

(No Model.)

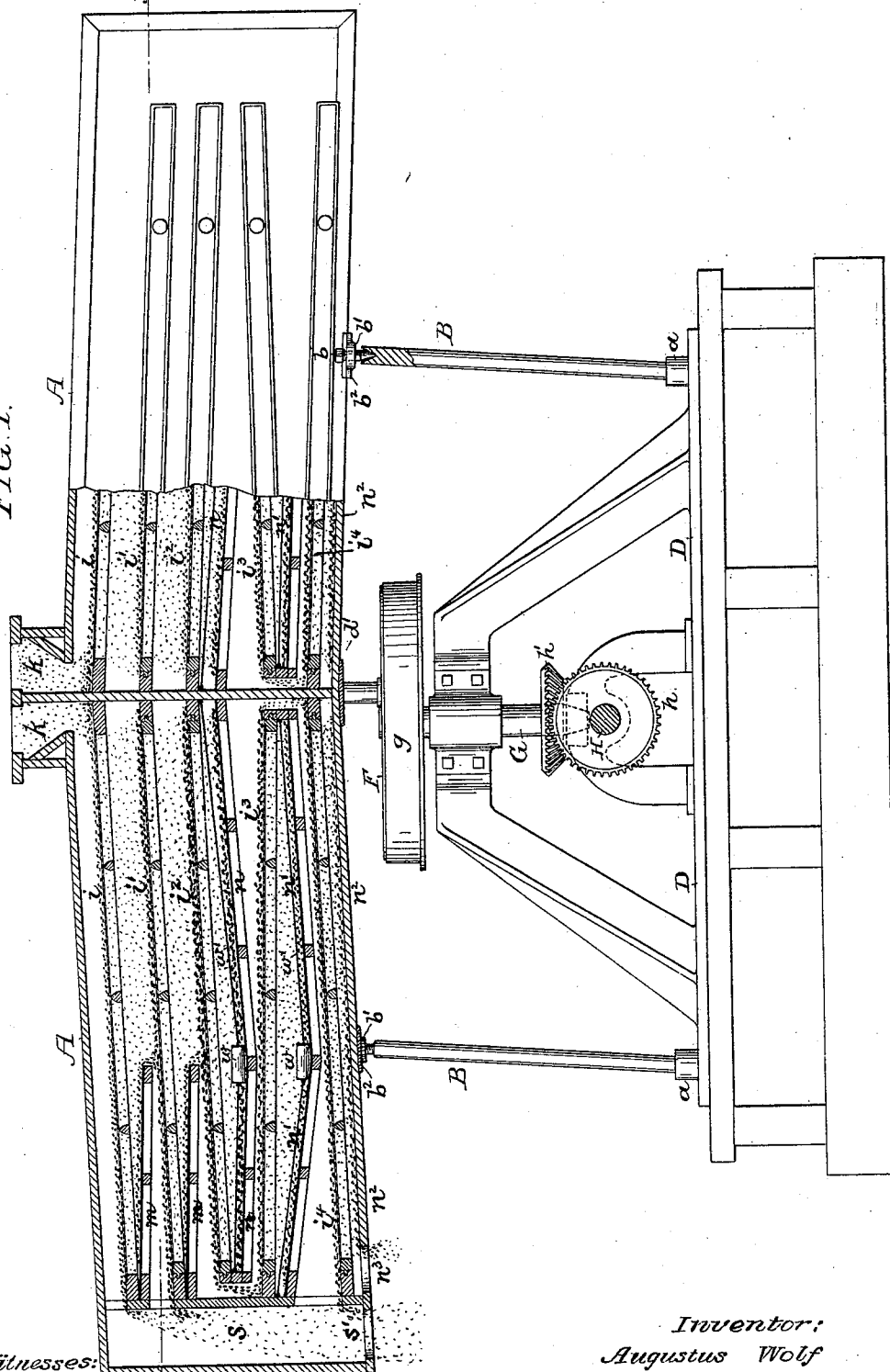
4 Sheets—Sheet 1.

A. WOLF.
GYRATING SIEVE OR BOLTING MACHINE.

No. 595,985.

