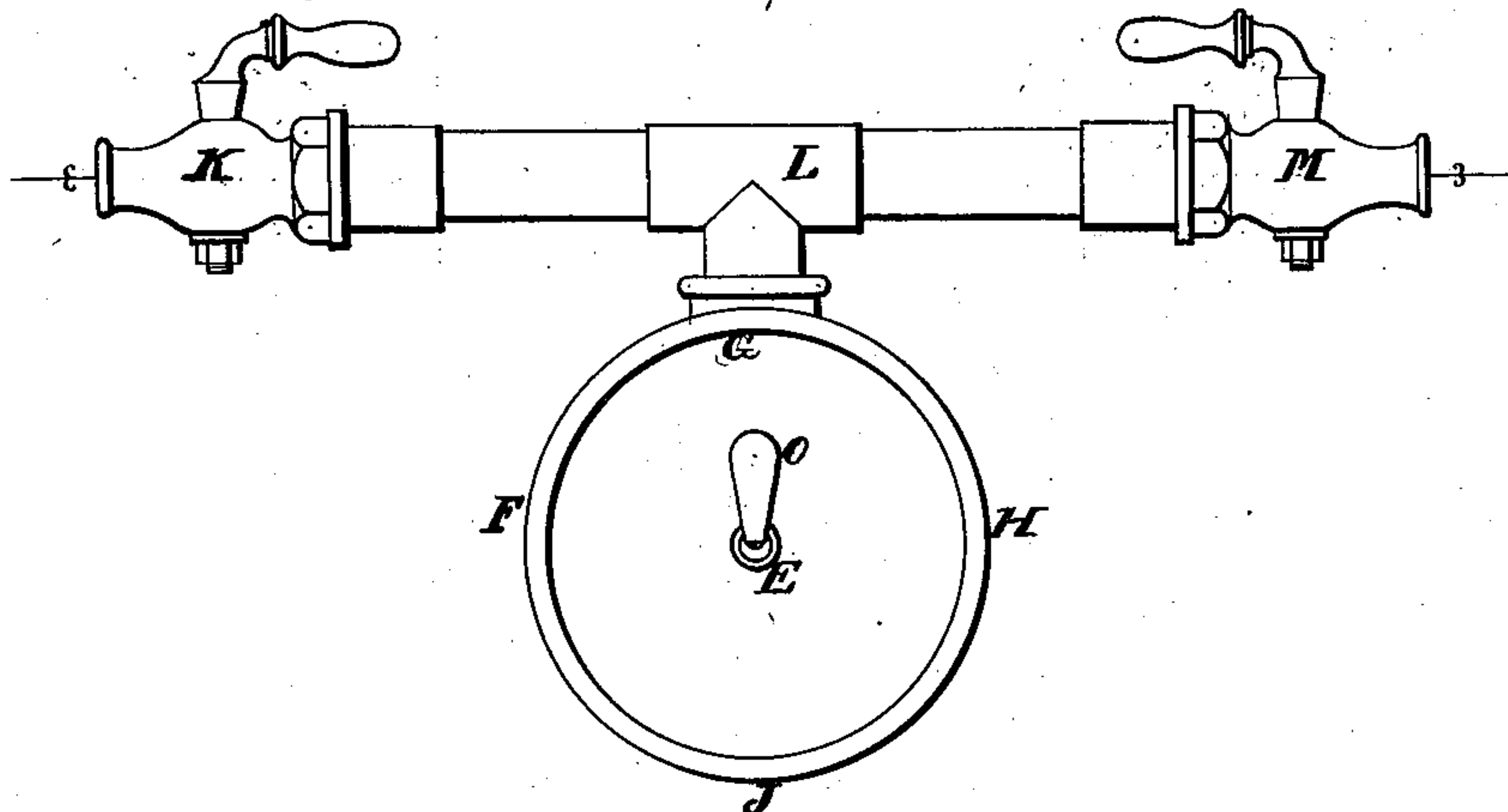
