

C. MAYER.

MACHINE FOR CLEANING REFUSE RUBBER.

No. 409,693.

Patented Aug. 27, 1889.

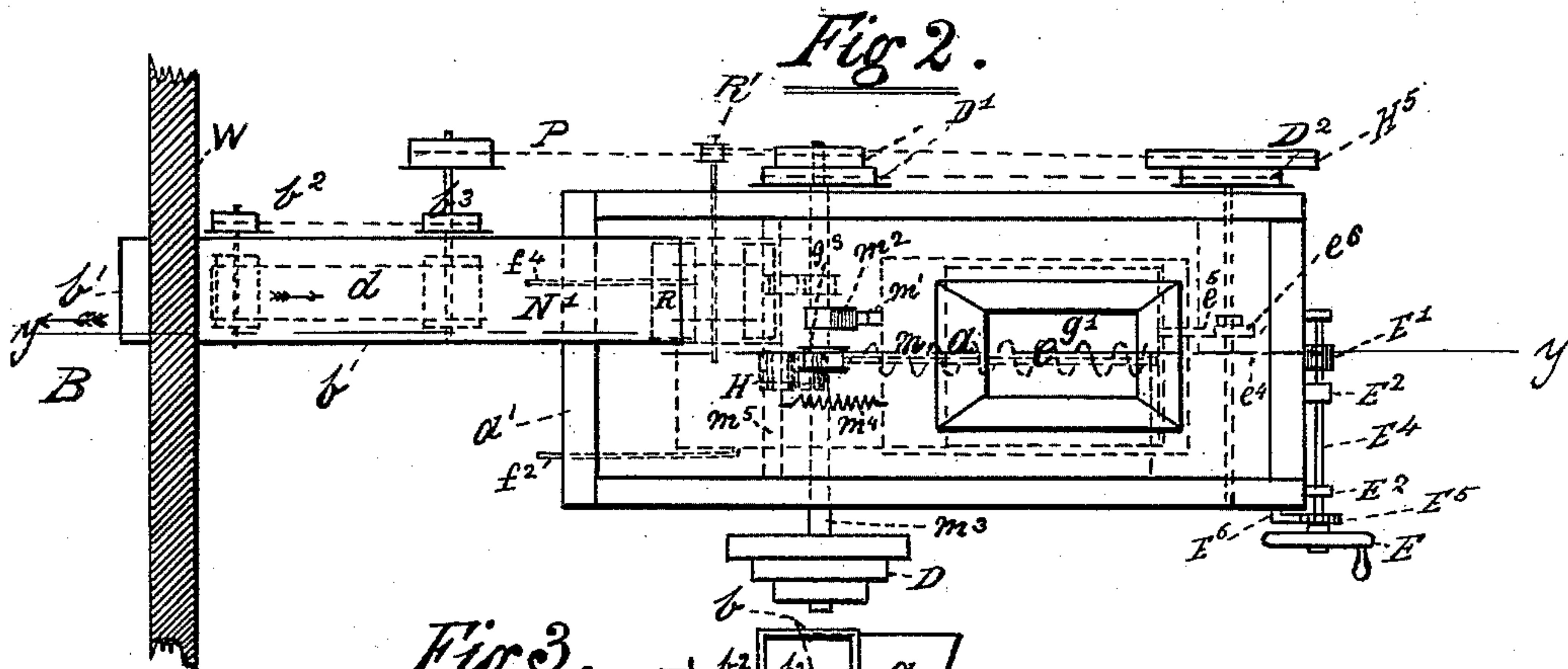
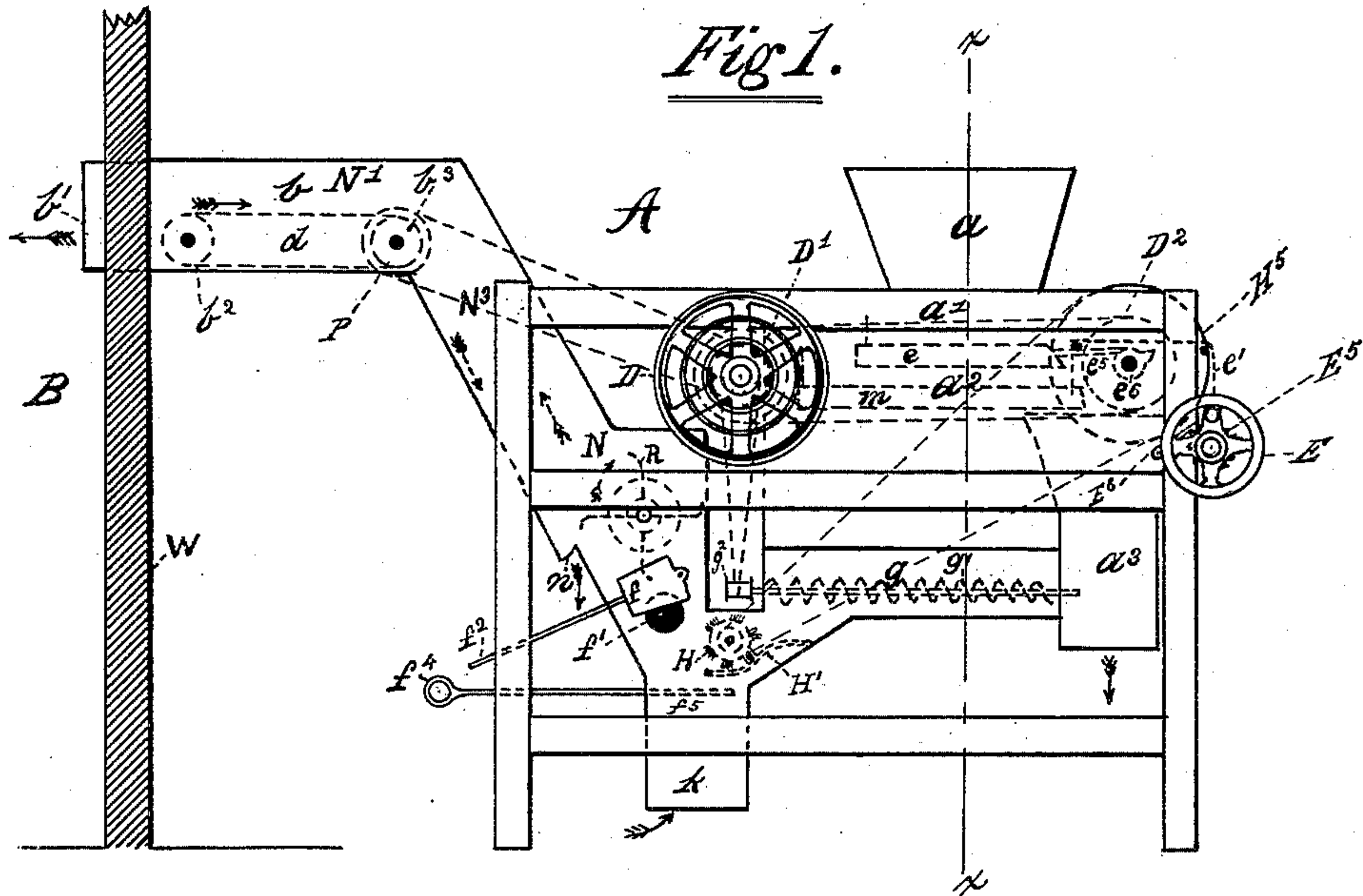
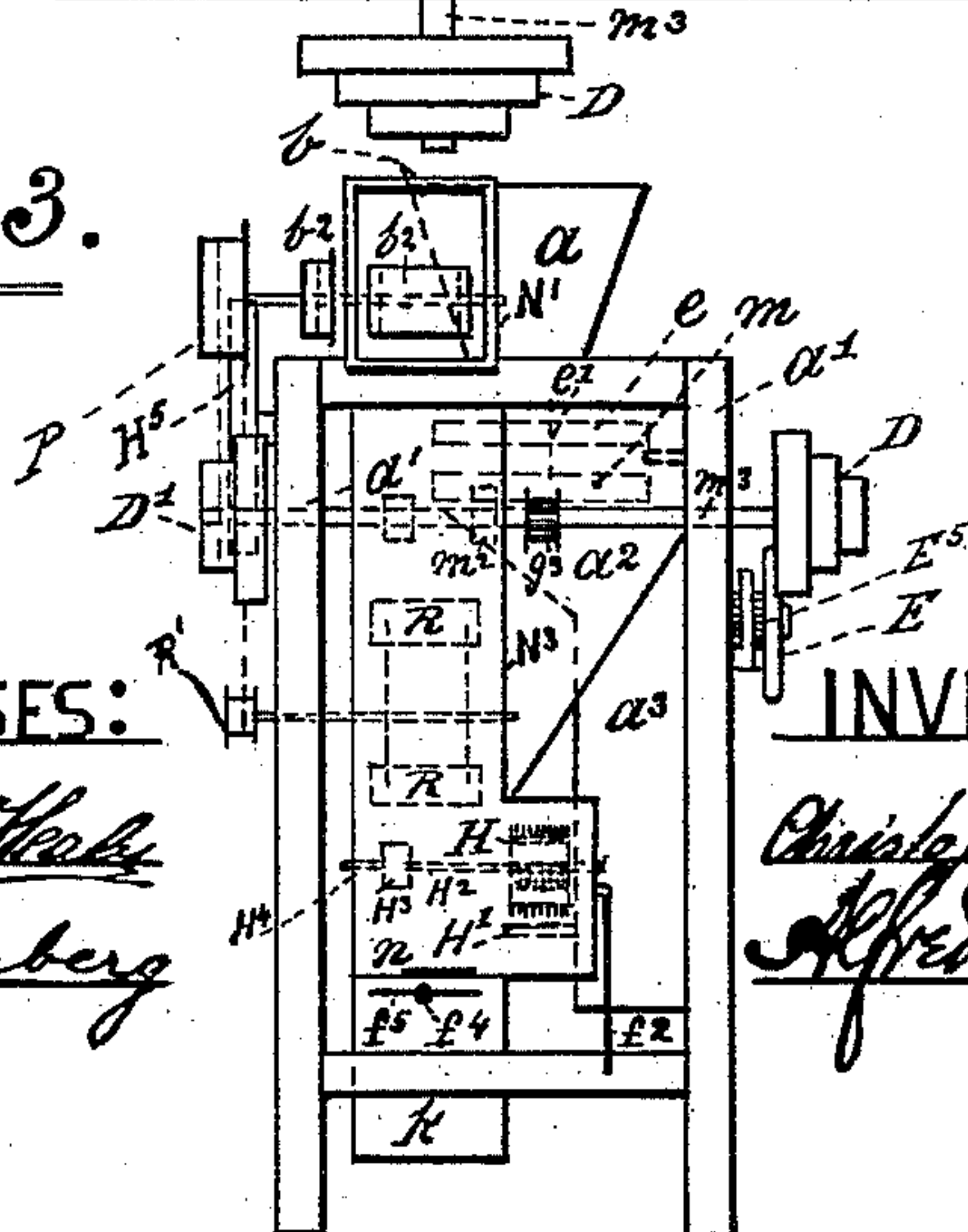