Patented Dec. 21, 1897.

FIG. 1.



Witnesses:
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Chas. De Bour.

Inventor:
Augustus Wolf
by his Attorneys
Howson & Howson

(No Model.)

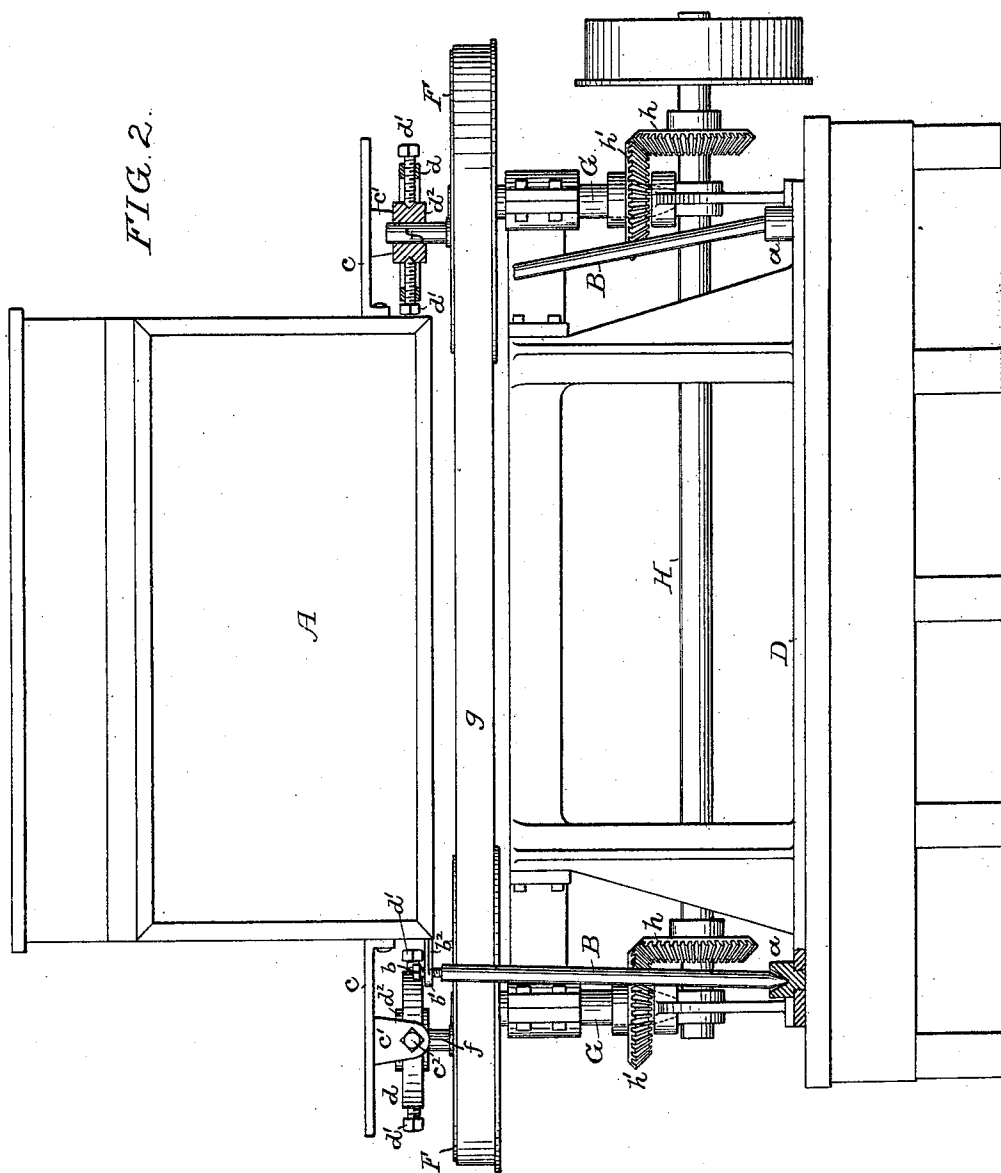
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(No Model.)

