A. A. H. BÖRJESON & E. A. FAGERLUND.

CLEANING MACHINE.

APPLICATION FILED JUNE 29, 1910.

976,775.

Patented Nov. 22, 1910.

Fig. 1.

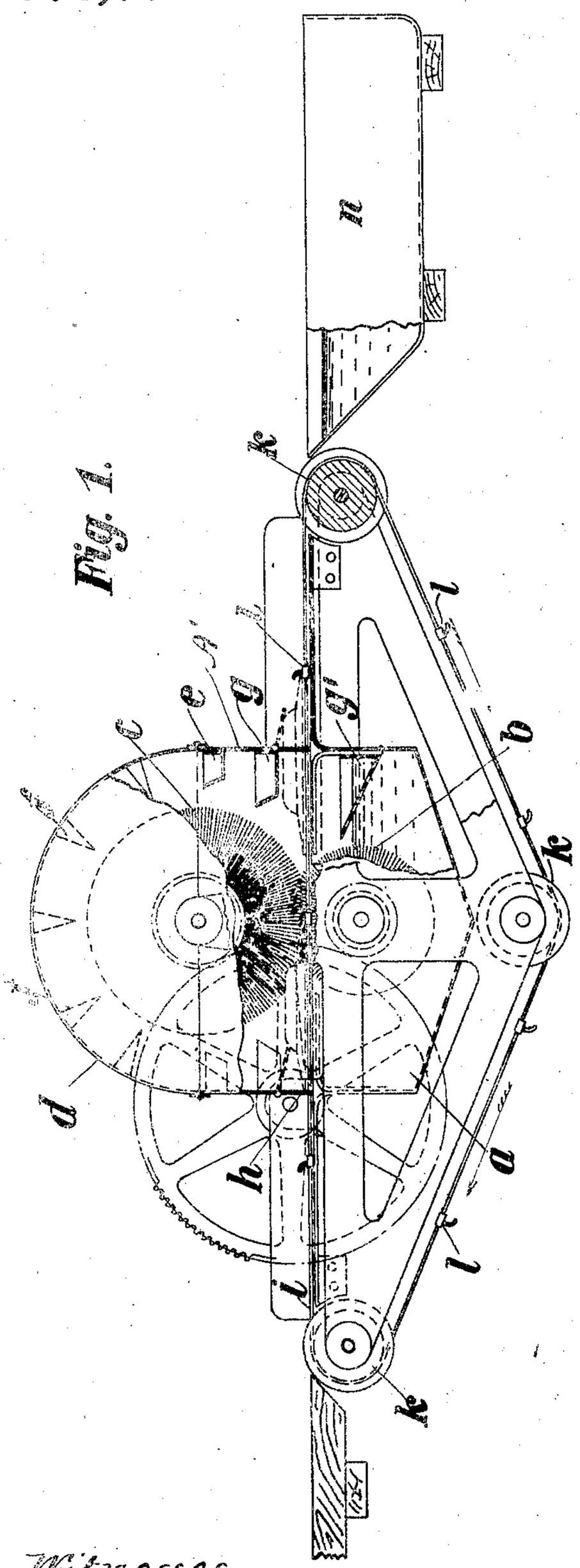
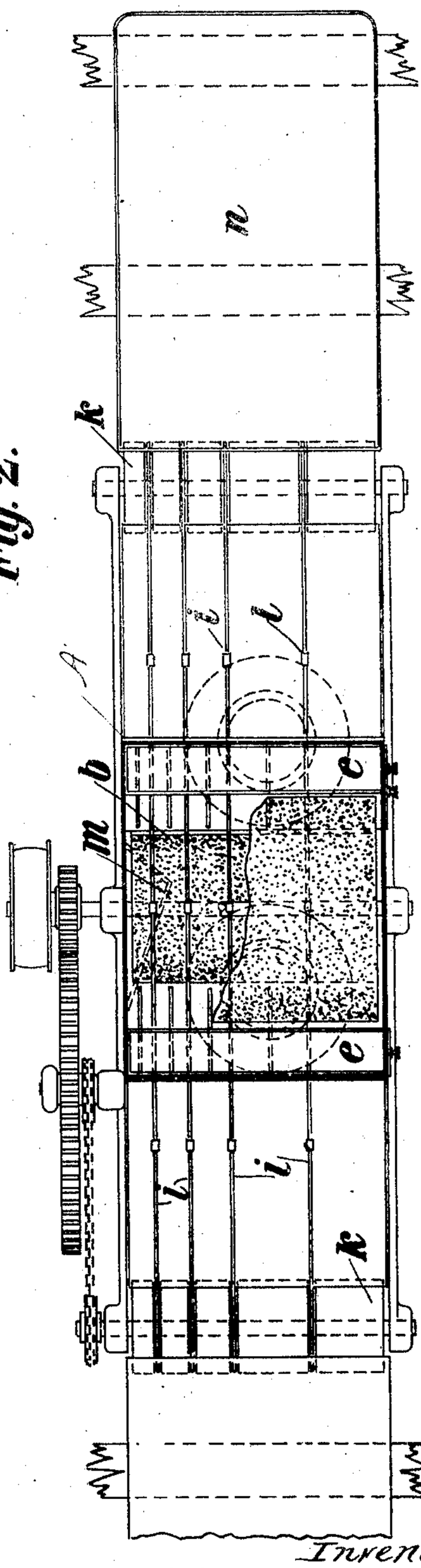


