

No. 634,999.

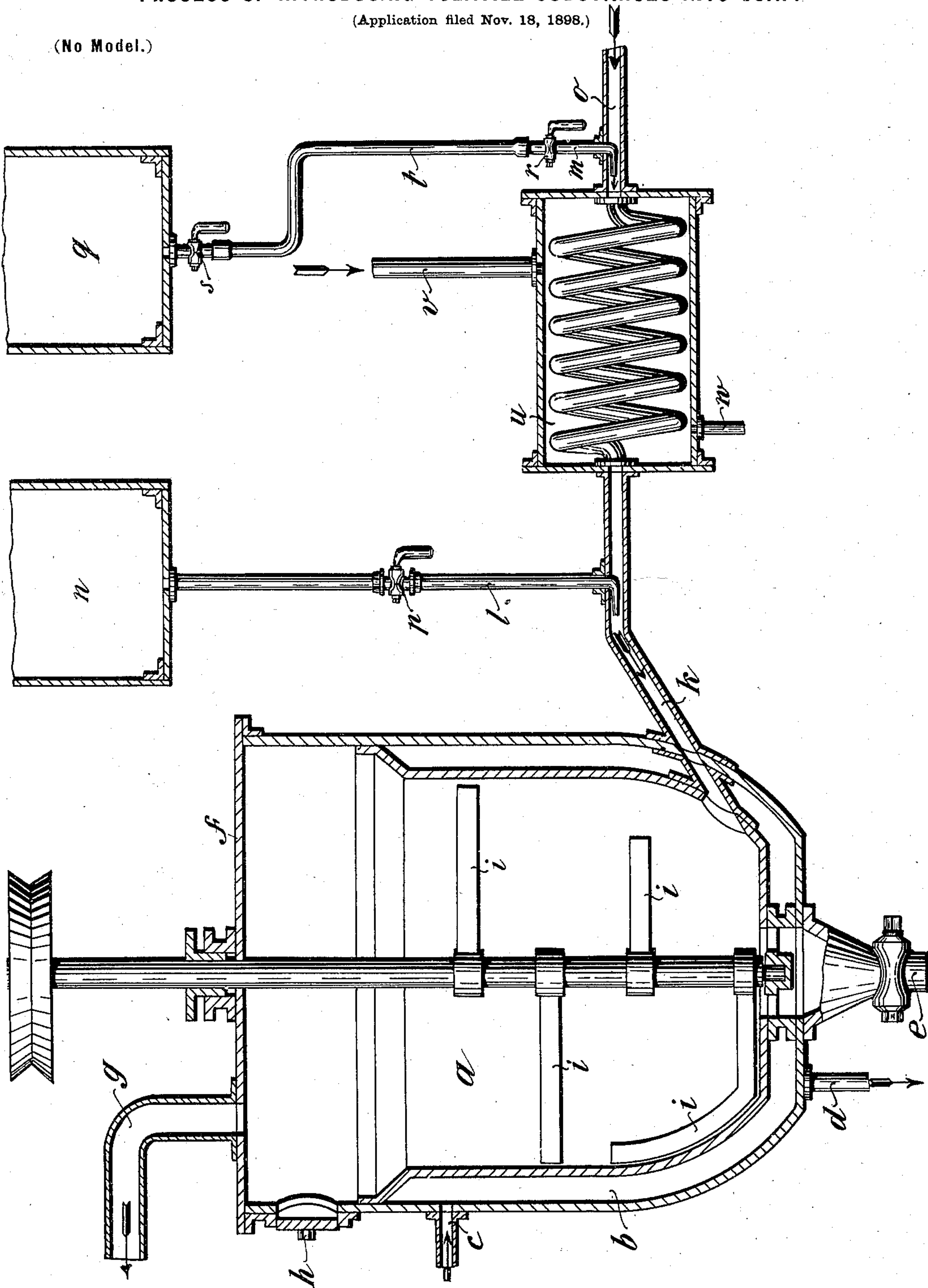
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H. SCHAAF.

PROCESS OF INTRODUCING VOLATILE SUBSTANCES INTO SOAP.

(Application filed Nov. 18, 1898.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

HEINRICH SCHAAF, OF EUPEN, GERMANY.

PROCESS OF INTRODUCING VOLATILE SUBSTANCES INTO SOAP.

SPECIFICATION forming part of Letters Patent No. 634,999, dated October 17, 1899.

Application filed November 18, 1898. Serial No. 696,817. (No specimens.)

To all whom it may concern:

Be it known that I, HEINRICH SCHAAF, a subject of the King of Prussia, German Emperor, residing at No. 28 Haasstrasse, Eupen, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Processes of Introducing More or Less Volatile Substances into Finished or Unfinished Soaps, of which the following is a specification.