Fig 3.



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Fig. 5.

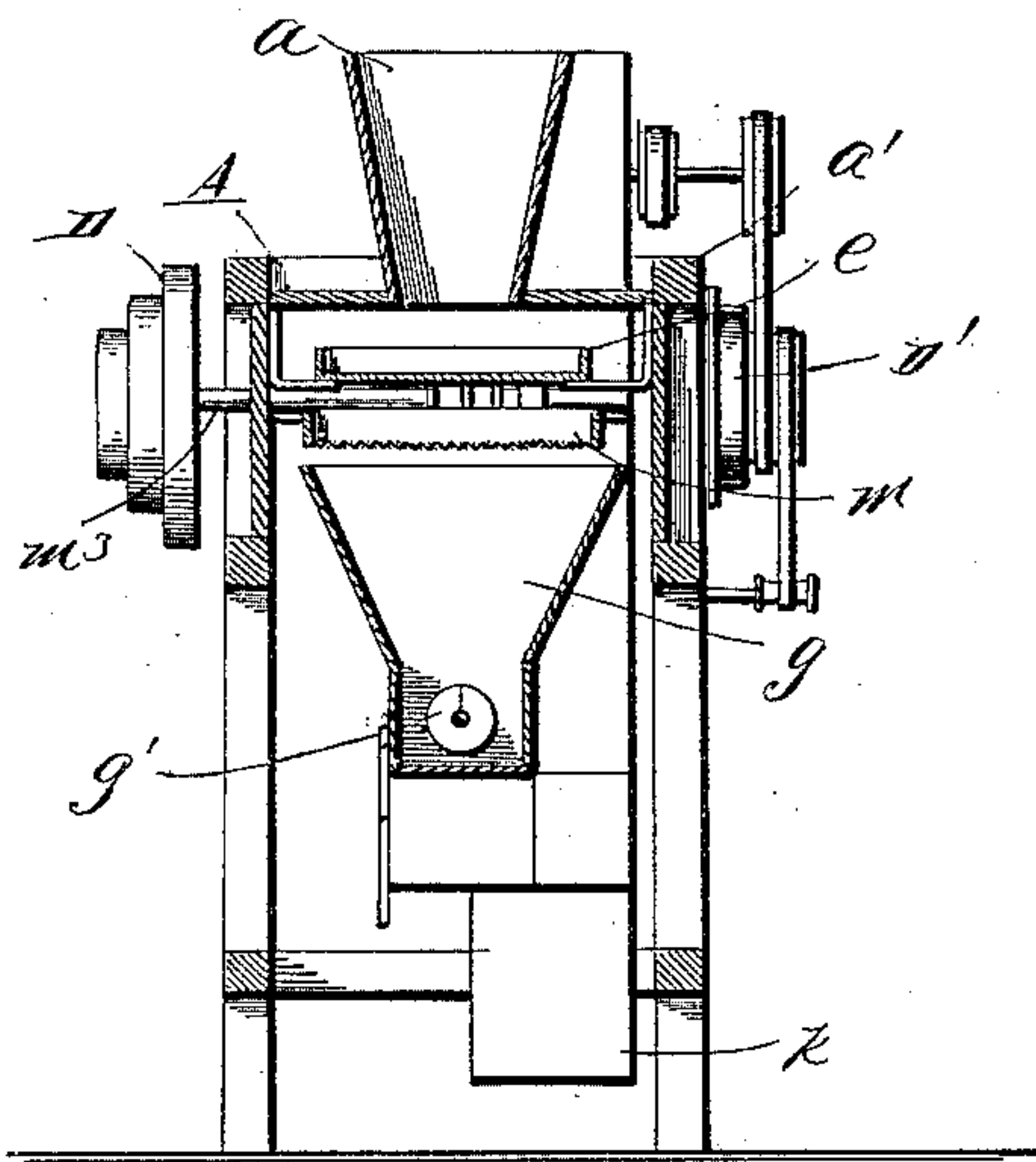
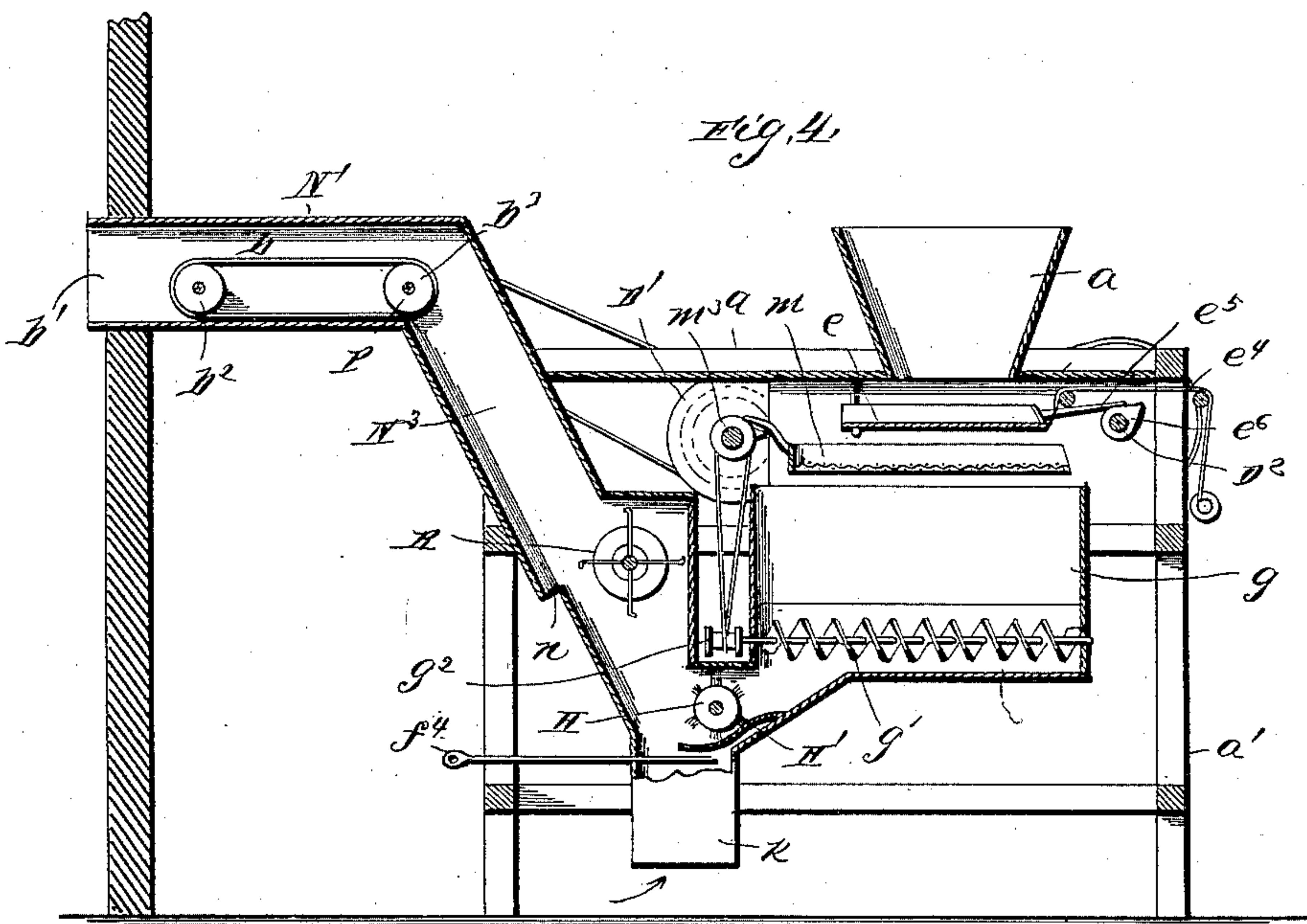


