No. 617,341. Patented Jan. 10, 1899.

C. KIRSCHNER.

BOTTLE WASHING APPARATUS.

(Application filed Sept. 26, 1898.)

(No Model.) 2 Sheets—Sheet 1.

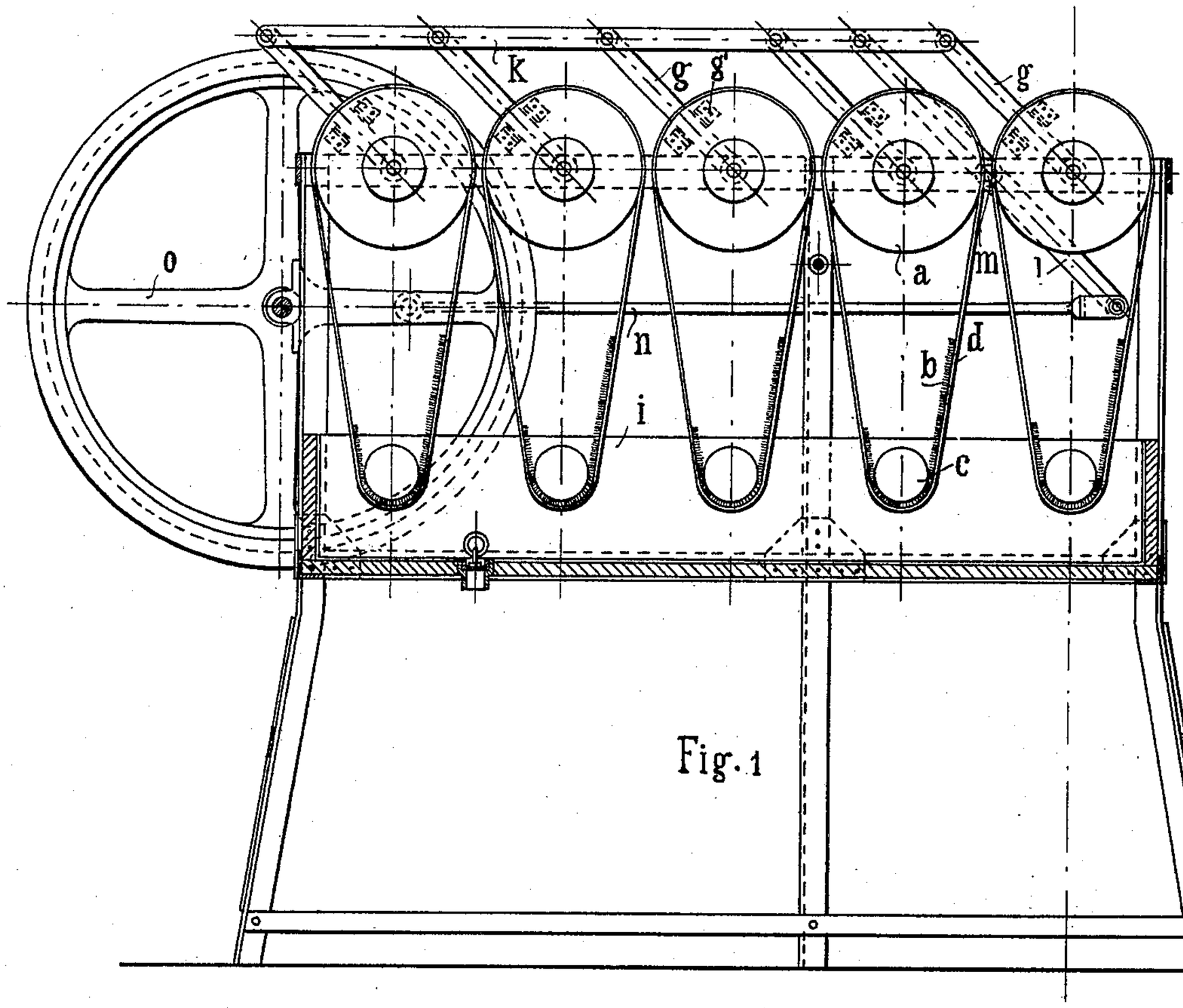

