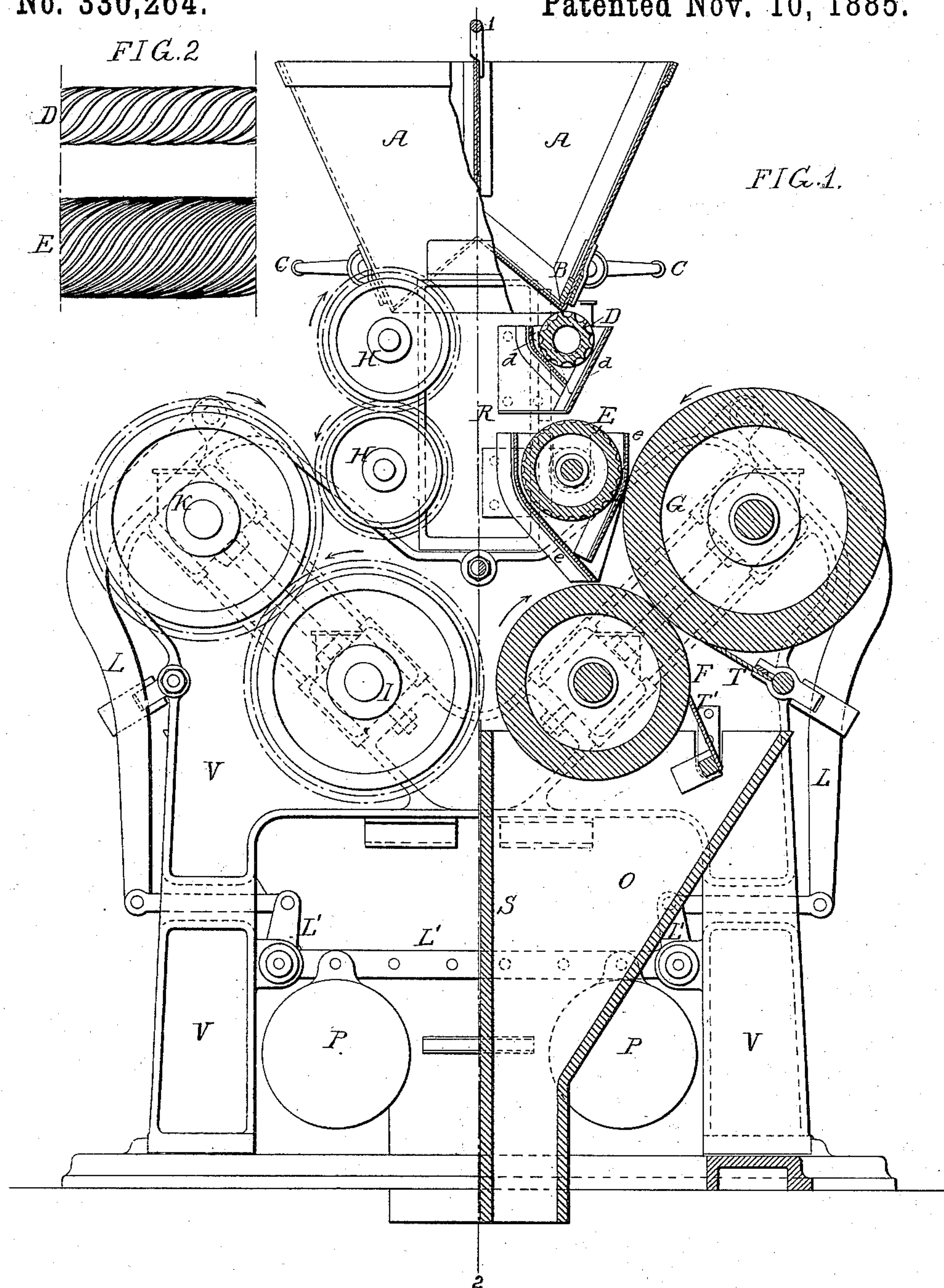


(No Model.)

H. F. SAINT REQUIER.
ROLLER MILL.

No. 330,264.

Patented Nov. 10, 1885.



Witnesses:
John E. Parker
Harry Drury

Inventor:
Henry F. St. Requier
by his Attorneys
Howen and Co.

UNITED STATES PATENT OFFICE.

HENRY F. SAINT REQUIER, OF PARIS, FRANCE, ASSIGNOR TO LA SOCIÉTÉ ANONYME POUR LES PROCÉDES BREVETES DE FARINERIE SAINT REQUIER, OF SAME PLACE.

ROLLER-MILL.

SPECIFICATION forming part of Letters Patent No. 330,264, dated November 10, 1885.

Application filed June 23, 1884. Serial No. 135,772. (No model.) Patented in France July 20, 1882, No. 150,207; in Belgium April 5, 1884, No. 64,747; in England April 8, 1884, No. 6,134; in Italy April 12, 1884, No. 16,715; in Spain July 28, 1884, No. 6,063, and in Austria August 29, 1884, No. 13,846.

