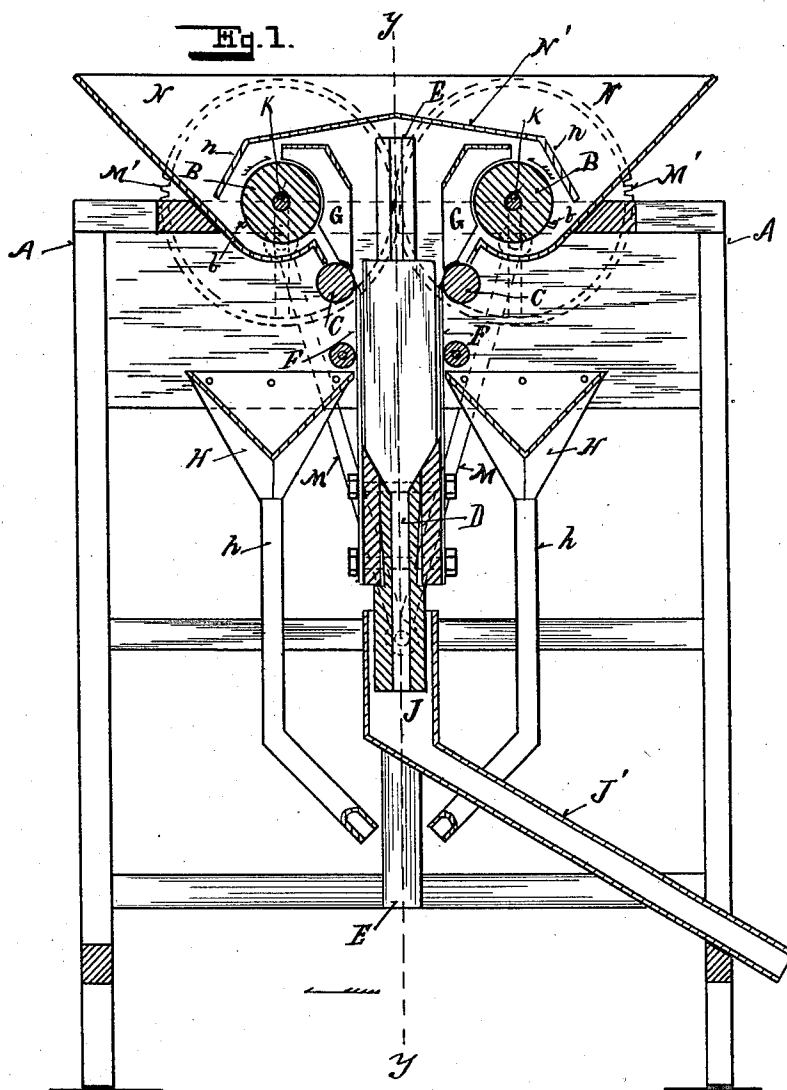


W. T. GRIFFIN.
BEAN SORTING MACHINE.
APPLICATION FILED FEB. 8, 1911.

1,011,188.

Patented Dec. 12, 1911.

2 SHEETS—SHEET 1.



Witnesses.

Flourne Stockert.
W. F. Stuart

Inventor.