Fig. 4.



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MACHINE FOR CLEANING REFUSE RUBBER.

SPECIFICATION forming part of Letters Patent No. 409,693, dated August 27, 1889.

Application filed August 12, 1886. Serial No. 210,757. (No model.)

To all whom it may concern:

Be it known that I, CHRISTOPH MAYER, a resident of Butler, in the county of Morris and State of New Jersey, have invented certain
5 new and useful Improvements in Machines for Cleaning Refuse Rubber; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as
10 it pertains to make and use the same.

My invention relates to an improvement in machines for cleaning waste rubber and other materials, to fit the same for use and render them salable and capable of being reworked
15 into useful articles; and it consists in the peculiar construction and combination of devices hereinafter described and claimed.

In the accompanying drawings, Figure 1 is an elevation of the machine. Fig. 2 is a plan
20 view of the same. Fig. 3 is a front view of the same. Fig. 4 is a longitudinal section taken on the line *y y* of Fig. 2. Fig. 5 is a vertical transverse section taken on line *x x* of Fig. 1.

25 *a'* represents a frame-work of wood or other suitable material, consisting of two sides firmly secured together by end braces.

Located on the upper side or cover at one end of the machine A is a conical hopper or
30 feeding-box *a*, beneath which and under the cover at a suitable distance is a shaking trough *e*, resting upon a ledge or projection on each side of the frame *a'*, and having at its free end an arm *e*⁵, extending outward, resting
35 upon and in connection with cam *e*⁶, secured to the shaft D². The end of the trough *e* opposite to the cam is supported by a cord or chain *e*⁴, attached to and partly wound upon a drum E', located on the shaft E⁴. Said shaft
40 is journaled in suitable brackets E². On its outer end the shaft E⁴ has a ratchet-wheel E⁵ and hand-wheel E. A pawl E⁶ engages the ratchet-wheel. Below the shaking trough *e*, at a suitable distance, is placed a wire sieve
45 *m*, of a requisite-sized mesh, located in a rectangular frame, one end of which is open for the delivery of material and the other end is provided with an arm *m*¹, extending outward and engaging a cam *m*², secured to the shaft *m*³.

50 To the frame of the sieve *m* is fastened one end of a spiral spring *m*⁴, the other end of

which is fastened to the cross-bar *m*⁵, which is a part of the main frame *a'*.

At the end of the machine, and located in a suitable position, is a hopper or duct *a*³, of
55 such a form that it will receive the material cast off or rejected by the sieve and conduct it out of the machine to the floor. Below the sieve *m* is a trough or box *g*, closed at one end and bottom and having inclined sides with
60 their upper edges wider apart than the width of the sieve *m*.

In the lower portion of the box or trough is an Archimedean screw or worm *g*¹, provided with suitable conveying-blades. The shaft
65 of the screw is supported by suitable bearings and driven by a pulley *g*², which is driven by a pulley *g*³, located on the driving-shaft *m*³. The inner end of the screw is located in a box N, the lower part of which is provided with
70 a plate H', suitably formed to act as a scrubbing-bed for the rotary brush H, which is located on shaft H² and driven by pulleys H³.