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

ARVID ADOLF HERIBERT BÖRJESON AND ERIK ARTUR FAGERLUND, OF STOCKHOLM, SWEDEN.

CLEANING-MACHINE.

976,775. Specification of Letters Patent. **Patented Nov. 22, 1910.**

Application filed June 29, 1910. Serial No. 569,547.

To all whom it may concern:

Be it known that we, ARVID ADOLF HERIBERT BÖRJESON and ERIK ARTUR FAGERLUND, subjects of the King of Sweden and citizens of Sweden, residing at Stockholm, in the Kingdom of Sweden, have invented new and useful Improvements in Cleaning-Machines, of which the following is a specification.

This invention relates to a cleaning machine of a kind, in which rotating brushes work against the articles to be cleaned.

The nature of the invention is that between two or more similar rotating brushes a conveying belt is passed on which the articles to be cleaned are fed forward. At least one of the said brushes should suitably rotate partly in water, so that the resultant cleansing and rinsing may to the greatest possible extent be increased.

An embodiment of the invention is shown on the annexed drawing in which:

Figure 1 is a side elevation. Fig. 2 is a plan view.

In a vessel *a*, is a rotating brush, *b;* arranged, over this another brush *c*, which through suitable transmission, is rotated and through suitable gearing is connected to brush *b* that this also is made to rotate.

The two brushes *b* and *c* are arranged so near each other that they partly enter into each other, so that the ends of the bristles in the brushes do not work parallel against the articles conveyed through the brushes, but at an angle against them, whereby not only a rubbing but also a whipping effect is obtained.

To get a fresh supply of water always on the brushes, the bottom one *b*, is suitably arranged to partly enter the water so that this brush will always be filled. Water is thrown from the brushes against the sides of the hood *d*, surrounding the round brush *c*, which water by dripping combs *f* or similar arrangements is made to fall on the upper brush *c*. The brushes should rotate with different speeds so that when no articles are passing through them they will clean each other.

For catching water thrown out by the brushes vessels *e*, *g*, of drawer like form, are arranged at the sides of the supporting structure A′ of the hood, and other like vessels *g′* are arranged in the upper part of the tank *a*, the vessels *g′* being perforated to strain the water falling into them. All these vessels are adapted to slide lengthwise so that they can be removed and cleaned and are provided with knobs on their ends as shown.

Between the brushes *b* and *c* and passing through openings *h* in the hood *d* is placed a conveyer, which on the construction shown in the drawing consists of a series of ropes *i*, laid around rollers *k*, which, through some suitable means are made rotatable. These ropes are fitted with heels or hooks *l*, which prevent the plates or similar articles from being thrown forward by the brushes on the conveying ropes. Instead of ropes, chains running on toothed wheels may be used, as otherwise sliding of the conveying ropes and hooks *l* is likely to occur. When it is essential that the conveying ropes or chains should be as few as possible they should be placed at successively increasing distances between each other. Also to obtain a side motion of the articles on the ropes or chains to insure every part of the articles being exposed to the brushes, a slanting plane *m*, is placed over the conveying line. When the cleaned plates have left the conveying line they are taken up in a rinsing vessel *n*, from which by a conveying line or some similar arrangement they are passed farther on. It is clear that the effect of the apparatus is increased if a series of brushes with conveying chains placed between them are employed. The brushes may also be made conical or disk-formed as well as being supplied with different length and stiffness of bristles as thereby the shorter and stiffer bristles will better scrape away food particles etc., and the longer and weaker bristles will whip the articles which are to be cleaned.

We claim:

1. A plate cleaning machine, comprising two rotating brushes, a vessel to contain water, in which one of the brushes is immersed and an endless conveyer arranged and adapt-

ed to travel between the brushes and means to rotate said brushes against the plate in opposite directions.

2. A plate cleaning machine comprising two rotating brushes, a vessel to contain water, in which one of the brushes is immersed and an endless conveyer arranged and adapted to travel between the brushes and means to rotate said brushes against the plate.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ARVID ADOLF HERIBERT BÖRJESON.
ERIK ARTUR FAGERLUND.

Witnesses:
HEDWIG MELINDER.
TONTEN MELINDER.