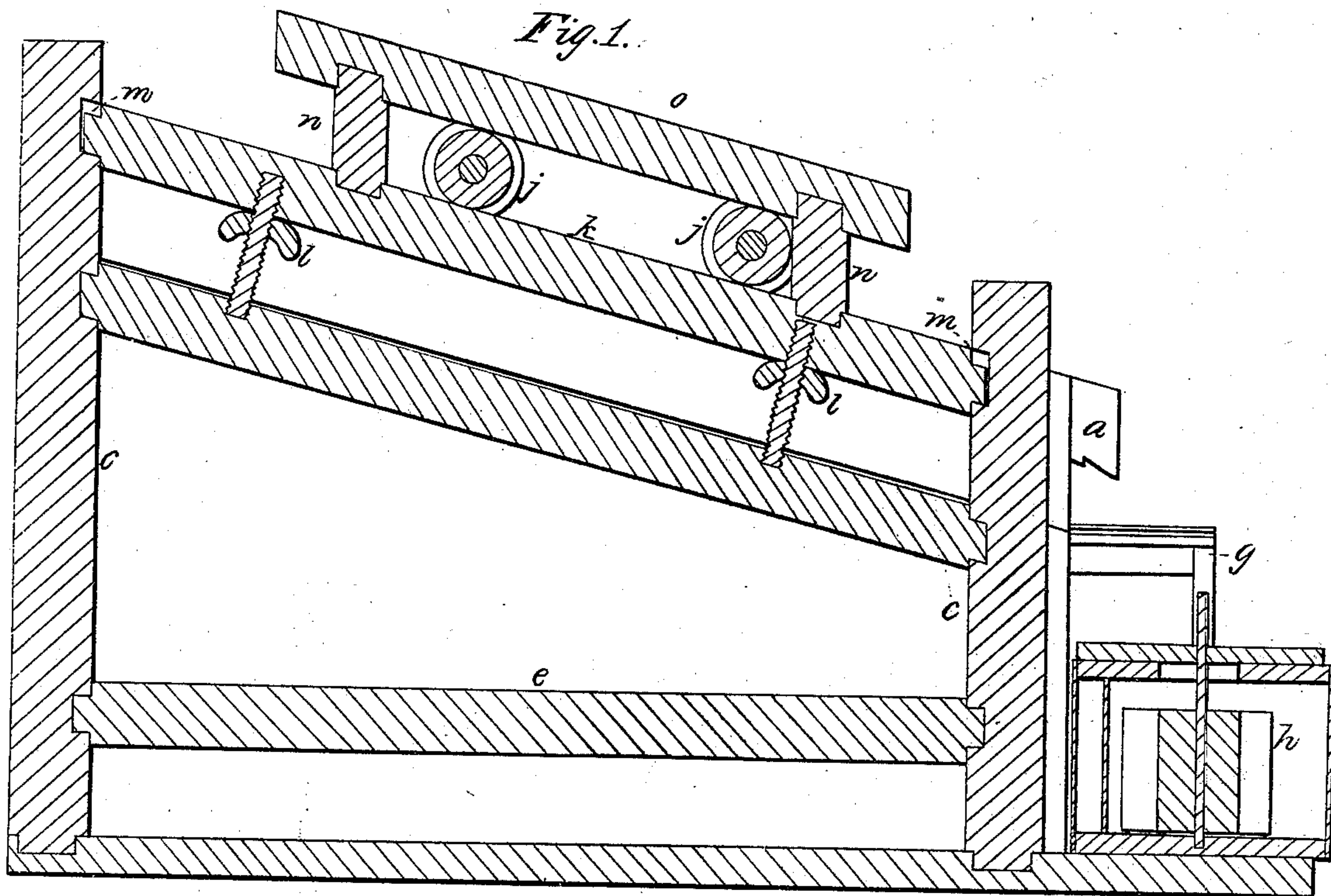


C. F. CAMPBELL.
Cleaning and Grinding Grain.

2 Sheets—Sheet 1.

No. 33,336.

Patented Sept. 24, 1861.