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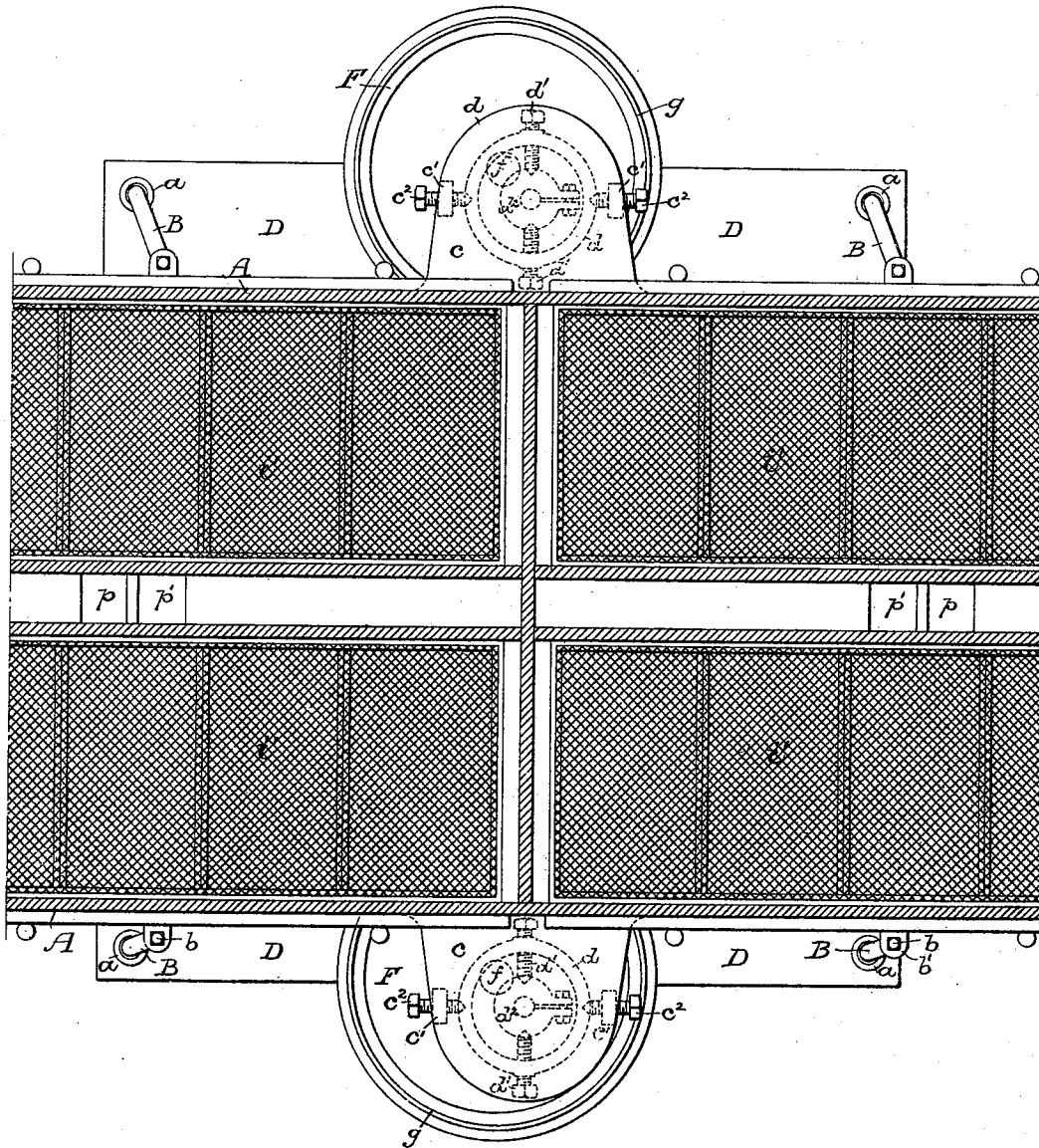
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FIG. 3



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(No Model.)

