

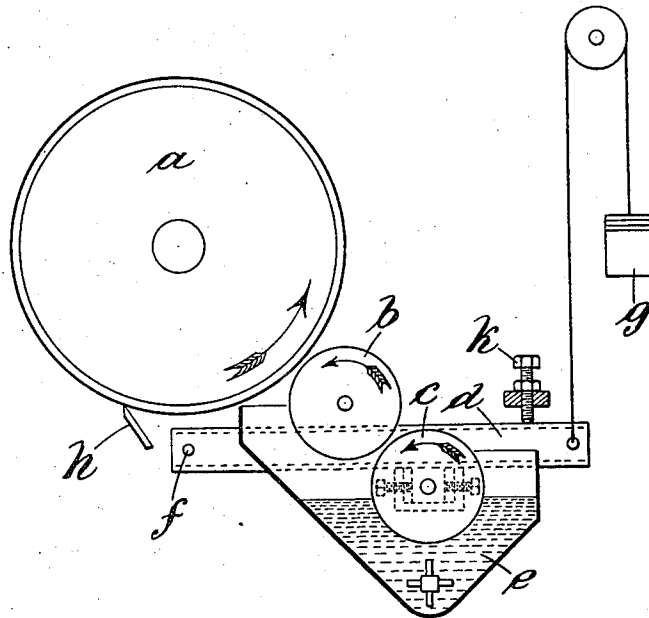
July 7, 1936.

W. SASSE ET AL

2,046,489

HEATED DRUM APPARATUS FOR DESICCATING LIQUIDS AND SEMILIQUIDS

Filed Dec. 27, 1934



Wilhelm Sasse  
Ernst Schneider  
Inventors

Per. *Admunt*  
— their Atty.

## UNITED STATES PATENT OFFICE

2,046,489

## HEATED DRUM APPARATUS FOR DESICCATING LIQUIDS AND SEMILIQUIDS

Wilhelm Sasse, Weimar, and Ernst Schneider, Uerdingen-on-the-Rhine, Germany, assignors to The Buell Combustion Company Limited, London, England, a British limited-liability company

Application December 27, 1934, Serial No. 759,376  
In Germany January 8, 1934

3 Claims. (Cl. 159—11)

This invention relates to heated drum apparatus for desiccating liquids or semi liquids of the type in which the liquid material is withdrawn from a receptacle and transported to the heated drum by means of feed rollers coacting with one another and with the heated drum such as is described in the specification of the United States Patent No. 1,827,617 and has for its object the provision of means whereby the range of thickness of the desiccated layer can be materially extended beyond that of known machines of the same type and in such a manner as to enable the output of dried solids by the machine per unit area of heating surface to be largely increased.

In known machines it is found that in the application of fluid material by means of rollers pressing on the drying drum, difficulty arises from inadequate application, i. e. the quantity of the material which it is actually possible to dry is so small that the working of the machine in an economical manner in terms of cost of machine cannot be attained. It has now been discovered that if pressure of the material on the drying roller is practically dispensed with, and the feed roller is allowed to revolve in the same direction as the drying drum, so that no contact with pressure on the drying surface results, the quantity of fluid applied and actually dried can be considerably greater. The continuous running off of the liquid in the course of the application which ordinarily takes place in known machines no longer occurs owing to the fact that the fluid material applied to the drying drum, and not being under pressure, rapid evaporation sets in, and the material immediately assumes such a consistency as to render it impossible for any subsequent free running off of the material from the ascending surface of the drying drum to take place.

The subject of the invention is shown by way of example in the drawing, which shows the invention in the case of a single-roller dryer in cross-section.

The drying drum *a* receives the application of the fluid material by a feed roller *b* revolving in the same direction, which latter roller *b* is fed in the same manner by the roller *c* which is located underneath it and picks up liquid from the dipping container *e*. The simultaneous lifting device for these two feed rollers arranged in series one behind the other consists of the usual frame *d*, pivot *f* and weight *g*, whilst the dried material is finally scraped from the drying sur-

face by means of the known blade device *h* prior to the application of new material as the drum *a* revolves. The space between the drying drum *a* and feed roller *b* can be definitely determined by means of an adjustable device such as a screw *k* against which the weight *g* reacts.

The fluid material to be applied is laid on the rising cylinder surface of the drying drum *a* by means of the feed roller *b* without any pressure, any grinding of the cylindrical surfaces in contact with one another not being desired and, moreover, not being necessary, as the coaction of the drying drum *a* and the feed roller *b* forms a trough or valley into which the material is fed, the distance between the surfaces of the drum *a* and roller *b* which travel in the same direction of rotation is such that when in operation the liquid material cannot escape from the bottom of the trough so formed and pass to the under sides of the drum *a* and roller *b*.

We claim:

1. In a drying apparatus of the type described a rotary drying drum in combination with a rotary feed roller adapted to coact with the said drying drum so as to form a trough into which the said feed roller can deliver the fluid material to be picked up by and dried on the said drying drum and means for driving the said drum and the said feed roller in the same direction in close proximity to one another.

2. In a drying apparatus of the type described a rotary drying drum in combination with a rotary feed roller adapted to coact with the said drying drum so as to form a trough into which the said feed roller can deliver the fluid material to be picked up by and dried on the said drying drum, means for driving the said drum and the said feed roller in the same direction in close proximity to one another, and adjustable means for varying the distance between the peripheries of the drying drum and feed roller.

3. In a drying machine as claimed in claim 1 a container for the fluid material to be treated and a rotary picking up roller partly immersed in said fluid material the periphery of which is arranged in proximity to the periphery of the feeding roller and adapted to revolve in the same direction as the said feed roller and to form a trough located between said feed and picking up rollers for receiving the fluid material from the feed roller.

WILHELM SASSE.  
ERNST SCHNEIDER.