July 5, 1932. A. M. VAN DOORN 1,865,982

ANALYTICAL FILTER

Filed Sept. 15, 1930

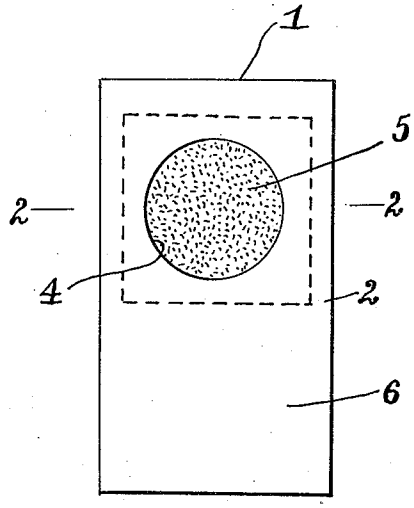

Fig. 1.

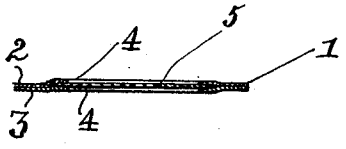

Fig. 2.

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UNITED STATES PATENT OFFICE

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ANALYTICAL FILTER

Application filed September 15, 1930, Serial No. 482,167, and in the Netherlands September 27, 1929.

This invention relates to the preparation of filter cards, rolls and the like, and especially those employed for determining or separating milk slime and dirt from liquids.

It is well known to use wadding discs in apparatus for determining milk slime and dirt, these discs being replaced for every sample of milk to be tested, and being inconvenient in use as they readily tear, while on becoming saturated they are unfit for further use.

After the slime has remained on the wadding discs they must be glued to paper or cardboard on which it is necessary to write the necessary data at the same time.

Somewhat better, but also not suitable, are filter strips which pass over a roller in synchronism with a strip of paper, while there is written on this strip of paper simultaneously the name of the particular dairyman who supplied the sample of milk.

In this case it is necessary for the filter strips and the corresponding paper strips to be cut off each time and glued to cardboard. The cutting off, gluing and so forth require a considerable amount of time and labour and errors are liable to take place as regards the sample and the dairyman who has supplied it.

This disadvantage also occurs when the filter roll and paper roll do not run in absolute synchronism. In this case the entire control of slime as regards the corresponding dairyman supplying the milk, is out of order.

The method of producing filter cards or filter rolls according to the present invention eliminates the above disadvantages and is characterized in that a web, strip, sheet or piece of paper, printed or not printed, is perforated along one or more rows with holes of the size of the desired filter discs, is moistened or gummed wholly or partly on one side and coated with a corresponding piece of filter material or with small pieces of filter material in such a manner that the holes are completely covered; the filter material is either glued to the paper or the paper is completely folded or only folded at the edges or is coated with a second similarly perforated strip, web, sheet or piece of paper so that two holes will always be opposite to one another, whereupon the paper parts are glued together so that, with the exception of the hole, the filter material is wholly or partly glued between paper. Finally the strip, web or sheet of paper is cut to the required size.

The method is carried out as follows:—

A piece, sheet, web or strip of paper, eventually printed and/or gummed, of single or double width of the desire filter card or somewhat wider than the single width of the filter card, is perforated at intervals and the holes have the desired size of the filter passage.

It will be understood that the whole paper sheet may first be perforated and then cut into strips, webs or pieces.

The perforated paper is wholly or partly gummed or moistened on one side. Over the holes are then placed wadding discs or a strip of wadding, or a sheet of wadding or the like filter material. The paper is then folded, for example in such a manner that two holes come into register with one another and the filter material appears between the two holes. The paper parts are then glued together and the desired length is cut off, so that a filter card or filter film is formed while the filter disc is visible on both sides through the holes and is enclosed between two paper parts.

The method may also be such that the filter material is secured to the paper so that it always covers a hole in one side.

In this case the paper is not folded. A sheet of paper coated in this manner on one side can be coated with a second similarly perforated sheet and glued thereto so that two holes are always located opposite one another, so that the filter material is again enclosed between paper. The strip may also be folded at the edges only to such an extent that the filter material is held on two sides and therefore is wholly uncovered by the paper on one side and only covers one hole.

The paper strips, rolls or sheets provided with filter material and produced according to the invention may be cut off in the required length and shape. If the filter cards must be printed, the paper may be printed before or after.

The invention is illustrated on the accompanying drawing showing a preferred form or filter card and in which:

Figure 1 is a front view of the filter card, and

Fig. 2 is a section taken on line 2—2 of Fig. 1.

The filter card 1 is composed of a sheet, card or film or a plurality thereof such as paper cards 2 and 3 which are suitably secured together by means of glue or other material; the cards have openings 4 therein and between the cards and across the opening there is provided a suitable filter material 5. This filter material is provided at the top portion of the card while the lower portion 6 provides space for the necessary data to be recorded on the card.

I claim as my invention:

1. A filter card particularly for testing and determining the condition or milk comprising a strip of paper having an opening therein and a section for recording the data relating to the milk to be tested; and a filter material securely mounted on the strip and over the opening therein.

2. A filter card particularly for testing and determining the condition of milk comprising a card of paper of at least two layers and having an opening therein and a section for recording the data relating to the milk to be tested; and a layer of filter material securely mounted between the layers of the card and over the opening therein.

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