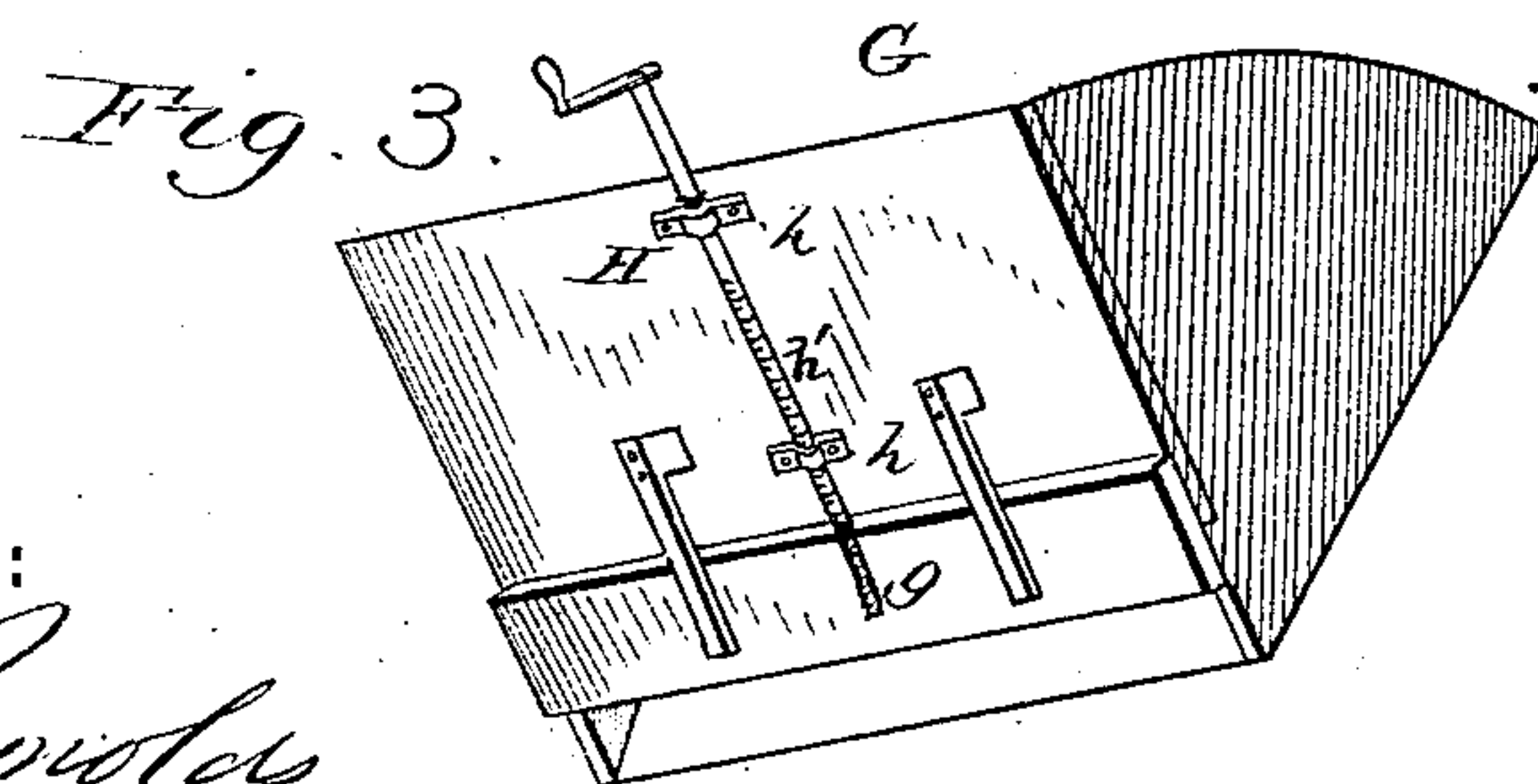