4 Sheets—Sheet 4.

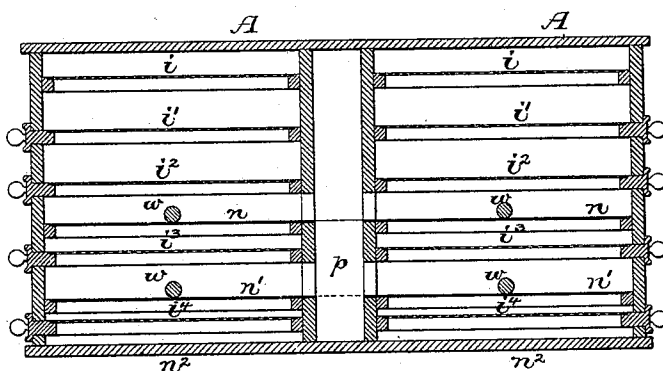
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FIG. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

AUGUSTUS WOLF, OF CHAMBERSBURG, PENNSYLVANIA.

GYRATING SIEVE OR BOLTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 595,985, dated December 21, 1897.

Application filed November 21, 1895. Serial No. 569,712. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS WOLF, a citizen of the United States, and a resident of Chambersburg, Pennsylvania, have invented certain Improvements in Gyrating Sieves or Bolting-Machines, of which the following is a specification.

One object of my invention is to provide means for supporting from below the sieve-casing of a gyrating sieve and bolting-machine in such manner that the said casing can have free horizontal movement in all directions, a further object being to provide for ready access to any of the sieves without disturbing the others, and a still further object being to reduce the size of the machine. These objects I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a side view, partly in section, of a gyrating sieve and bolting-machine constructed in accordance with my invention. Fig. 2 is an end view of the same. Fig. 3 is a sectional plan view of part of the machine on the line 3 3, Fig. 1; and Fig. 4 is a transverse sectional view of the sieve-casing of the machine, taken on the line *y y*, Fig. 1.

A represents the sieve-casing of that form of bolting apparatus in which the sieve-casing or bolting-chest has a gyrating movement, this casing being mounted upon four rods B, located two upon each side of the casing at points substantially equidistant from the center of the same. The lower ends of these rods B rest in sockets *a*, secured to a suitable bed-plate D upon the floor of the room or apartment containing the machine, the upper end of each rod being socketed for the reception of the lower end of a set-screw *b*, which is carried by a projecting lug *b'* on a plate *b²*, secured to the bottom of the casing A, the character of the sockets *a* in respect to the lower ends of the rods B and the character of the sockets in said rods in respect to the set-screws *b* being such that free tipping or tilting movement of said rods in the sockets *a* and like free tipping or tilting movement of the set-screws *b* in the sockets of the rods B are permitted. A sieve-casing supported in this way can be operated with a minimum amount of power and without causing that

vibration of the building which is an objection to gyrating sieve-casings supported from above in the usual way.

Projecting from each side of the casing A is a bracket-plate *c*, with depending lugs *c'*, which carry set-screws *c²*, upon which is pivotally mounted a ring *d*, having set-screws *d'* in a plane at right angles to that of the set-screws *c²*, and upon said set-screws *d'* is pivotally mounted a bearing box or block *d²*, which receives a crank-pin *f*, rigidly secured to and projecting upwardly from a disk F, the box *d²* being preferably split and provided with a tightening-bolt, as shown by dotted lines in Fig. 3, so that it can at all times be caused to fit snugly to the crank-pin *f*.

The opposite disks F are carried by vertical shafts G and are connected by a belt *g*, so as to be caused to rotate in unison, power being applied to each of the upright shafts G from a transverse shaft H through the medium of bevel-wheels *h h'*, as shown in Fig. 2. This positive driving of each shaft in connection with the belting of the disks F together insures the rotation of said disks at the desired uniform speed and without any backlash, which might occur if the bevel-gears only were employed. As the disks are rotated, therefore, the casing A is caused to move in a horizontal plane and in a circular path corresponding with that of the crank-pins *f*, the rods B providing the necessary vertical support for the casing and the crank-pins governing the longitudinal and lateral movements of said casing, whereas if only a single driving connection were used, as heretofore, the gyrating movement of the casing A would be unsteady, thereby necessitating the use of additional supporting means from above the machine in order to properly balance the movements, which means are entirely dispensed with in my construction, where the parts in motion are properly controlled by the double driving means in such manner as to secure a uniformly regular speed in a horizontal plane without any unsteadiness of motion.

