No. 632,713. Patented Sept. 12, 1899.

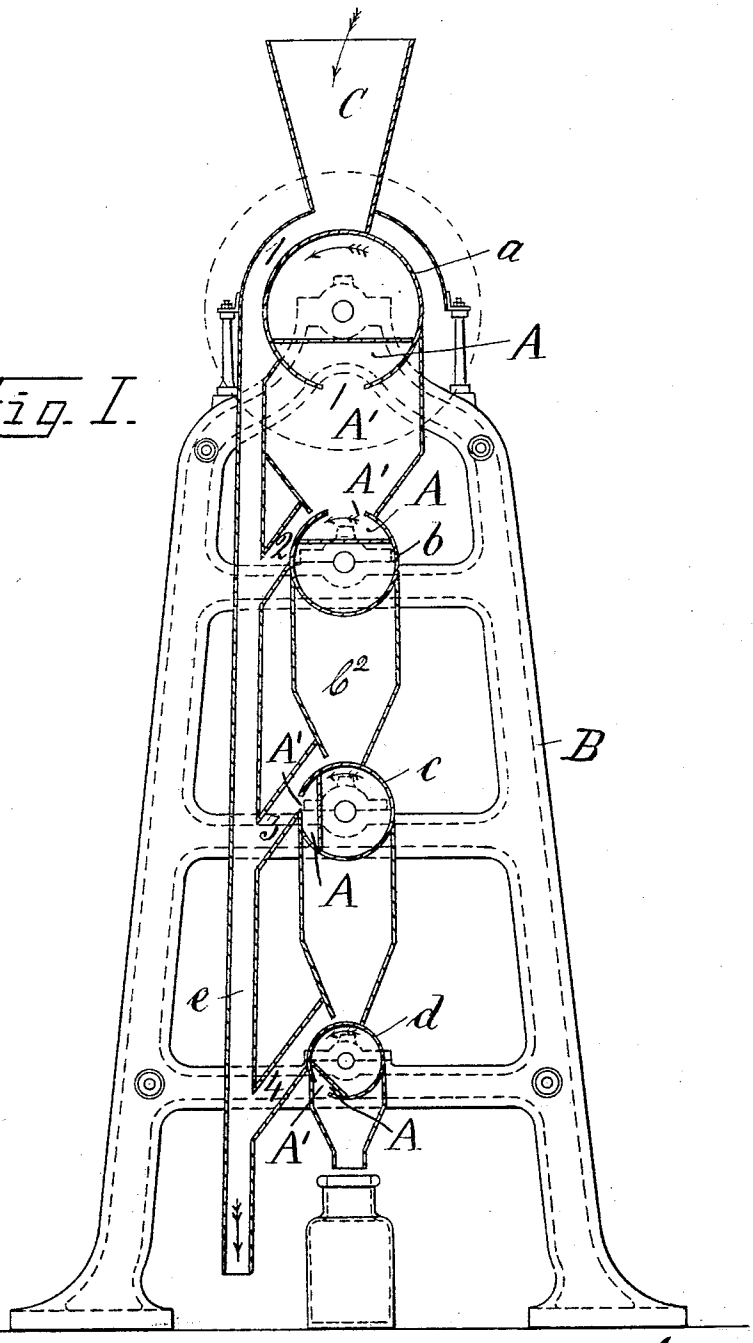
C. GEISSLER.

AUTOMATIC SAMPLING APPARATUS FOR GRAIN, &c.

(Application filed Mar. 24, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. I.



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(No Model.) 2 Sheets—Sheet 2.

Fig. II.