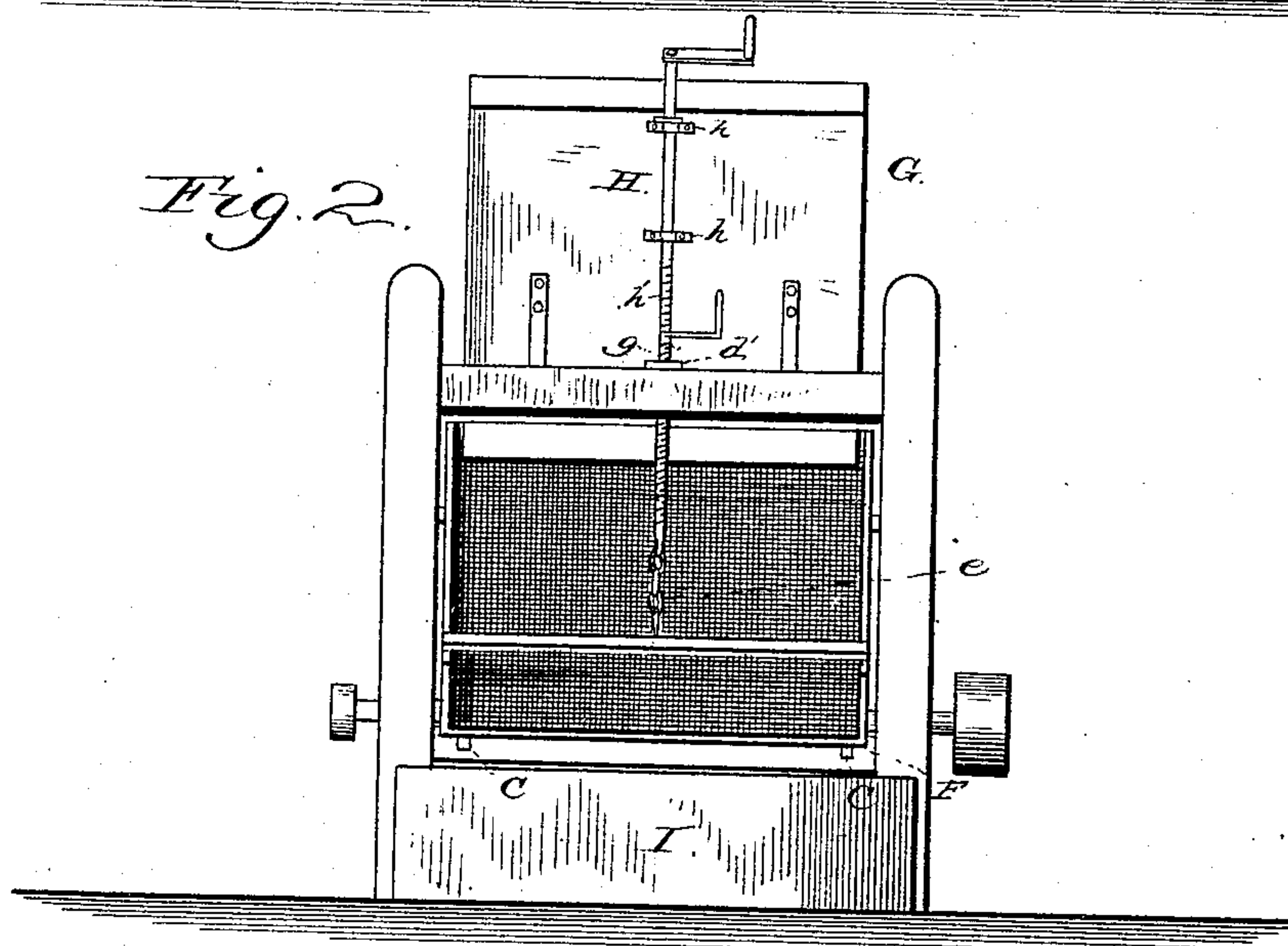