Fig. 1

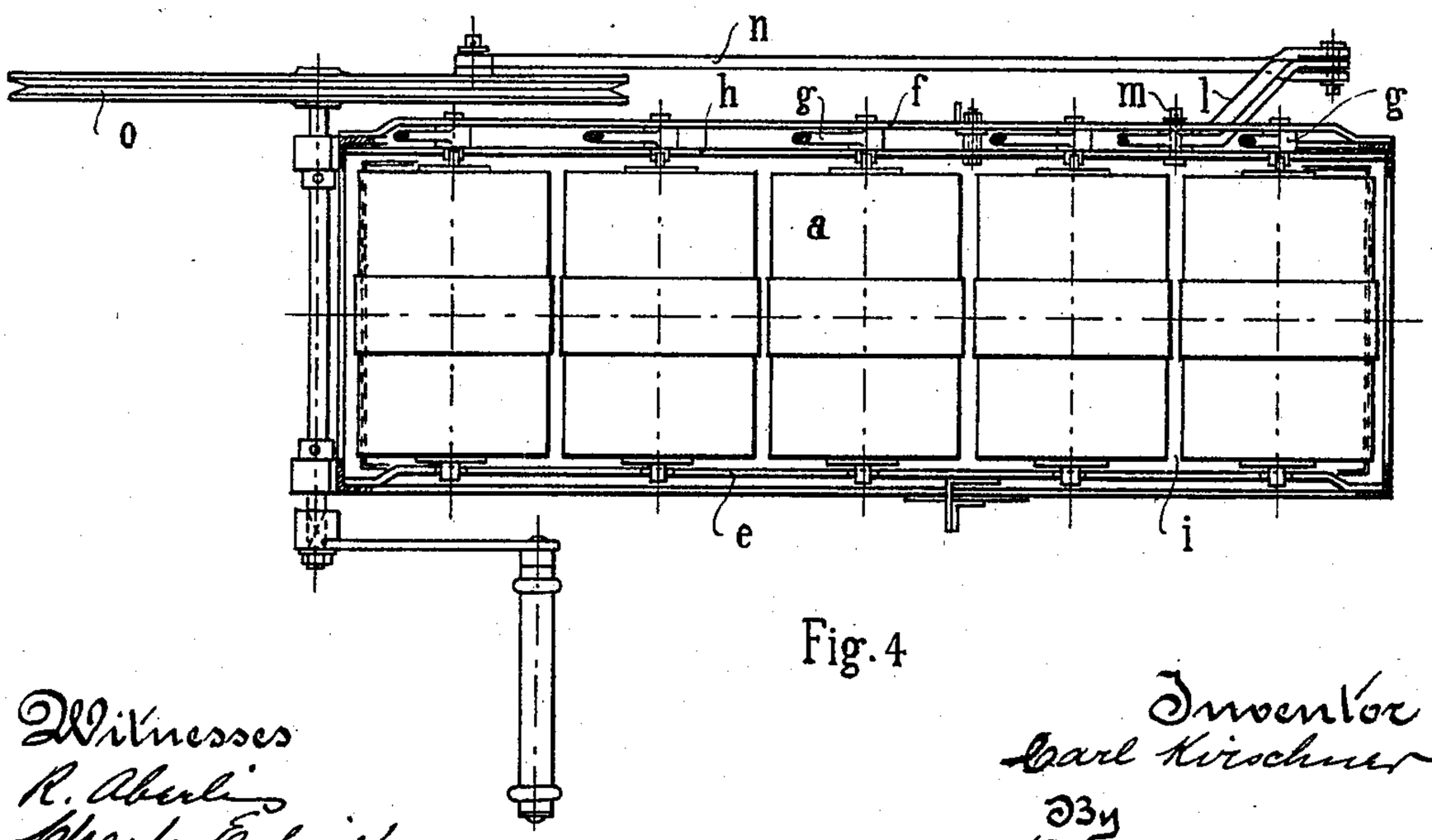

Fig. 4

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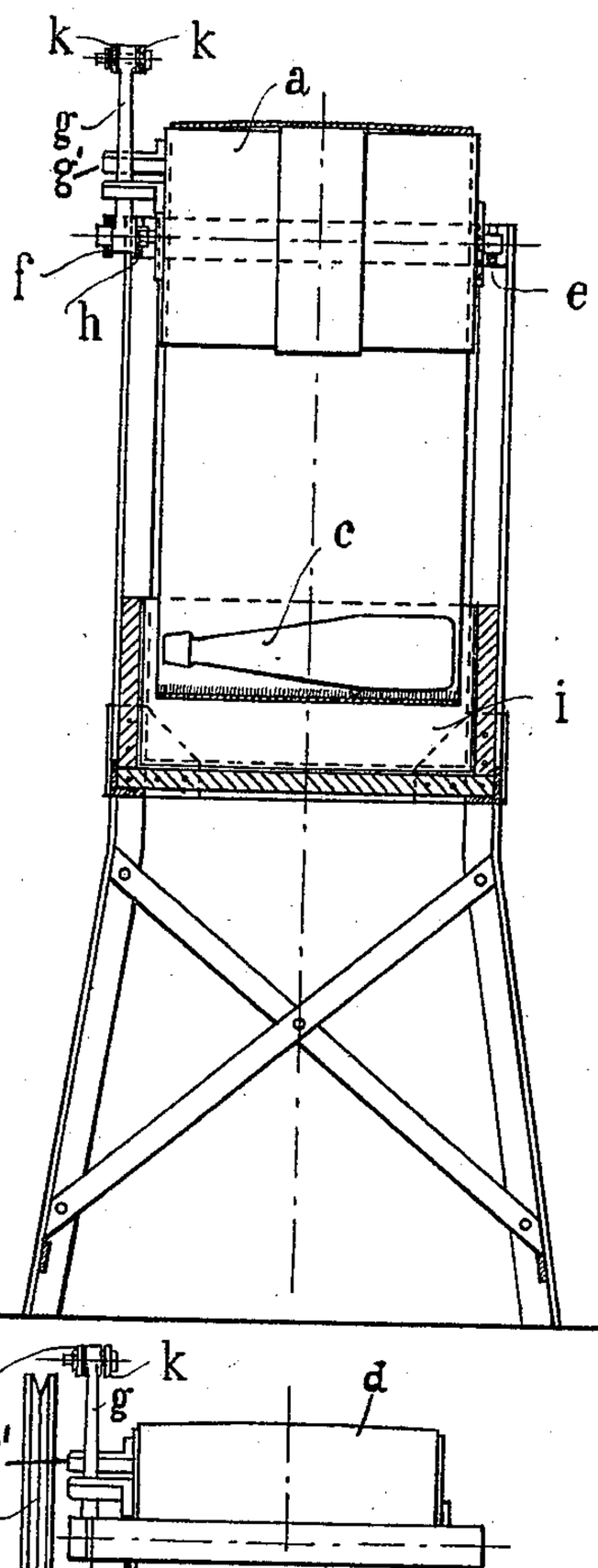