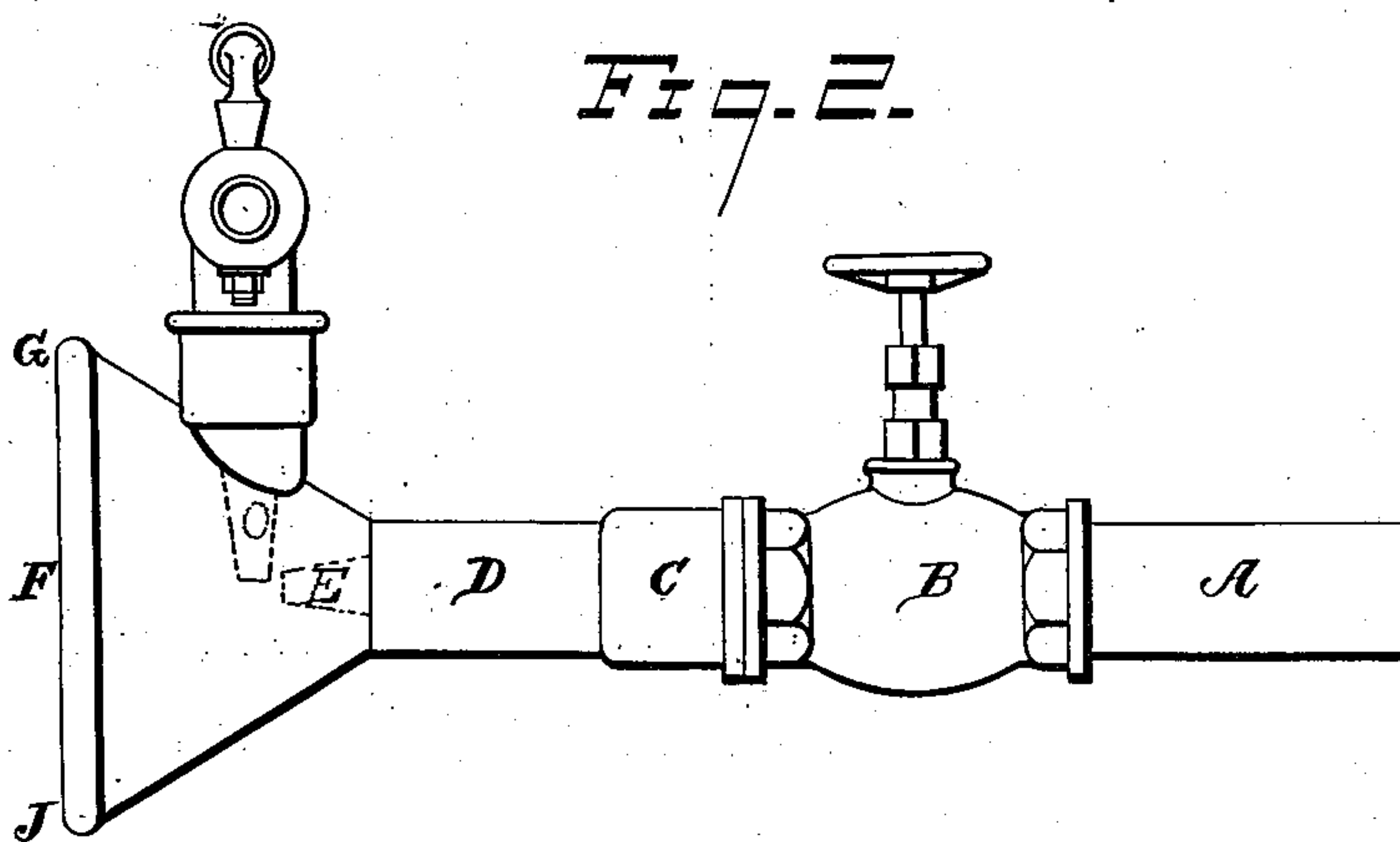