The universally flexible mounting provided for the crank-pin boxes *d²* prevents any binding of the crank-pins in said boxes or heating of either of the parts due to such bind-

ing which might be caused by settling of any part of the supporting or driving structure and lack of proper alinement due thereto.

The sieve structure comprises the sieves i , i' , i^2 , i^3 , and i^4 , the three upper sieves and the bottom sieve being inclined outwardly and downwardly from the center of the machine and the intermediate sieve being inclined inwardly and downwardly toward the center of the machine. The material from the central hopper k is therefore delivered onto the head of each of the top sieves i , and those portions passing through each sieve i are received by the second sieve i' , part of such material falling directly upon the sieve i' and part of it being directed onto the same by a directing-board m , located beneath the tail end of the sieve i , extending part way under the same and inclined in a direction the reverse of the sieve. In the same way the material from the sieve i' is directed onto the sieve i^2 and that from the sieve i^2 is directed onto a collecting-table n , which guides it to the outlet-openings $p p'$, located centrally in the sieve-casing, there being a set of sieves on each side of the same, as shown in Fig. 3. The tailings from the sieves $i i'$ are delivered into a chamber s at the end of the machine; but those from the sieve i^2 are delivered onto the sieve i^3 , the material passing through the latter being caught by a collecting-table n' , which likewise guides it to the openings $p p'$. The tailings from the sieve i^3 are directed onto the bottom sieve i^4 , and the material which passes through the latter is received by the inclined bottom n^2 of the casing and directed to the outlet n^3 , the tailings from the sieve i^4 escaping into the chamber s , from which they are discharged through the opening s' .

The openings $p p'$ may be provided with suitable valves, so that either can be cut off and the other used as the discharge.

By using the short directing-boards m the size of the machine is much reduced as compared with one having directing-boards running the full length, owing to the less vertical space occupied by the said short boards.

Each of the sieves i' , i^2 , i^3 , and i^4 has end slats adapted to guides in suitable strips within the casing, so that said sieve-frames can be introduced and withdrawn from the sides of the casing like drawers, and either of the sieves can thus be readily withdrawn without disturbing the others. Hence each sieve is

readily accessible for cleaning or repairs, the top sieve i being accessible from the top of the machine.

At the lowest portion of each of the collecting-tables $n n'$ of the machine is a block or weight w , which is carried by a cord w' , extending to the opposite ends of the table, these weights or blocks as the sieve-casing is gyrated moving about on the lowest portions of the tables and serving to aid in directing the material from said tables to the outlets $p p'$.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination of the sieve-casing, the supporting-rods having socket-bearings on said casing and on the base-plate, a pair of disks each having a crank-pin, crank-pin boxes universally pivoted to the sieve-casing and free to rise and fall on the crank-pins, and means for rotating the disks in unison.

2. The combination of the sieve-casing, the supporting-rods having socket-bearings on said casing and on the bed-plate, a pair of disks each having a crank-pin, crank-pin boxes on the sieve-casing, vertical shafts carrying the disks, a transverse driving-shaft, bevel-gearing whereby the vertical shafts are driven therefrom, and a belt passing round disks or pulleys on the two shafts, whereby said disks are positively driven and backlash due to loose mesh of the bevel-gears is prevented, substantially as specified.

3. The herein-described improvement in bolting-machines, consisting in the combination of the gyratory casing provided with vertical interior partitions forming stops for the sieves, and a central outlet, the vertical series of endwise-discharging sieves insertible and withdrawable laterally toward and from said interior partitions through openings in the outside opposite exterior walls of the casing, and collecting-plates arranged between the sieves of each vertical series and discharging laterally of the sieves into said central outlet through openings in the walls thereof, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

AUGUSTUS WOLF.

Witnesses:

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J. A. STRITE.