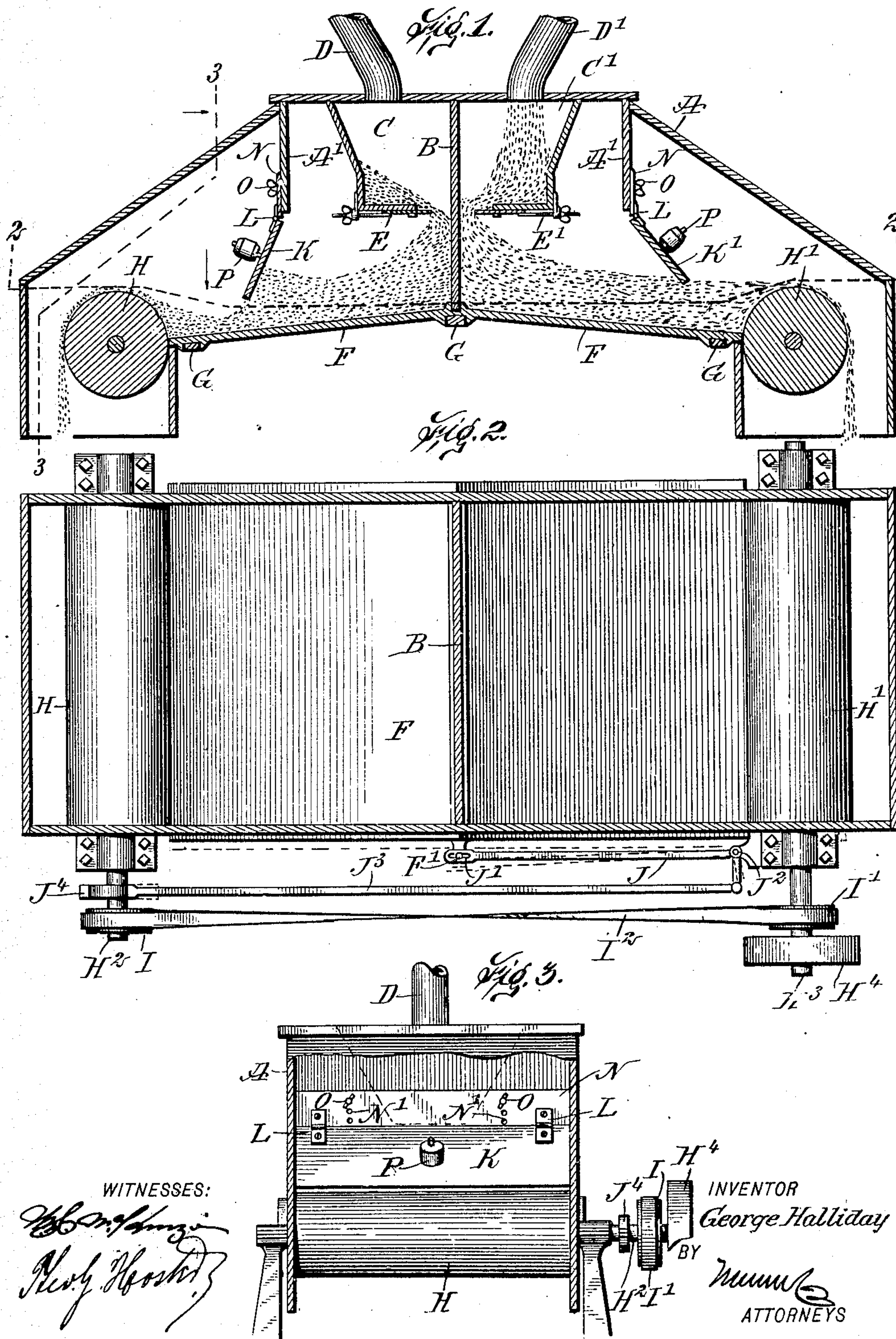


No. 860,371.

PATENTED JULY 16, 1907.

G. HALLIDAY.
FEEDING DEVICE.

APPLICATION FILED NOV. 15, 1905.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE HALLIDAY, OF SUPERIOR, WISCONSIN.

FEEDING DEVICE.

No. 860,371.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed November 15, 1905. Serial No. 287,421.

To all whom it may concern:

Be it known that I, GEORGE HALLIDAY, a citizen of the United States, and a resident of Superior, in the county of Douglas and State of Wisconsin, have invented a new and Improved Feeding Device, of which the following is a full, clear, and exact description.

The invention relates to devices for feeding flour stock and other materials in a thin stream to a machine for further treatment of the material.

10 The object of the invention is to provide a new and improved feeding device arranged to insure the formation of a thin and uniform stream of the material throughout the width of the feed-box and without danger of blocking or choking up by the stock or foreign materials that may be in the stock.

The invention consists of novel features and parts and combinations of the same which will be more fully described hereinafter and then pointed out in the claims.

20 A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

25 Figure 1 is a sectional side elevation of the improvement as applied to a double roller mill; Fig. 2 is a sectional plan view of the same, on the line 2—2 of Fig. 1; and Fig. 3 is a transverse section of the same, on the line 3—3 of Fig. 1.