Witnesses:
Geo. C. Lambright
L. Smith

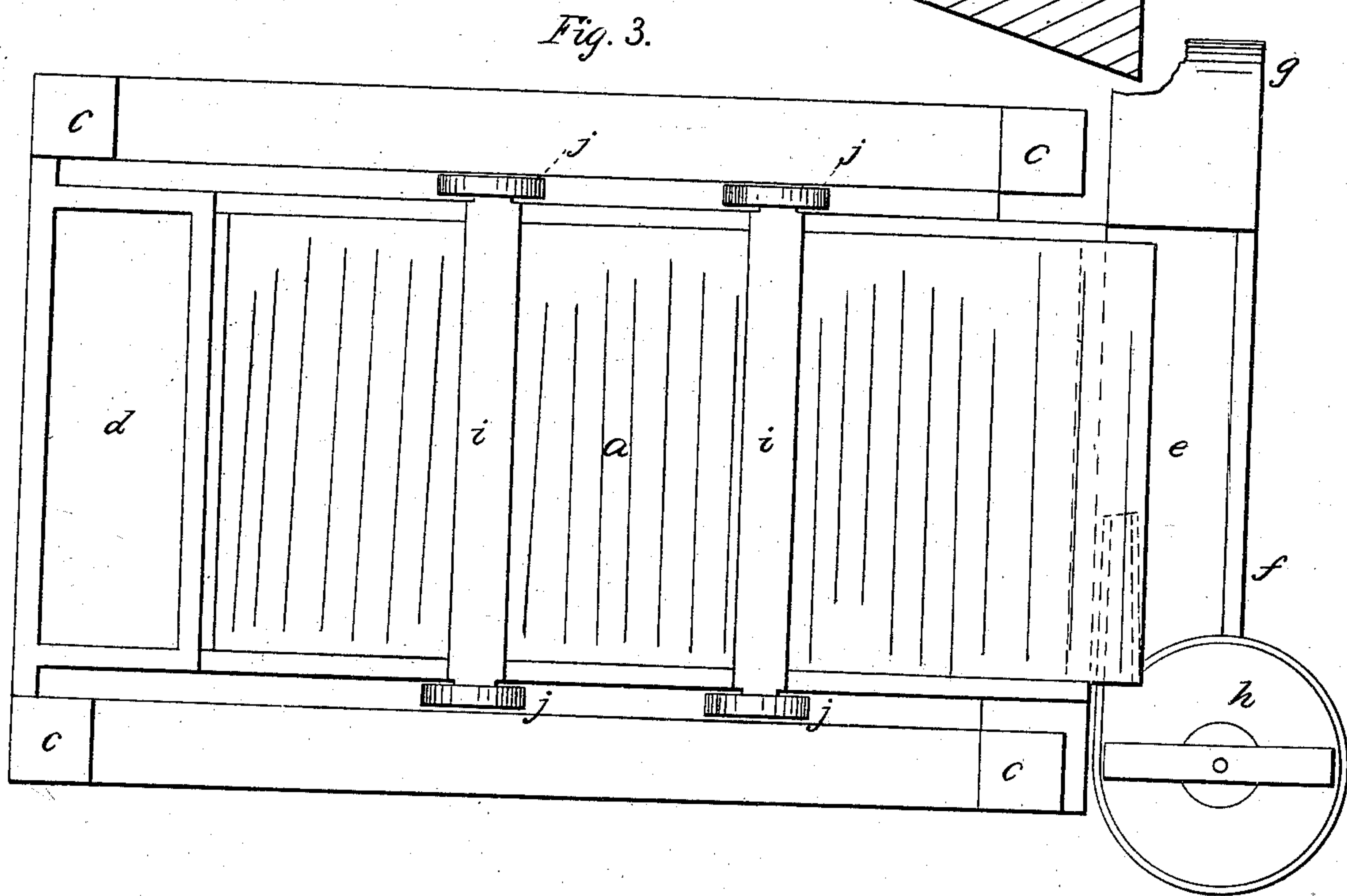
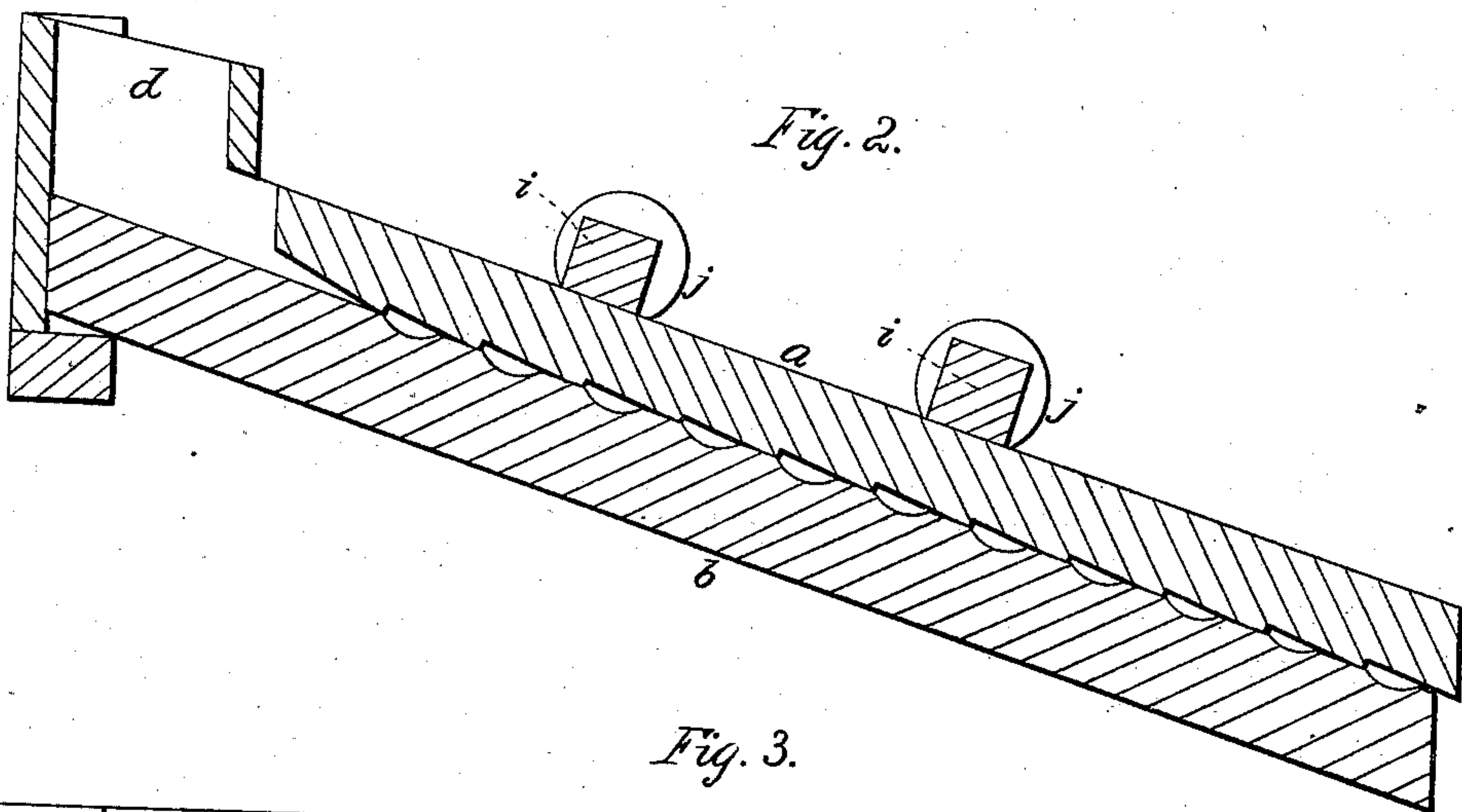
Inventor:
Charles F. Campbell
by Atty J. F. Everett.