In order to impart greater washing-power to soaps, they are mixed with etherial oils, turpentine-oil, benzin, petroleum, and the like. This has hitherto been effected by the soap being stirred around either by hand or mechanically with the said substances until both substances are mixed with one another as thoroughly as possible. This operation consumes much time and the mixing is not complete, as of course certain spots in the thick fluid soap mass remain untouched by the substances introduced.

The process which forms the object of the present invention is based on the admixture of the more or less volatile substances with the soap mass being made thoroughly complete—that is to say, the mixture of their smallest particles. This mixing may also be combined with the manufacture of the soap—that is to say, may be effected when the lye is introduced for mutual chemical action to the resins, oils, or fats which are to be saponified.

The process consists in the above-mentioned more or less volatile substances being first evaporated or volatilized, according to their degree of volatileness, by ordinary or more or less superheated steam or by cold, hot, or superheated air, and in this vaporous condition, which allows of the finest possible distribution or disintegration, introduced into the soap in a finished state or at a suitable stage of its manufacture. The more or less volatile substances can also be introduced into the soap in a liquid condition in small quantities; but in this case the soap at a suitable stage of its manufacture or in finished condition must be previously heated to such a degree as to be able itself to evaporate or volatilize the volatile substances at the moment of their introduction.

An apparatus which may be employed for

carrying out the process hereinbefore described is shown diagrammatically in the accompanying drawing. The arrangement of same is substantially as follows: A double-walled vessel *a* contains the resin, oils, fats, or the like which are to be saponified or a mixture of the same, the space *b*, formed by the double walls, serving for receiving hot boiler-steam for heating the saponaceous material. The steam flows in through a pipe *c*, while the condensed water is discharged through a pipe *d*. The boiler has at the bottom a discharging device *e*, through which the finished soap is discharged, and the boiler is covered with a lid *f*, with which a pipe *g* is connected for carrying off the deleterious fumes, which pipe opens into a condenser. A door *h* serves for introducing the substances to be saponified into the boiler, in which they are agitated by means of mixing beaters or stirrers *i*. A pipe *k*, opening into the boiler, conveys to the hot constantly-agitated mass of resin, oil, or fat the lye and a mixture of ordinary or more or less superheated steam or cold, warm, or superheated air with the vapor of the volatile substances which are to be introduced. Two other pipes *l* and *m* connect, in fact, with said pipe *k*, which pipes are bent at right angles where they enter the pipe *k* and are preferably tapered to a point or nozzle. The pipe *l* is connected with a vessel or reservoir *n*, containing the lye, which latter is drawn into the pipe *k* by means of a jet of steam or hot air, which enters at *o*, and thereby the lye is carried into the boiler, while the flow of the lye may be regulated by means of a tap *p*. The pipe *m* is connected with a reservoir *q*, containing the volatile substances, which are also drawn therefrom by the suction of a jet of steam or air, the flow of said volatile substances being here again regulated by means of taps *r* and *s*. In order to moderate the transmission of heat from the pipe *k* to the vessel *q*, the pipe *m* is in practical use preferably connected with the vessel *q* by a rubber hose-pipe *t*; but of course instead of this rubber pipe *t* a metal pipe of suitable length and preferably spirally twisted may be employed.

The substances to be volatilized are volatilized by the jet of steam or air and preferably conveyed into a heater *u*, because

heat is lost during the evaporation. In this heater steam enters at *v*, while the condensed water is discharged at *w*. Steam or air in which the volatilized substances are finely distributed in a gaseous form thus flows through the pipe *k* with the lye into the boiler *a*, where this mixture constantly encounters a fresh surface by reason of the constant stirring of the mass to be saponified, and passes through the latter from the bottom upward, and thus combines in a very intimate admixture with the smallest particles of this mass. The introduction of the volatile substances as a separate operation is thus entirely avoided, and a considerable saving of time thereby results. Again, the mixture is much more thorough, and thereby a better utilization of the more or less volatile substances introduced is obtained.

Having now described my invention, what I desire to secure by Letters Patent of the United States is—

1. A process for mixing resin soaps, oil soaps or fat soaps with more or less volatile substances, which consists in suitably vola-

tilizing the latter substances and in this condition introducing them into the soap at a suitable stage of its manufacture or if desired in a finished condition, with the object of obtaining as thorough an admixture as possible, substantially as described.

2. A process for mixing resin soaps, oil soaps, or fat soaps with more or less volatile substances, which consists in introducing the volatile substances in a liquid condition in small quantities into the soap at a suitable stage of its manufacture or if desired in a finished condition, the soap being previously heated to such a degree as to be able to evaporate or volatilize the volatile substances at the moment of their introduction, with the object of obtaining as thorough an admixture as possible, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

HEINRICH SCHAAF.

Witnesses:

CLARA E. BRUNDAGE,
JEAN HECKMANN.