To all whom it may concern:

Be it known that I, HENRY FERDINAND SAINT REQUIER, a citizen of the Republic of France, and residing in Paris, France, have
5 invented certain Improvements in Roller-Mills, (for which I have obtained certificate of addition in France, dated April 4, 1884, to original Patent No. 150,207, July 20, 1882, also British Patent No. 6,134, April 8, 1884,
10 Austrian Patent No. 13,846, August 29, 1884, Belgian Patent No. 64,747, April 5, 1884, Spanish Patent No. 6,063, July 28, 1884, and Italian Patent No. 16,715, April 12, 1884,) of which the following is a specification.

15 The object of my invention is to so construct the feeding devices of roller-mills that the grain will be fed to the crushing-rolls in a continuous stream of uniform thickness, with the individual particles of grain evenly distributed in a single layer over the entire surface, and this object I attain as fully described
20 hereinafter.

In the accompanying drawings, Figure 1 is an elevation of my improved machine with
25 one-half on the right-hand side of the dotted line 1 2 in section, and Fig. 2 is a view of parts of the two distributing feed-rollers detached.

The apparatus shown in the drawings is for
30 convenience made with duplicate parts, one set on either side of the central dotted line 1 2, and each set in the present instance consists of three hoppers, two grooved distributing-rolls, and a pair of crushing-rolls.

35 A is the principal feed-hopper, which is in two parts, for supplying the grain to be crushed to the two sets of distributing and crushing rolls. The two delivering-openings of the two-part hopper A are controlled by regulating-slides B, adjustable by the hand-levers C. Immediately below each delivery-opening of this
40 hopper is a distributing-roll, B, having journals adapted to bearings in the side pieces, R, mounted on the frame V of the machine. This distributing-roll is grooved helicoidally, as illustrated in Fig. 2, the size of the grooves being proportioned to the coarseness of the grain to be treated. On opposite sides of the

roll D are fixed to the frame inclined guiding-plates *d*, which may be termed a "hopper," and
50 below the discharge-opening of this hopper is a second distributing-roll, E, preferably of about twice the diameter of the roll D, and grooved with finer grooves. This roll E also has journals adapted to bearings in the side
55 pieces, R, and has hopper-plate *e* to direct the grain onto the lower of the two crushing-rolls F G. The roll F is mounted in fixed bearings I in the frame of the machine, while the roll G is carried in adjustable bearings K,
60 on which bear the system of levers L L', and adjustable counter-weights P to vary the pressure of the roll G on the lower roll, F. O is the hopper to receive the crushed material from both sets of crushing-rolls, and T T are
65 pivoted and counterweighted scrapers to keep the rolls clear.

The two sets of apparatus—one on each side of the machine—are separated by a vertical partition, S. The distributing and crushing
70 rolls are suitably geared together, as indicated by dotted lines, and are driven so as to revolve in the direction pointed out by the arrows.

The grain, flowing out of the hopper A, falls onto the first grooved roll, D, which attenu-
75 ates or lengthens out the stream of grain, and thence the hopper *d* directs the stream onto the second roll, E, in a direction opposite to that in which the roll revolves. This second roll further thins and spreads out uniformly
80 the stream of grain, which is then directed by the hopper *e* onto the lower crushing-roll, and here the stream receives its final spreading before it passes between the crushing-rolls. The roll E is driven at the same speed as the roll D;
85 but, as it is of about twice the diameter of the latter, it affords a much larger surface for the grain to lodge in, and consequently to spread out upon. The function of these two rollers, it will be seen, is simply that of distributing
90 and spreading out the grain into a uniform layer. The lower roll, F, however, which is of about twice the diameter of the roll E, serves both for the distribution and crushing of the grain. The hopper-plates *d* and *e* regulate
95 the flow of the particles of grain and

serve to distribute the stream breadthwise into a uniformly thin layer, while the rolls serve to thin the stream lengthwise.

The crushing-rolls FG may be either smooth
5 or grooved, according to requirements and the nature of the substance under treatment.

I claim as my invention—

1. The combination of a pair of crushing-rolls, feed-hopper, and plates, with two
10 grooved distributing-rolls, D and E, one over the other, the upper roll having larger grooves than the lower one, substantially as described.

2. The combination of a pair of crushing-rolls and feed-hopper A, with grooved dis-
15 tributing-rolls D and E, between the hopper and crushing-rolls, and the hopper-plates d and e, the lower roll, E, being about twice the

diameter of the upper roll, D, substantially as and for the purpose set forth.

3. The combination of a pair of crushing- 20 rolls, F G, and the feed-hopper A, with distributing-rolls D and E, and hopper-plates, within which the distributing-rolls may revolve, the said roll E being about half the diameter of the crushing-roll F, and the roll D 25 being about half the diameter of the roll E, substantially as and for the purpose set forth.

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

H. F. SAINT REQUIER.

Witnesses:

HRI. JEUMENT,
ALFRED COINE.