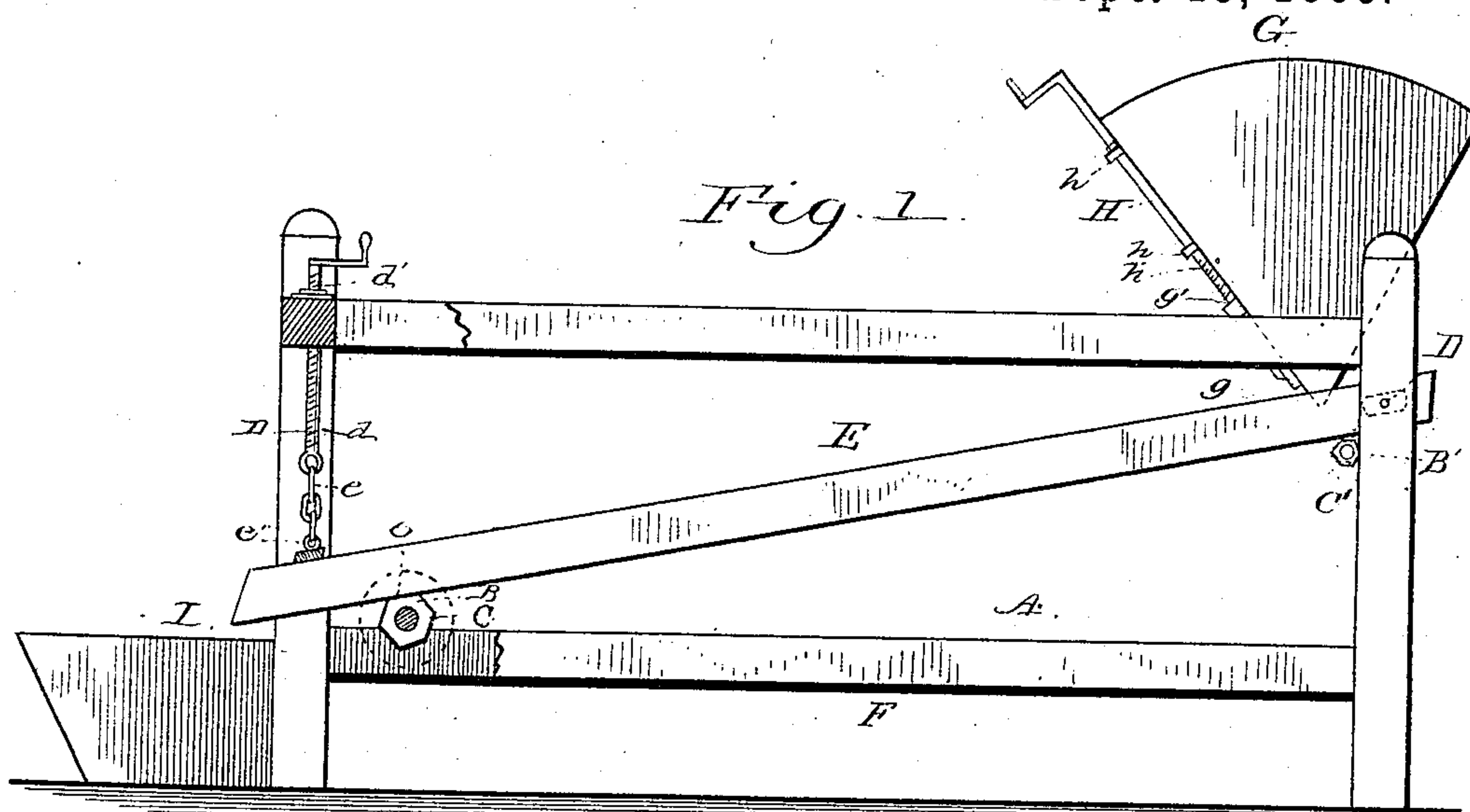