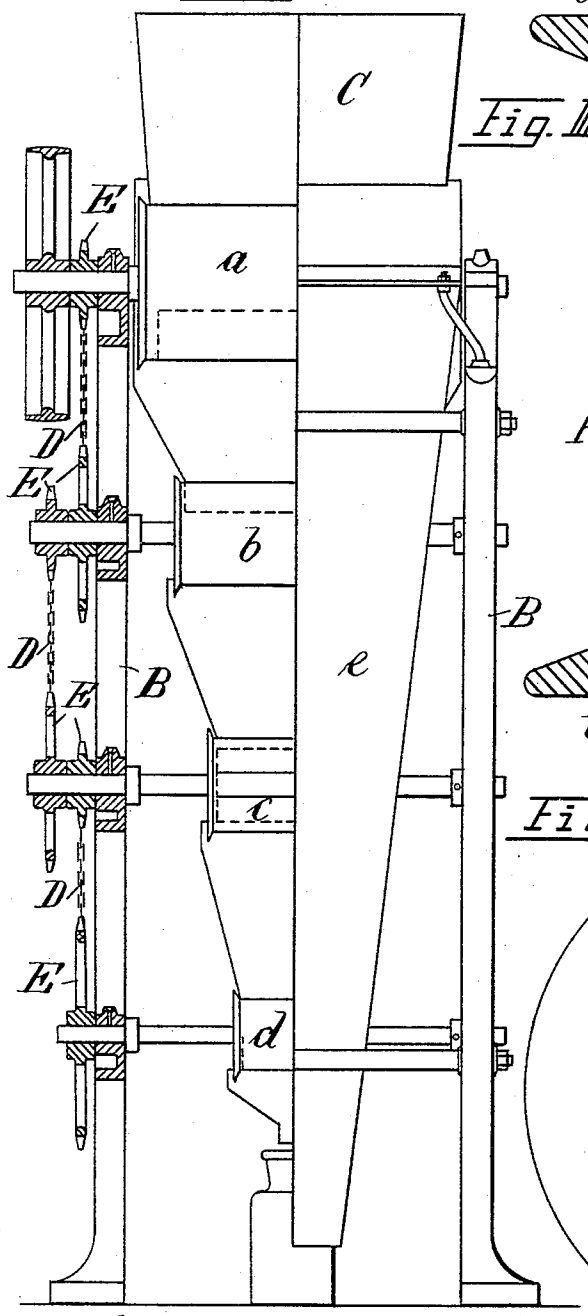


Fig. III.

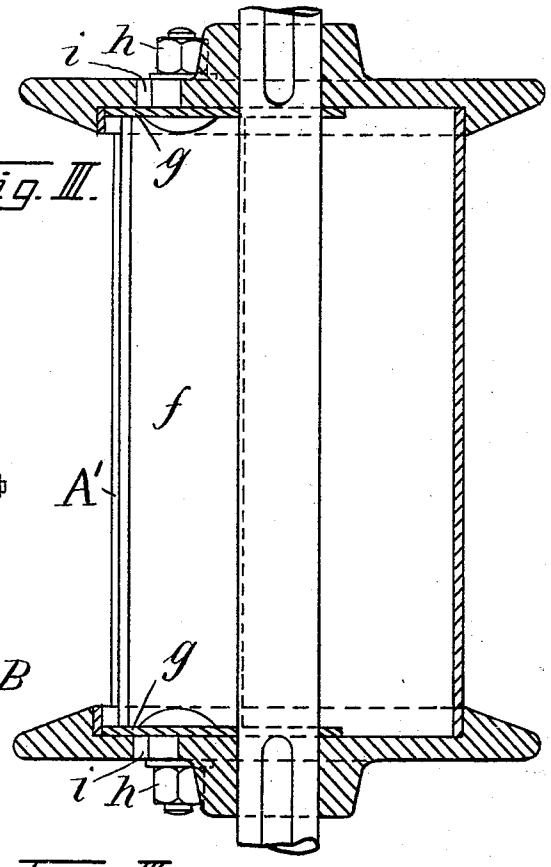
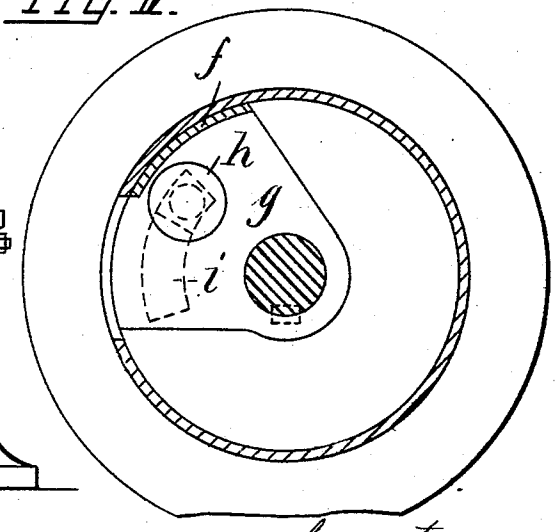


Fig. IV.