30 The improved feeding device, as shown in the drawings, is applied to a double roller mill, and for this purpose the feed-box A is provided with a transverse partition B for dividing the feed-box A into two chambers C and C', into which the material is discharged through suitable feeding spouts D and D'. In the chambers C and C' are arranged adjustable hold-back gates E and 35 E' for regulating the flow of the material down onto the distributing board F which forms the bottom for both chambers C and C', and is mounted to slide transversely on suitable guideways G, as indicated in Fig. 1. The distributing board F in each chamber C and 40 C' is inclined downwardly toward the corresponding feed-rolls H and H', with which the outer sides of the distributing board are in peripheral contact at the inner sides of the feed-rolls, as plainly shown in Fig. 1. Both feed-rolls H and H' rotate in unison, and for this purpose 45 their shafts H² and H³ are connected with each other by pulleys I and I' and a belt I², and on the shaft H³ is secured a pulley H⁴ connected by a belt with other machinery for imparting a rotary motion to the feed-rolls H and H'.

50 The distributing board F has a transverse shaking or reciprocating motion, and for this purpose one outer end of the board F is provided with a pin F' (see Fig. 2) engaging the slotted end J' of one arm of a bell crank lever J fulcrumed at J² on the frame of the feeding device, the other arm of the said bell crank lever J being 55

connected with the eccentric rod J³ of an eccentric J⁴ arranged on the shaft H². Thus, when the machine is in motion, the eccentric J⁴, rod J³ and bell crank lever J impart a transverse shaking motion to the distributing board F. 60

Above the distributing board F and in the rear of the feed-rolls H and H' are arranged feed-gates K and K' which operate in conjunction with the shaking distributing board F, to insure the formation of an even and uniform stream of the stock or other material passing to and over the feed-rolls H and H'. Each of the gates K and K' is connected by hinges L with a board N adjustably connected to a support A' for the feed-box A, preferably by the use of screws O engaging one of series of apertures N' formed in the board N (see Figs. 1 and 3). Each of the gates K and K' is also provided with a suitable weight P for holding the gate with sufficient pressure against the stock in the rear of the gate to insure the formation of an even flow, according to the amount of material allowed to pass down onto the distributing board F by the hold-back gate E or E'. 65 70 75

By having the distributing board F reciprocating in a transverse direction, it is evident that the stock flowing down on the distributing board from the hold-back gate E or E' is properly distributed throughout the width of the distributing board, and by having the gate K or K' above the distributing board and a distance in the rear of the corresponding feed-roll H or H', it is evident that only a certain amount of material is allowed to pass over the feed-roll so that a stream of uniform thickness and extending throughout the length of the feed-roll is produced, to insure a proper feeding of the material to the roller mill or other machine in which the material is to be further treated. 80 85

It is understood that the weighted gate K or K' holds the material back until it extends the entire width of the feed-box, and then the gate begins to open gradually until the desired amount of the material passes over the corresponding feed-roll H or H' in a uniform stream. At this time the gate is weighted to maintain it in such position, and if the feed through the spouts D, D', is greater than the feed under the gates K, K', the material backs up and interrupts the flow of the same through the gates E, E', the latter serving to relieve the pressure of the material in the rear of the gate K or K'. Thus, if the gate K or K' is weighted to allow say five bushels of wheat per hour to pass through with a free flow, and it is desired to allow say only two and one-half bushels of wheat per hour to pass the gate K or K', then it is necessary to apply correspondingly more weight to the gate, so that the wheat backs up and only two and one-half bushels per hour can pass the gate, although the gate E or E' may be set to more than two and one-half bushels. 90 95 100 105

It is understood that the hold-back gates E and E' 110

hold back all the surplus or abnormal flow of stock, the gates being set or adjusted relative to the partitions B according to about the amount of the material required.

It will be noticed that the feed spout is arranged at
 5 one side of the box or chamber and the feed roll at the other side, and that the horizontal feed gate coöperates with the adjacent side of the box to make an opening for the passage of the grain, and that said gate delivers to the opposite side of the board from the roll.

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

1. A feeding device comprising a feed box having a central transverse partition, feeding spouts communicating with the box on each side of the partition, feed rollers
 15 journaled transversely of the box at the ends thereof, a transversely reciprocating distributing board forming the bottom of the feed box, said board having its center beneath the partition, and inclining downwardly on each side therefrom, the free edges of the board being in contact
 20 with the peripheries of the feed rolls, a horizontal adjustable feed gate arranged below each of the feed spouts

and spaced apart vertically therefrom, brackets depending within the feed box on each side of the partition and between the horizontal gates and the feed rolls, a feed gate hinged to each of the brackets and normally depending vertically therefrom, the free edges of said gates being spaced apart from the upper face of the distributing board, and a weight connected with the outer face of each of said gates. 25

2. A feeding device comprising a feed box, a feeding spout communicating with the box at one side thereof, a feed roll at the other end of the box, an inclined distributing board having its edge in contact with the periphery of the roll, a hinged feed gate coöperating with the distributing board, and arranged between the feed spout and
 30 the feed roll, an adjustably mounted horizontal feed gate below the feed spout and coöperating with the side of the box adjacent thereto, and means for reciprocating the distributing board longitudinally of the feed roll. 35

In testimony whereof I have signed my name to this
 specification in the presence of two subscribing witnesses. 40

GEORGE HALLIDAY.

Witnesses:

D. J. BOYLE,
 J. A. BAIRD.