(No Model.)

W. B. VARDELL.
RICE CLEANING MACHINE.

No. 326,532.

Patented Sept. 15, 1885.



WITNESSES:

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WILLIAM B. VARDELL, OF CHARLESTON, SOUTH CAROLINA, ASSIGNOR OF
ONE-HALF TO JOHN VON OVEN, OF SAME PLACE.

RICE-CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 326,532, dated September 15, 1885.

Application filed December 9, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. VARDELL, a citizen of the United States, residing at Charleston, in the county of Charleston and State of South Carolina, have invented certain new and useful Improvements in Rice-Cleaning Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to separators for rice or other grain; and the novelty consists in the construction, combination, and adaptation of parts, as will be more fully hereinafter set forth, and specifically pointed out in the claim.

The object of the invention is to provide a separator which will effectually separate, clean, and make different grades of rice, one in which the grade of rice may be varied at will, and one which provides for adjusting the amount and force of the vibrations of the screen at will to meet different exigencies.

The invention is fully illustrated in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation partly broken away to show the arrangement of the cams; Fig. 2, an end elevation, and Fig. 3 an enlarged detail view of the means for adjusting the feed.

Referring to the drawings, in which similar letters of reference indicate like parts in all the figures, A designates the main frame, in which are journaled shafts B and B', as shown. E designates a vibrating shoe having removable screens, and F a horizontal frame for holding other removable screens. (Not shown.) These parts are of any ordinary and desired construction and form no important feature of the invention, except as hereinafter described.

Rigid upon the shaft B are cam-wheels C, and upon the shaft B' are similar cam-wheels, C', except that the cams C' are much smaller than the cams C.

The shoe E is suspended over these cam-wheels, and at the lower end is provided with flexible connections *e* and with a crank-rod, D, having a threaded portion, *d*, which operates in a female thread, *d'*, in the main frame. The connections *e* are provided with a swivel, *e'*, so that the rod D may be turned to elevate or lower that end of the screen, and such connections are adapted to allow one screen to be

readily taken out and another replaced having a different mesh. The shoe is suspended so as to be more or less in contact with the cams, and beneath it is arranged another and finer removable screen in the frame F.

G designates the hopper, having a slide-door, *g*, with a threaded aperture, *g'*. A crank-rod, H, turns loosely in bearings *h* on the hopper, and has a threaded portion, *h'*, which operates in the part *g'*, to raise and lower the slide at will to govern the amount of feed.

I designates a grain-receptacle.

By means of the slide-door *g* and threaded rod H, I am enabled to nicely adjust the amount of feed, and in rice cleaning and separating I find this to be very important, as the proper separation into different grades will not accrue unless the feed is in proper proportion to the quality of grain treated and the kind of separation required, requiring frequent change in this respect. The proper amount of feed having been obtained, the rice falls upon the screen in the shoe E, which has been selected as the one having a proper mesh to give the grade of rice desired. The dirt and finer grains of rice gravitate through the screen E upon the finer screen in the frame F, while the full-sized grains, which cannot pass through the screen in the shoe E, are passed down the incline to the receiver or receptacle I.

By repeated and continued experiment I have ascertained that a given stroke of vibration throughout the screen E will not operate successfully with different qualities of grain, and also that the grain as it leaves the hopper does not require the violent vibration that is required further on in the process of separation. It is only necessary to properly agitate the upper end of the screen, allowing the sand and smaller grains to find their way through the interstices of the sieve, while nearer the lower end of the sieve the agitation should be more violent in order to throw the grains completely free from each other.

The upper portion of the sieve is more for the purpose of cleaning the rice of dirt, sand, &c., and grains which would otherwise pass through the screen are at this point prevented from doing so by their contact with other grains. After the dirt, however, has been separated, I provide that the rice shall be agitated more violently to give the grains each

a chance to pass through the screen if its size will permit; hence the cams at the lower end of the sieve are larger and give a greater throw to the screen at this point by their contact. The rice which falls upon the screen F gives a lower grade, and may be again cleaned and separated still further by properly changing the screens, while the sand and dirt pass through the screen F and go to waste. I have practically demonstrated that these cams of different sizes in their relation to means for adjusting the shoe up or down are important in the treatment of rice as suggested, and while I am aware that adjustable hoppers are old, and that screens have been vibrated by cams of various sizes, I am not aware that more than one size of cam has been used in relation to the same screen, nor that the force and amount of vibration of a screen have been varied by different cams at different ends, and

this varying quality of vibration been adjustable at will.

What I claim as new is—

In a rice-cleaner, substantially as described, the combination, with the shafts B and B' and the adjusting-screw D, all having bearings in the main frame, of the cam-wheels C and C', rigid upon the shafts B and B', respectively, the cam-wheels C being much larger than the wheels C', and the inclined shoe E, having its lower end loosely connected with the said rod or screw D and held adjustably suspended over the larger cams, as and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM B. VARDELL.

Witnesses:

SOL. ISEMAN,
C. J. PIERCE.