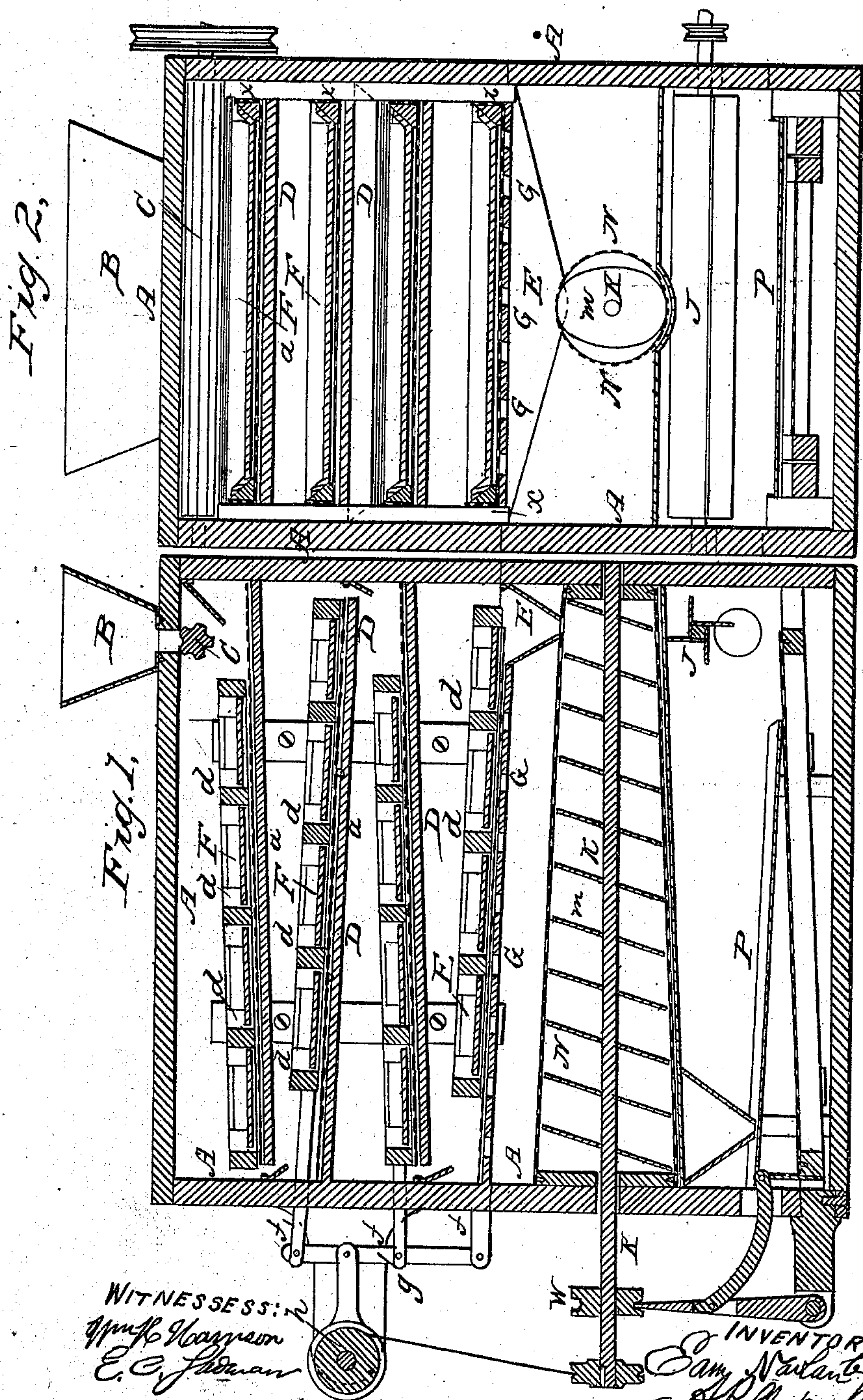


S. NOWLAN.
Rice Cleaning Machine.

No. 35,387.

Patented May 27, 1862.



UNITED STATES PATENT OFFICE.

SAMUEL NOWLAN, OF NEW YORK, N. Y.

IMPROVEMENT IN RICE CLEANING, HULLING, AND PEARLING MACHINES.