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UNITED STATES PATENT OFFICE.

CHARLES F. CAMPBELL, OF CHENANGO, NEW YORK, ASSIGNOR TO HIMSELF
AND JOSEPH SMETHURST, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR HULLING, CLEANING, AND GRINDING GRAIN.

Specification forming part of Letters Patent No. 33,336, dated September 24, 1861.

To all whom it may concern:

Be it known that I, CHARLES F. CAMPBELL, of Chenango, in the county of Broome and State of New York, have invented a new, useful, and Improved Machine for Hulling, Cleaning, and Grinding Grain; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters and marks thereon.

The drawings forming part of this specification illustrate my invention, Figure 1 thereof being a view by vertical section through the standards or uprights of one side of the machine; Fig. 2, a view by vertical section of the hopper, the bed-stone, and the runner, and Fig. 3 being a top view of the machine.

In each of these figures where like parts are shown like letters are used to indicate the parts.

It will readily be seen that the runner *a* of this machine will have reciprocating instead of rotary motion, as is usual in this class of machines. The bed-stone *b* is firmly attached to the frame, the several parts of which are marked *c*. Both the bed-stone and runner are inclined, as shown by the drawings.

The hopper of this machine is marked *d*, the receiver of the material from the hulling or grinding surfaces at the lower end of the machine *e*, its grain-outlet being at *f*, and its chaff-outlet at *g*.

The fan-blower is marked *h*.

The runner *a* is suspended by cross-pieces *i* and friction-rollers *j* upon an adjustable bar *k*, so that the grinding or operative surfaces of the runner and bed-stone may be near to each other for grinding, or farther from each other for hulling. The adjustability of the surfaces is provided for by the screw-nuts *l* and the slots *m* in the uprights or standards.

The dress of the bed-stone and of the runner (shown by Fig. 2 of the drawings) may be used for hulling or crushing. For grinding, I prefer the dress of the bed-stone to be the same as the runner.

Both the bed and the runner may be made of burr-stone, or of cast-iron, or of any ma-

terial and in any way, of and in which other hulling or grinding surfaces are made.

The machine can be constructed of such size and dimensions as may be preferred for different kinds of work, and horse, steam, or hand power may be employed to actuate the machine, the pitman or connecting-rod being attached to one of the cross-pieces *i*, or at such point of the runner as may be most convenient.

The fan-blower may be actuated by gearing connected with the power that drives the runner or by independent means.

Short uprights *n* connect the adjustable bar *k* to other bars *o* above, which aid in guiding the friction-rollers and in steadying the movements of the runner.

It is not deemed necessary to give a minute description of the operation of this machine, as it will readily be perceived that when grain is fed into the hopper it will find its way regularly between the bed-stone and runner, be operated upon, and the hulled and cleaned grain or the flour, whichever may be in the process of being produced, will find exit at the proper points of the receiver.

The use which has been made of this machine shows that it will not cut the bran as rotary machines generally do, but will leave it flat, so that a better quality of flour will be made.

But little power will be required to work the machine. For machines of such size as farmers can use advantageously common horse-powers only will be needed.

What I claim as my invention is—

The arrangement of the bed-stone, having a dress substantially as described, in combination with the adjustable runner having reciprocating motion, and in connection therewith the receiver *e*, with the fan-blower and the exits, as herein recited.

This specification signed this 3d day of August, 1861.

CHARLES F. CAMPBELL.

Witnesses:

B. N. LOOMIS,
T. LOOMIS.