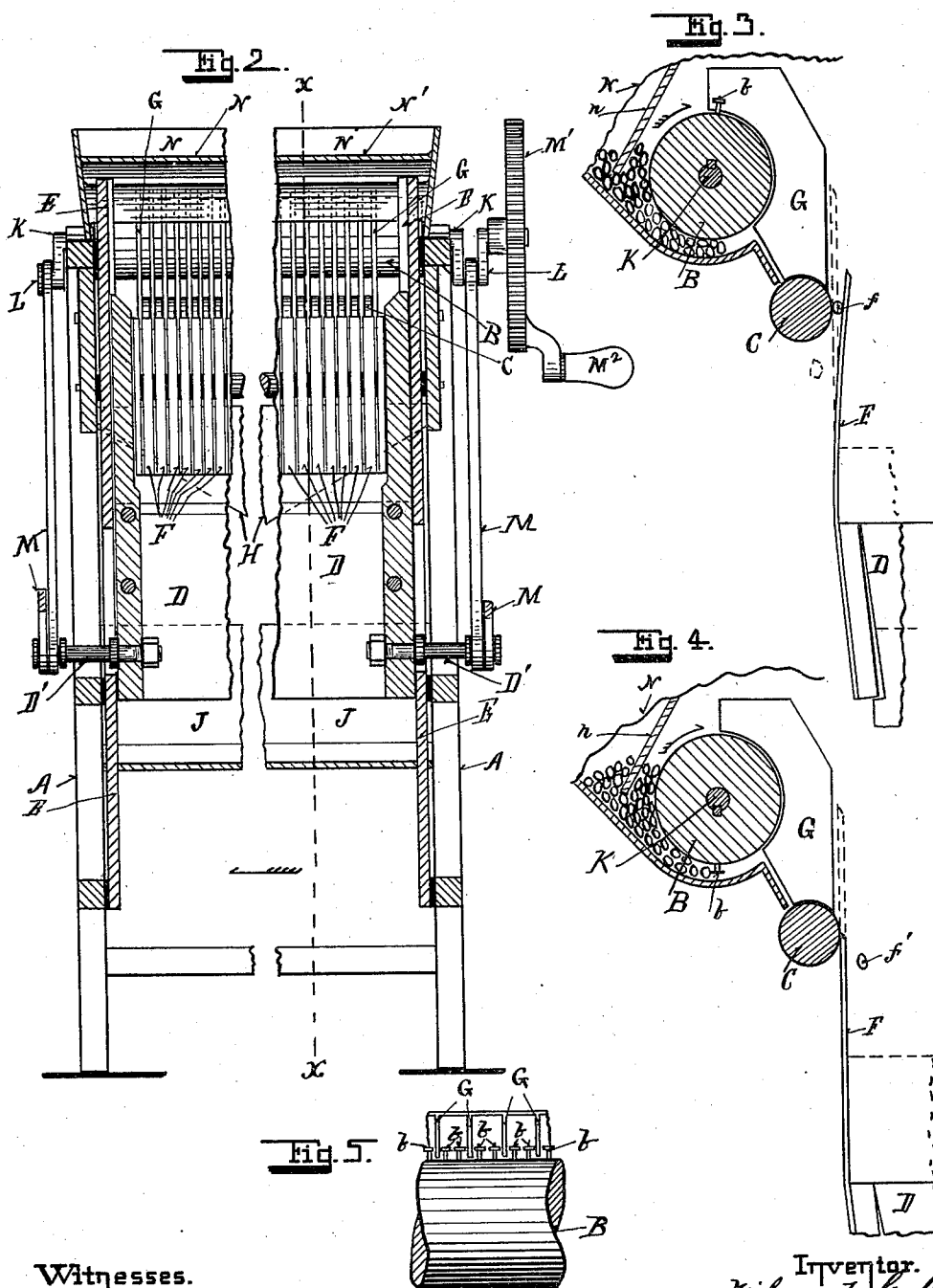
Wilson J. Griffin
By J. C. Mustington
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UNITED STATES PATENT OFFICE.

WILSON T. GRIFFIN, OF NORTH EAST, PENNSYLVANIA.

BEAN-SORTING MACHINE.

1,011,188.

Specification of Letters Patent.

Patented Dec. 12, 1911.

Application filed February 8, 1911. Serial No. 607,303.

To all whom it may concern:

Be it known that I, WILSON T. GRIFFIN, a citizen of the United States, residing at North East, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Bean-Sorting Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention relates to bean sorting machines and has for its object the construction of a machine whereby discolored beans can be picked out of the good beans.

It is a well known fact that the discoloration of beans is caused by moisture, and that the discolored beans have lost their luster and have become roughened on their surface, which condition makes it possible to sort white beans mechanically.

The features of my invention are hereinafter set forth and explained, and illustrated in the accompanying drawings in which:

Figure 1 is a vertical section of my improved bean sorting machine on the line $x-x$ in Fig. 2, looking in the direction of the arrow. Fig. 2, is a vertical section of the same on the line $y-y$ in Fig. 1 looking in the direction of the arrow. Fig. 3 is an enlarged diagrammatic view of a fragment of the machine illustrating the operation of the same upon a discolored and rough surfaced bean. Fig. 4 is a like view of the same illustrating the operation upon a bright, smooth bean. Fig. 5 is a fragment of one of the bean picking rollers of said machine.

In these drawings, A, indicates the frame of the machine. Upon this frame I mount bean picking rollers, B, B, having on the periphery thereof projections, b , arranged in pairs, each pair being adapted to pick up a single bean out of a mass of such beans at each rotation of said roller, B. Below said rollers, B, I mount in said frame, A, rollers, C, C, which are co-extensive with the rollers, B, B. Vertically between said rollers, B, B, and C, C, I mount in said frame, A, a reciprocating member, D, upon suitable vertical slide-ways, E, E, so that said member, D, will slide freely therebetween. On

the sides of the member, D, are upwardly projecting spring fingers, F, adapted to yieldingly contact with the adjacent faces of the rollers, C, C, there being a finger, F, for each pair of projections, b , on the rollers, B. The space on the rollers, B, B, between each pair of projections, b , thereon is divided by means of partitions, G, so that beans picked up and carried over the top of said rollers, B, will be deposited upon the rollers, C, C, one bean to each of said fingers, F. On each side of the vertically reciprocating member, D, I place troughs, H, and spouts, h , adapted to catch rough and discolored beans, and embracing the lower end of the reciprocating member, D, I place a trough, J, from which a spout, J' , leads away.