Specification forming part of Letters Patent No. 35,387, dated May 27, 1862.

To all whom it may concern:

Be it known that I, SAMUEL NOWLAN, of the city, county, and State of New York, have invented certain new and useful Improvements in Rice Cleaning, Hulling, and Pearling Machinery; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figures 1 and 2 represent, respectively, a longitudinal and transverse section of my improved apparatus.

My invention consists, first, in combination, with stationary but elastic wire beds, of the reciprocating cast-iron or stone slabs or plates, substantially in the manner and for the purpose hereinafter described; second, the arrangement of the wire bed supported by a perforated board, in combination with a blowing apparatus, the whole operating substantially in the manner hereinafter set forth; third, the combination, with a stationary conical screen constructed as hereinafter described, of a revolving shaft and inclined dashers or blades, the whole operating together, substantially as herein set forth.

To enable others skilled in the art to make and use my invention, I shall now describe the construction, arrangement, and operation of my machine.

The machinery is inclosed in a quadrangular frame or case, A, strongly united by mortise and tenon or dovetail joint, so that the whole box shall be perfectly dust-proof. On top of said frame or case is applied a funnel-shaped hopper, B, from which the rice or other grain is uniformly and at given intervals fed into the mill or apparatus by means of a grooved roller, c, to which a rotary motion is imparted with more or less velocity, according to the quantity of rice the machine is capable of working off.

The rice or grain is dropped onto a series of wire beds, D, inclined in relation to each other so as to actuate the rice to fall from one to the other until it reaches the exit-funnel E. These wire beds are made of a bottom, a, over which is spread first a flannel or other soft elastic covering, b, and, secondly, a wire-gauze or metallic web, C. Above each wire bed is placed a frame, d, containing a number of stone slabs or plates of chilled cast-iron F, so that the lower and chilled surface comes opposite the

wire surfaces. The frame containing the slabs or plates is supported at a distance not exceeding the size of ordinary rice-kernels or of other grain intended to be worked by means of side supports or guides, x. The several frames are connected by means of rods f with an outside cross-piece, g, which in its turn is united with the rod of an eccentric, h, which, receiving a rotary motion, imparts a reciprocating motion to the said frame and slabs.

The function of the stationary wire bed and the reciprocating slabs is to hull the rice, which in its descent from one wire bed to another is exposed to a rubbing action, the tendency of which is to free the rice of its surrounding hull. It will be observed that the elastic or yielding bed prevents the rice from being broken or injured.

By referring to the drawings it will be seen that the last and lowermost wire bed is not elastic. The metallic cloth rests directly upon the board, which is here perforated with numerous holes G. The object of this arrangement is to allow the rice or grain heated by constant friction to cool, and also to allow of the powdered and reduced hull to pass off. This is effected by means of a blower, J, throwing fresh air with considerable force on and through the wire bed. The rice thus freed of its outer cuticle now reaches the funnel F, whence it runs into the conical screen or pearling-box N. This box is in the form of a truncated cone and is made of metallic cloth or wire. It is securely fixed at its ends to the box, so that it remains stationary while the operation of pearling is going on within it. Through the center of the said cone passes a shaft upon which are mounted a number of dashers or blades, m, the latter being set at an angle in relation to the horizontal shaft. It will be evident that a reciprocating motion will be given to them by simply revolving the shaft. This motion of the blades produces the desired effect and not only frees the rice of the inner cuticle, but gives it a pleasing rounded form, which distinguishes pearled from unpearled rice. The rice now issues at the wide end or base of the cone and empties into another funnel, from which it is dropped onto an inclined screen, P, to which a shaking motion is imparted by a bar working in a cam-groove in the cam-wheel w. On this screen the blast of air is produced, as above shown,

by the blower, whereby all light particles are removed before the rice is collected.

Having thus described my invention, I claim—

1. The combination, with stationary and elastic wirebeds, of the reciprocating cast-iron plates or stone slabs, substantially in the manner and for the purpose herein described.

2. The combination, with a stationary conical screen constructed as herein described, of

a revolving shaft and inclined dashers or blades, the whole operating together, substantially as set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

SAMUEL NOWLAN.

Witnesses:

A. POLLAK,

WM. H. HARRISON.