Fig. 2

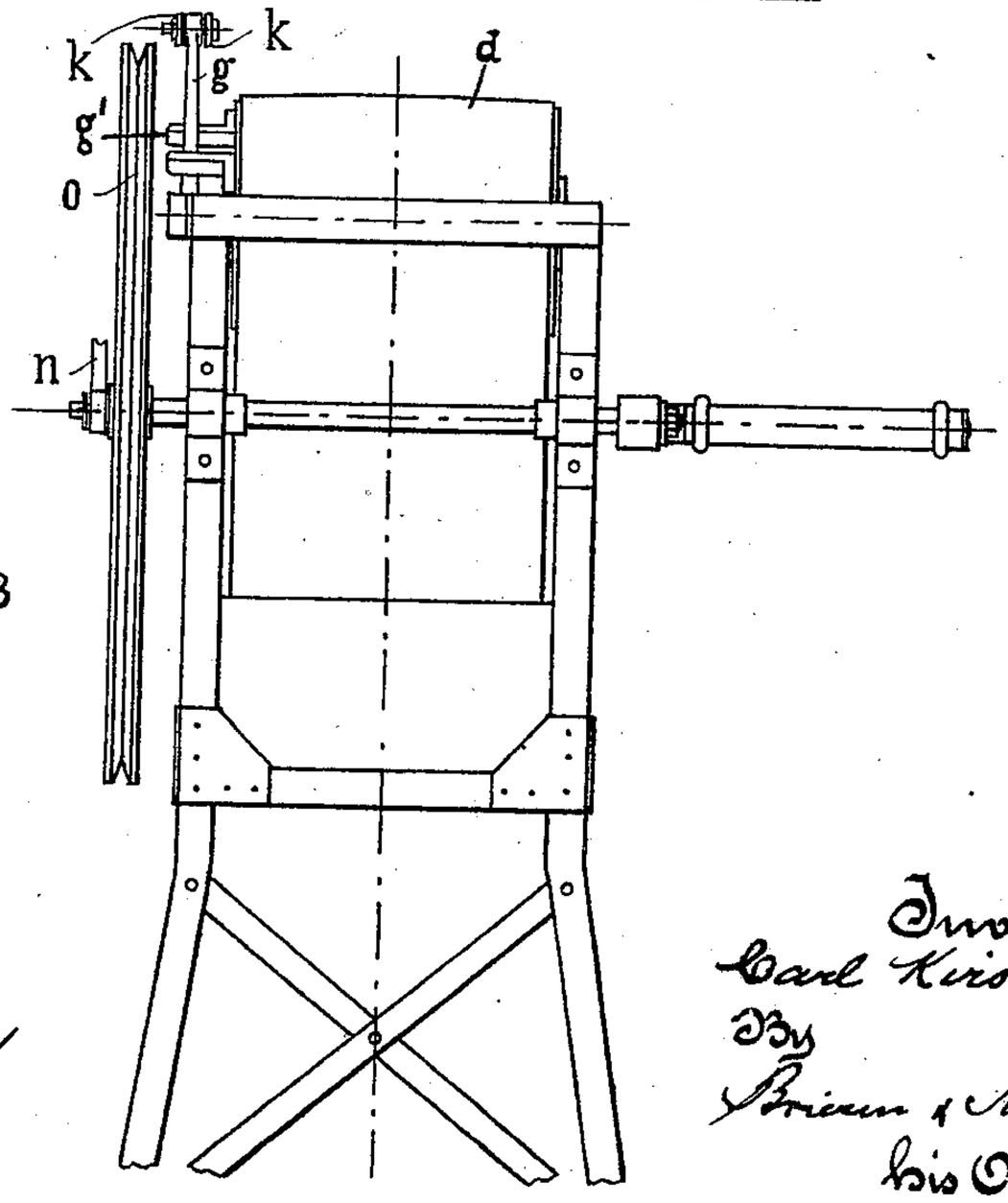

Fig. 3

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UNITED STATES PATENT OFFICE.

CARL KIRSCHNER, OF DARMSTADT, GERMANY.

BOTTLE-WASHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 617,341, dated January 10, 1899.

Application filed September 26, 1898. Serial No. 691,847. (No model.)

To all whom it may concern:

Be it known that I, CARL KIRSCHNER, a citizen of the Dukedom of Hesse, residing in Darmstadt, German Empire, have invented certain new and useful Improvements in Bottle-Washing Apparatus, of which the following is a full, clear, and exact description.

This invention has for its object to produce a bottle-washing machine which is of great simplicity of construction and operates to produce a rapid easy washing out of bottles.

In the accompanying drawings, Figure 1 is a longitudinal section of the apparatus; Fig. 2, a cross-section thereof; Fig. 3, an end view thereof, and Fig. 4 a plan view thereof.

As may be seen in the drawings, three flat iron bars *e f h* are arranged over the vat *i*, which contains the washing liquid, and the trunnions of a series of drums *a* are mounted in the said bars. On one side, on prolongations of the trunnions, levers *g* are mounted between the flat iron bars *f* and *h*, which levers are movably connected at their free ends with a bar *k*. These levers *g* pass through brackets *g'* on the ends of the drums, whereby the drums may be oscillated by the movement of the levers. A double-armed lever *l* engages this bar *k*, which lever is pivoted on a pin *m* between the bars *f* and *h*, and to the other end of which a draw-bar *n* is