Shaft H² is journaled in suitable bearings H⁴, secured to the side frames *a'*. From the
75 box N an inclined vertical trunk N³ is carried upward to a suitable height, and in said trunk is an exhaust fan or blower R, placed a suitable distance above the rotary brush H and driven by the pulley R'. On the side of
80 the trunk N is an opening or ventilator *f*¹, provided with a shutter or door *f* and operated by the leader *f*². In the front of the trunk N a sliding plate *f*⁵ is inserted in a suitable orifice formed in the front casing of the
85 trunk N and provided with a handle *f*⁴. In the lower part of the trunk N is a mouth or opening *k*, to permit the entrance of air and the exit of accumulated dust.

The front of the trunk N is provided with an
90 opening *n* some distance below the ventilating fan or blower R. Above the inclined trunk N is located a horizontal trunk N', which leads from the machine A to a chamber B, formed for the purpose of receiving the cleansed ma-
95 terial. Located at *b* within the trunk N' are rollers *b*² *b*³, secured to suitable shafts seated in proper bearings and driven by the pulleys P D'. The rollers *b*² *b*³ carry an endless belt or apron *b*, which travels in an opposite di-
100 rection to the current of air created by the fan or blower R.

I will now describe the process of cleaning and the operation of my newly-invented machine.

Refuse, waste particles of rubber, or other materials intended to be cleaned, are fed into the hopper *a*, and, falling upon the shaking-trough *e*, are fed in an even and regular manner upon the sieve *m*, the amount or rapidity of the feed being determined by inclining the trough to any requisite pitch, which may be done by raising the closed end by means of the cord *e*⁴, operated by the hand-wheel *E*.

It will be understood that the cam *e*⁶ and arm *e*⁵ serve to agitate the trough. The sieve *m* rejects the coarser particles, and they are passed out of the machine through the duct or tube *a*³. The finer particles pass through the meshes of the sieve *m* and fall into the box *g*, the inclined sides of which cause the material in process of cleansing to come into contact with the Archimedean screw or worm *g*¹, the blades of which convey the material to the scrubbing-plate *H*¹ and under the rotary brush *H*. The particles and impurities are separated and cleaned from dust by the action of the brush *H* and plate *H*¹, and are withdrawn by the action of the rotary exhausting fan or blower *R* and carried upward through the vertical trunk *N* and the horizontal trunk *N*³ into the chamber *B* through the orifice or opening *b*¹.

The ventilators *f*² and slide *f*⁵ are adjusted by the handles *f*² *f*⁴ to limit the current of air in velocity and in order to allow the dirt or heavier particles to fall upon an endless apron or conveyer *d*, and which heavy particles are returned to the inclined trough or duct *N*, pass down the inclined side, and slide through the orifice *n* out of the machine *A* into a suitable receptacle. The requisite speed of the machine is regulated by a cone

speed-pulley *D*, having a number of surfaces of different diameters, in the usual manner, and the requisite degree of cleansing by the size of the mesh of the sieve *m*, speed of rotary brush *H*, velocity of fan or blower *R*, and the due adjustment of the ventilators *f* *f*⁵.

What I claim is—

1. The combination of the frame *a*¹, hopper *a*, shaking trough *e*, having arm *e*⁵, cam *e*⁶, and shaft *D*², duct *a*³, cord or chain *e*⁴, drum *E*¹, shaft *E*⁴, pawl *E*⁶, wheel *E*⁵, and hand-wheel *E*, substantially as described.

2. The combination of the frame *a*¹ with the trough *g*, screw *g*¹, rotary brush *H*, scrubbing-plate *H*¹, fan *R*, trunks *N* *N*¹, and endless belt or conveyer *d*, substantially as specified.

3. The trough *g*, the plate *H*¹, and revolving brush *H*, in combination with the inclined trunk *N*, communicating with trough *g*, the fan or blower, the horizontal trunk *N*¹, and the endless carrier in the lower side of said trunk, substantially as described.

4. The trough *g*, the plate *H*¹, the revolving brush *H*, in contact with said plate, and the screw to feed material to said plate and brush, all in combination, substantially as described.

5. The combination, in an apparatus for cleaning waste rubber, of the plate and revolving brush, the screw to feed material to said plate and brush, and the fan or blower, substantially as described.

6. The trough *g*, having plate *H*¹, and revolving brush *H*, in combination with the inclined trunk *N*, communicating with trough *g*, and having the mouth *k*, the slide *f*⁵, and the fan or blower, substantially as described.

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