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UNITED STATES PATENT OFFICE.

CARL GEISSLER, OF STASSFURT, GERMANY.

AUTOMATIC SAMPLING APPARATUS FOR GRAIN, &c.

SPECIFICATION forming part of Letters Patent No. 632,713, dated September 12, 1899.

Application filed March 24, 1898. Serial No. 675,036. (No model.)

To all whom it may concern:

Be it known that I, CARL GEISSLER, residing at Stassfurt, in the Kingdom of Prussia, Germany, have invented Improvements in Automatic Sampling Apparatus for Grains, Powders, and the Like, of which the following is a specification.

The invention relates to improvements in samplers or automatic sampling apparatus for grains, powders, minerals, and the like; and it consists of a certain number of hollow drums placed one over another in a common frame to receive one after another the ground material from which the sample is to be taken out.

In the drawings forming part of this specification the separate parts of my improvement are designated by the same letters and figures of reference in each of the views, and in which—

Figure 1 represents the machine in a front elevation and vertical section. Fig. 2 is a side elevation, partly in section. Figs. 3 and 4 are views, on a larger scale, of one of the drums in horizontal and vertical section.

To obtain from grain, dust, or other ground material an average sample, several hollow drums *a b c d* for the material to be sampled are placed one over another in a frame B, the drums having each an inlet slit or opening A′. C is the hopper to shoot the grain into the upper drum *a*, which receives its rotation by a belt, rope, or chain, and between each of said drums is a hopper-shaped passage or chamber C^2, which conveys the material from one of said drums to the other. The number of revolutions of this first drum is at pleasure, and the other drums are moved among one another by drive-chains D and chain-wheels E. The number of revolutions of the upper drum is, however, determinative for the other drums. If, for instance, the first drum *a* makes twelve revolutions, the second drum *b* may have six revolutions only, the drum *c* three, and the drum *d* one revolution. This gives the following proportion:

$$a:b\ 2:1$$
$$b:c\ 2:1$$
$$c:d\ 3:1$$

Thus the first drum *a* makes two revolutions while the drum *b* has but one, and the contents of the first drum will once pass by the opening A′ of drum *b* and at the second revolution only the chamber of the drum *b* will be filled. The drum *b* also will pass once the opening of drum *c* and at its second revolution fill the chamber of the drum *c*. This latter drum will pass twice the opening of drum *d* and at the third revolution only fill the drum *d*. The last and lowest of the drums empties its contents into a vessel A^2, placed under the frame. Thus one may obtain of any quantity of material a very good sample of exact proportion. The remaining material which does not reach the vessel A^2 is conducted by channels 1, 2, 3, and 4, which communicate with the bottoms of the hopper-shaped passages or chambers C^2, to a collecting gutter or pipe *e* and therefrom to its place of destination. The quantity of production may be changed and regulated by varying the speed of the drums.

To obtain a larger or smaller quanity of the last sample, the openings of the drums are provided with regulating valves or shutters *f*, Fig. 3, with segments *g*, through which the drum-shaft passes. For enlarging or diminishing the aperture A′ of the drums the valves *f* are turned in the drum-shaft or moved forward and backward and fixed by screws *h*, passing through slots *i* in the end walls of the drum and in the segments *g*. The number of drums may also be augmented or reduced, if necessary.

Having fully described my invention, I claim as new, and desire to secure by Letters Patent—

1. A sampling apparatus composed of a frame, a plurality of hollow drums arranged one above another therein, each of said drums being provided in one side thereof with a slot or opening, and a valve for regulating the size of said slot or opening, and means for turning said drums at different rates of speed, substantially as shown and described.

2. The herein-described sampling apparatus, comprising an upright frame, a plurality of drums arranged one above another therein, said drums being arranged in a horizontal position, each of said drums being also provided in one side thereof with a longitudinal

slot, and a valve for regulating the size of said slot, hopper-shaped passages for conveying material from each of said drums to the drum below it, and a receptacle placed beneath the bottom drum, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CARL GEISSLER.

Witnesses:
THEOBALD LORENZ,
C. H. DAY.