attached, which extends to a wheel *o*, mounted at the front part of the machine and movable in such a way that the diameter of the circle, which the point of attachment of the draw-bar *n* describes on the wheel being rotated, corresponds to the extent of oscillation of the levers *g*. On the rotation of the wheel *o* the drums *a* oscillate. Endless-woven bands *d*, provided on a portion of their inner sides with brushes *b*, pass around said drums and their lower portions hang in the washing liquid.

The machine may be operated by hand, foot, or motor driving-gear. Its method of working is as follows: The bottles *c* which are to be cleaned are half filled with a mixture of grit or sand and water and not too tightly corked. They are then placed in the lower part of the webs *d*, which are provided with brushes *b*, and receive a shaking motion by the oscillation of the drums *a*. A thorough cleaning of the bottles *c* internally thus takes place, and they are also thoroughly cleaned on the outside by the action of the brushes *b* while entirely immersed in the washing liquid. The bottles *c* may be conveniently inserted in the machine or withdrawn therefrom.

I claim as my invention—

A bottle-washing machine, characterized by endless bands *d* being placed over oscillating drums *a*, said bands receiving the bottles *c* which are to be cleaned in their lower loop provided on the inner side with brushes *b* and immersed in the washing liquid so that the bottles *c* undergo a shaking motion and thereby are cleansed both internally and externally, substantially as described and shown.

CARL KIRSCHNER.

Witnesses:
DEAN B. MASON,
JEAN GRUND.