

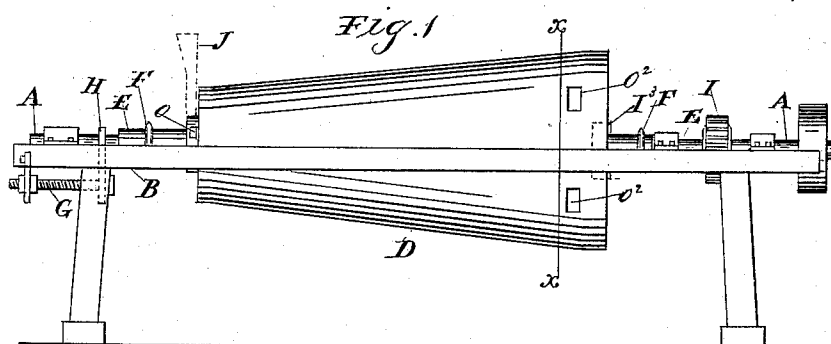
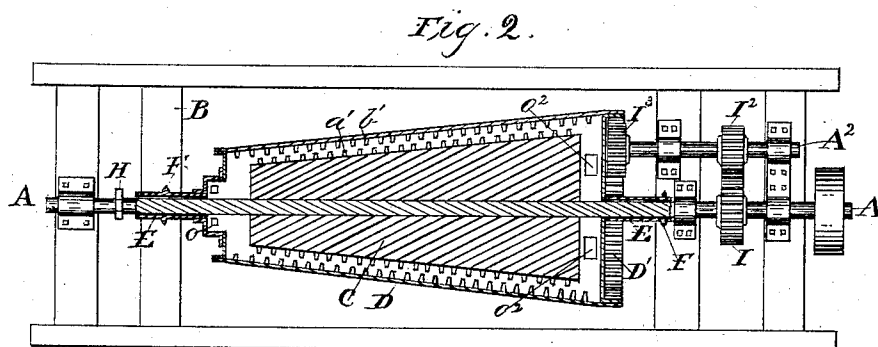
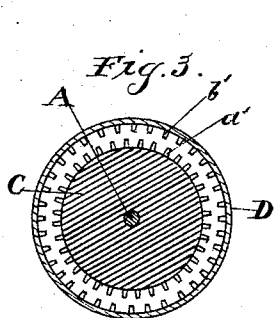
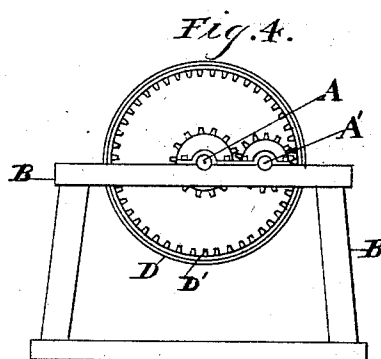
(No Model.)

G. MALCOLM.

GRAIN GRANULATING MACHINE.

No. 320,486.

Patented June 23, 1885.



Witnesses

John Elliott
G. Elliott

Inventor

George Malcolm
by his Attorney
William Gill

UNITED STATES PATENT OFFICE.

GEORGE MALCOLM, OF TAVISTOCK, ONTARIO, CANADA.

GRAIN-GRANULATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 320,486, dated June 23, 1885.

Application filed September 30, 1884. (No model.) Patented in Canada September 2, 1884, No. 20,103.

To all whom it may concern:

Be it known that I, GEORGE MALCOLM, a citizen of Great Britain, and a resident of the village of Tavistock, in the county of Perth, in the Province of Ontario, Canada, have invented a new and useful Grain-Granulating Machine, of which the following is a specification.

This invention relates to a machine for splitting or breaking wheat or other grain into any required grade.

The invention consists in the improvement of the construction and combination of parts of the same, as will be hereinafter more fully described and claimed, reference being had to the accompanying drawings.

Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is a plan view of the same, partly in section. Fig. 3 is a cross-sectional view on or about the line $x x$ of Fig. 1. Fig. 4 is an end view showing the operating-gears of the machine.

A represents a shaft supported by and revolving in bearings on the frame B.

D represents a conical case, and C a conical cylinder, constructed of any suitable size or shape, and of any suitable material. To this shaft A the conical cylinder C is rigidly secured, and is preferably constructed with teeth a' , placed a short distance apart over the entire circumferential surface of the cylinder. Surrounding this conical cylinder C, and at an equal distance from it all round, is the conical case D, closed at both ends, and through which ends the shaft A passes, and projecting from and rigidly secured to the ends of this conical case D are sleeves or collars E E, which fit loosely around the shaft A. The inner surface of this conical case D, opposite the teeth a' on the surface of the cylinder C, is provided with teeth b' . This conical case D is prevented from moving longitudinally on the frame B by collars F F on the sleeves E E fitting in grooves in the frame B.

The shaft A is adjusted longitudinally by the ordinary nut and screw G, with a forked plate, H, grasping the shaft A, and the said shaft A is held at any position to which it may be adjusted by said nut and screw G.

Motion is communicated to this machine by a belt over a pulley, or other suitable mechanism,

placed at any suitable position on the shaft A. I is a gear-wheel secured on the shaft A, which meshes with a gear-wheel, I^2 , on the shaft A^2 , and as the shaft A revolves, said shaft A^2 , as well as gear-wheels I^2 and I^3 , secured thereon, will also revolve. This gear-wheel I^3 engages with the internal gear D' on the inner face of the projecting end of the conical case D, and causes said conical case D to revolve simultaneously with the conical cylinder C, but in the opposite direction.

When the conical case D is not required to revolve in the opposite direction to the conical cylinder C, the gear-wheels I^2 I^3 and shaft A^2 are removed.

The grain passes through the conducting-tube J, and enters the conical case D through the openings o at the small end, and passes through the case D and out at the openings o^2 at the large end to the brush scourer.

When this machine is used as a granulator for splitting wheat, the wheat enters the conical case D through openings $o o$, and the action of the teeth a' of the cylinder C, and the teeth b' of the case D, as they pass one another when revolving with the cylinder C and case D, respectively, in opposite directions, is not only to split the wheat and to liberate the germ thereof, but it is to work the split wheat toward the large end of the case D, where it passes out through the openings o^2 to the brush scourer, where the liberated germ is removed, and by this removal of the germ all the bluish color in wheat is removed, whereby flour of a superior quality can be made on millstones.

When scouring bran to take out all the flour adhering thereto, or when granulating wheat, oatmeal, splitting pease, or granulating any other grain, the conical case D and cylinder C are revolved in opposite directions.

As the conical cylinder C is adjusted longitudinally to or from the small end of the conical case D, the space between this case D and cylinder C is enlarged or reduced, and accordingly as this space is enlarged or reduced, the teeth a' and b' act on the grain more or less to break and split the grain into coarse or fine particles, whereby different grades of oatmeal or any other grain is produced. This conical case D and cylinder C may be constructed partly of stone, emery, or other suitable material.

terial, and used for the manufacture of pot-
barley; and by manufacturing pot-barley with
this machine it would increase the product
beyond that of the ordinary mills for this
5 manufacture. The conical cylinder C and
conical case D would, in this manufacture, be
revolved in different directions, which would
act in a more effective manner on the rough
grain.

10 Having thus described my invention, I
claim—

The frame B and the conical case D, pro-
vided with the teeth b' and openings a'' , in

combination with the adjustable conical cylin-
der C, provided with teeth a' , shaft A, and 15
suitable mechanism for revolving said case
and cylinder in different directions, substan-
tially as described, and for the purposes set
forth.

In testimony whereof I affix my signature 20
in the presence of the two undersigned wit-
nesses.

GEORGE MALCOLM.

Witnesses:

JOHN IDINGTON,
JOHN CLARK.