Fig. 2.



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## MEANS FOR BLEACHING PAPER-PULP, &c.

SPECIFICATION forming part of Letters Patent No. 311,425, dated January 27, 1885.

Application filed June 30, 1884. (No model.) Patented in France May 5, 1884, No. 161,904; in England May 9, 1884, No. 7,511, and in Germany May 17, 1884.

*To all whom it may concern:*

Be it known that I, JEAN BAPTISTE FESSY, a citizen of the Republic of France, and residing in Saint-Etienne, Loire, France, have invented Improvements in Bleaching Paper-Pulp or other Materials, of which the following is a specification.

Hitherto the bleaching of materials for paper-making and the bleaching of other materials has been effected by immersion in baths of different kinds, whereby there results a considerable loss of the bleaching agents, in consequence of a great quantity being required for the immersion of the materials.

This invention has for its object to effect economy in the cost of bleaching by reason of the small quantity of bleaching agents required, and to save time, owing to the rapidity with which the process can be performed, by effecting the thorough utilization of the action which develops from the decolorizing agents when in a nascent condition.

To attain these objects according to this invention, the bleaching or decolorizing is effected by submitting the materials to be bleached to the action of a solution or solutions of the bleaching or decolorizing agents when in a state of pulverization, spray, or fine division, which may be effected by causing the said agents, while under pressure, to impinge or come in contact with a resisting medium, or to be dispersed by steam or compressed air, and I submit the materials to be bleached to the action of this finely-divided agent or agents, whereby the bleaching or decolorizing can be effected readily and to any required degree. The bleaching agents may be of the usual kind; but for decolorizing paper-pulp I prefer to use chlorous acid.

In the drawings, Figure 1 is an end elevation, and Fig. 2 a side elevation.

I may employ for the purposes of this invention an apparatus analogous to the pulverizer of Koerting Brothers, but constructed as follows: The steam or other fluid passes through a tube, A D, Figs. 1 and 2, and stop-cock B into a nozzle, E, from whence it issues under pressure into a funnel, F G H J, into which opens in front of the said nozzle E a

nozzle, O, through which the bleaching-liquids 50 to be pulverized pass by separate branches L, provided with stop-cocks M K, so that the said liquids are instantly combined in any required proportions capable of being regulated by the stop-cocks M K. The said two nozzles 55 constitute an arrangement resembling a spray-producer inclosed in the funnel or trumpet mouth F G H J, and produce a thorough pulverization and mixture of the bleaching agents, which issue therefrom in a fine state of division 60 and act instantaneously upon the pulp or other materials to be bleached or decolorized. The stop-cock B on the pipe for the steam or other fluid under pressure enables the supply and pressure to be regulated to give the 65 proper pulverization of the agents for their due action on the materials to be bleached or decolorized. The steam or other fluid under pressure, escaping by the one nozzle, draws the liquids or agents from their respective supply pipes and nozzles in regulated quantities 70 according to the adjustment of the stop-cocks, and instantaneously pulverizes or sprays and thoroughly combines the same, and this finely pulverized or sprayed combination acts upon 75 the matter to be bleached, and effects the said bleaching by instantaneous reaction.

I do not necessarily limit myself to the pulverizing apparatus hereinbefore described; but it is the best with which I am acquainted 80 for the purposes of this invention, the essence of which is the instantaneous pulverizing and combination of the bleaching agents which will give the reaction necessary for bleaching or decolorizing. The bleaching thus effected 85 does not deteriorate, and by its aid paper-pulp (usually very difficult to bleach) can be bleached with rapidity, and it is possible to bleach pulp which hitherto could not be bleached in a practically-available manner, 90 and facility is also given for obtaining an absolutely regular and uniform bleaching to any desired tint, as the operation can be arrested at any desired stage. There is great economy in the bleaching agents, as any surplus is not 95 wasted.

I may use as the means of pulverizing steam or any other chemical or mechanical agent, such



as carbonic acid, compressed air, electricity, atmospheric pressure, or pressure of water, or any other agent capable of producing the same results.

- 5 The temperature of the steam or agent employed can be regulated in accordance with the pressure and effect desired.

I claim—

10 The herein-described process of bleaching or decolorizing paper-pulp and similar materials,

said process consisting in applying the coloring agent in a pulverized or sprayed condition to the materials, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

J. B. FESSY.

Witnesses:

MIQUEL,

A. MICHAUD.