Upon the ends of the shafts, K, K, upon which the rollers, B, B, are secured I place cranks, L, L, from which cranks pitmen, M, M, extend to the stud-pins, D' , D' , secured in the ends of the reciprocating member, D, and on one end of said shafts, K, K, and outside of said cranks, L, I place intermeshing spur-gear wheels, M' , M' , adapted to cause said rollers, B, B, to rotate in unison, and on one of said wheels, M' , I place a hand crank handle M^2 , for operating said machine. Upon the frame, A, and embracing the rollers, B, B, and partition walls, G, G, I place a hopper, N, and inside of said hopper, N, I place a covering, N' , over said rollers, B, B, and the intermediate parts of the machine, the ends, n , of said covering, N' , being turned downward as shown in Fig. 1, so as to leave a contracted opening between the extremities thereof and the inclined sides of said hopper, through which beans to be sorted may pass.

In operation beans to be sorted are placed in the hopper, N, and the rollers, B, B, are revolved in the direction of the arrows in Fig. 1 and Figs. 3 and 4, and individual beans will be picked up by the projections, b , on said rollers, and will be carried over the tops of said rollers, and allowed to drop down, one bean between each of the partitions, G, upon the roller, C, C. The cranks, L, on the shafts, K, being so arranged that the reciprocating member, D, will be at its uppermost point of travel when said beans drop upon the roller, C, upon the continued revolution of the rollers, B, B, said reciprocating member starts downward, thereby drawing the fingers, F, downward in contact with the rollers, C, C,

thereby causing them to revolve and carrying the beans deposited thereon over into the oblique corner on the upper side of said rollers between the same and the fingers, F.

5 Now, the white beans, by reason of their smooth, slippery surface will continue to slip along the surface of the fingers, F, and the revolving surface of the roller, C, while the rough, discolored beans will be drawn

10 in between said downward moving fingers, and revolving rollers until they are dropped outside of said fingers, F, into the troughs, H. Meanwhile the smooth, slippery white beans continue to slip until they fall inward

15 over the upper ends of said fingers, F, when the same have moved downward to their lowermost point of travel, as illustrated in Fig. 4, of the drawings. This operation is repeated until all the beans desired to

20 be sorted have been operated upon by the machine.

Having thus fully described the construction and operation of my invention, what I claim as new and desire to secure by Letters

25 Patent is:

1. The combination in an apparatus of the character described of a roller, means thereon adapted to pick up a bean, a receiving roller, and a yielding member operating

30 in contact with said receiving roller to frictionally rotate said receiving roller, and means to operate said yielding member, substantially as set forth.

2. The combination in an apparatus of the character described of a roller, means thereon adapted to pick up a bean, a receiving roller, a vertically reciprocating spring finger contacting with and rotating said receiving roller, and mechanism adapted to

40 cause said spring finger to reciprocate, substantially as set forth.

3. The combination in an apparatus of the character described, of a bean picking roller, means thereon adapted to pick up

45 single beans, guide walls on each side of said bean picking means, a roller to receive a bean from between said guide walls, and a vertically reciprocating spring finger adapted to close the space between the front

50 edges of said guide walls when at its uppermost point of travel and open the same when at its lowermost point of travel and to contact with said bean receiving roller to cause the same to rotate, and mechanism

55 adapted to cause said finger to reciprocate, substantially as set forth.

4. The combination in an apparatus of the character described of a roller, journal bearings on the ends thereof, cranks on the

60 ends of said journal bearings, projections on said roller adapted to carry a pellet to be

conveyed upon their upper surface, a vertically reciprocating spring finger slidably mounted in said apparatus, a roller operating in contact with said spring finger and

65 adapted to be rotated thereby, a pitman extending from said cranks and connected with said reciprocating spring finger and adapted to give the same vertical movement, and means to guide pellets from the upper

70 surface of said projection bearing roller to the point of contact between said spring finger and its cooperating roller, substantially as set forth.

5. The combination in an apparatus of the character described of a frame, a roller mounted thereon by means of journal bearings on the ends thereof, cranks on the ends of said journal bearings, a vertically reciprocating member mounted in said

80 frame, pitmen extending from said cranks to and connected with said reciprocating member, a spring finger secured on and carried by said reciprocating member, a roller mounted in said frame and contacting

85 with and rotated by said spring finger, guide walls mounted in said frame above said rollers and extending from one to the other coincident with the edges of said spring finger, and bean carrying means on

90 said first mentioned roller adapted to carry a single bean over the top of said roller and drop it upon said second mentioned roller between said guide and said spring finger, substantially as set forth.

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6. The combination of a frame, a roller mounted thereon by means of journal bearings on the ends thereof, cranks on the ends of said journal bearings, projections on said roller, a hopper on said frame adapted to

100 conduct beans to said roller, a reciprocating member mounted in said frame, stud pins secured in said member, pitmen extending from said cranks to said stud pins, a spring finger secured on said reciprocating member, a roller mounted in said frame under

105 said first mentioned roller so as to contact with said spring finger and be rotated thereby, guides to conduct beans from the top of said first mentioned roller down between

110 said second mentioned roller and said spring finger, means to conduct beans away from the outside of said spring finger, and means to conduct beans away from the lower end of said reciprocating member, substantially

115 as set forth.

In testimony whereof I affix my signature, in presence of two witnesses.

WILSON T. GRIFFIN.

Witnesses:

FLORENCE STOCKERT,
H. M. STURGEON.