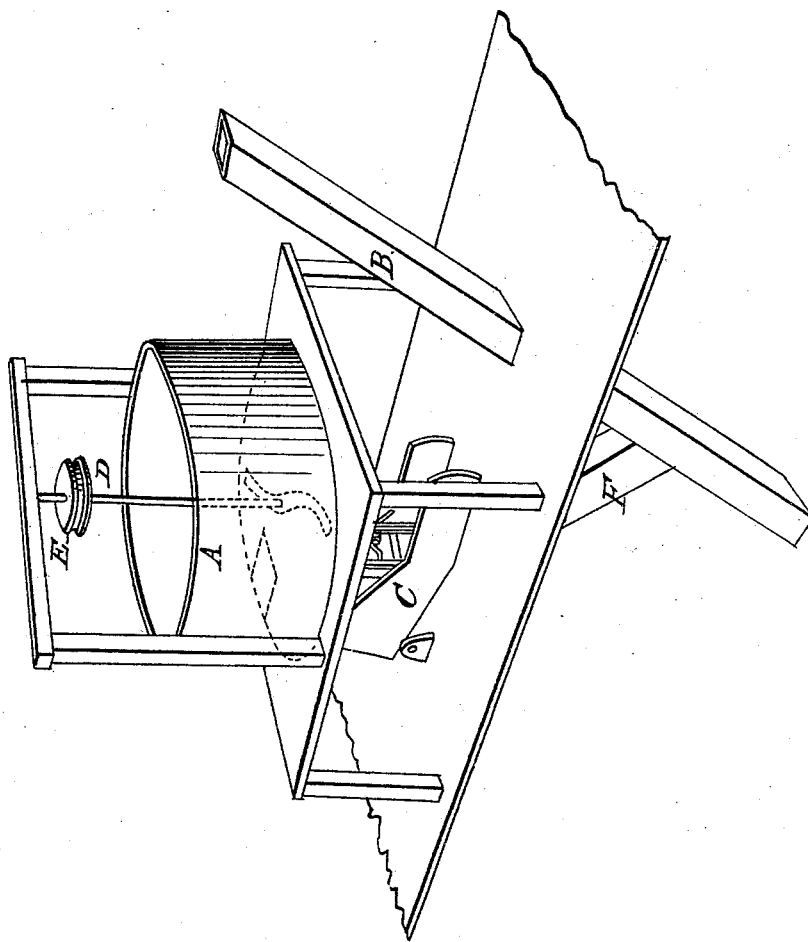


A. D. WORMAN.

Grain Mill.

No. 2,189.

Patented July 23, 1841.



# UNITED STATES PATENT OFFICE

ANDREW D. WORMAN, OF FREDERICKTOWN, MARYLAND.

## MANNER OF MIXING MIDDINGS WITH CHOPS IN THE PROCESS OF MANUFACTURING FLOUR.

Specification of Letters Patent No. 2,189, dated July 23, 1841.

*To all whom it may concern:*

Be it known that I, ANDREW D. WORMAN, of Fredericktown, in the county of Frederick and State of Maryland, have invented  
5 an improvement in the art of manufacturing flour, by means of which improvement the whole or nearly the whole of the middlings may be converted into superfine flour; and I do hereby declare that the following  
10 is a full and exact description thereof.

It has been heretofore the general practice to take the middlings which have accumulated in the mill and to shovel it among the fresh ground flour on to the hopperboy floor for the purpose of mixing the  
15 two together; but when so treated it does not become mixed with that intimacy which is necessary to the production of superfine flour. In my improved process, I put the  
20 middlings which are to be mixed with the fresh ground chop from the burs into a hopper prepared for that purpose, which hopper I so place as that the middlings contained in it shall be conducted from it into  
25 the spout, or trough, in which the elevators are carrying up the fresh ground wheat to the hopperboy; to the hopper containing the middlings I append a shoe, and a sliding shutter, in the ordinary way of appending  
30 them to the hoppers, for the purpose of regulating the feed from them. The middlings will thus be perfectly and equally distributed and mixed among the fresh ground chop, and will be in this state carried  
35 through the respective processes to which the flour is subjected, until it is ready to be packed.

In the accompanying drawing, A, is the hopper into which the middlings are to be  
40 put.

B, is the elevator spout, up which the fresh ground chop is conveyed.

C, is a shoe, constructed and operated in the ordinary way, and provided with a shut-

ter, as usual, for regulating the feed. The  
45 middlings are thus fed among the fresh ground flour with perfect regularity, and become mixed in the most intimate manner, and the whole, or nearly the whole, will be by this and the subsequent process converted  
50 into superfine flour.

To cause the middlings to fall into the opening leading to the shoe, I employ a revolving stirrer, affixed on the lower end of the shaft D, which may be kept in motion  
55 by a band passing around the whirl E. From the shoe C, a spout F, leads into the elevator spout B, and conveys the middlings to it.

I have thus described the arrangement of  
60 the respective parts of the apparatus by means of which I attain the end proposed; and to either of the parts of this apparatus taken alone I do not make claim as of my invention; but I have so disposed and com-  
65 bined it as to produce a new and useful effect in the manufacturing of flour.

What I claim, therefore, as constituting my invention, and desire to secure by Letters Patent, is—  
70

An improvement in the process of manufacturing flour, by conducting the middlings into the trough of the elevators, by means of a spout leading into it, and governing the feed by a hopper and shoe constructed in the ordinary way, so that said  
75 middlings shall become equally and intimately mixed with the flour, and will, in the subsequent steps of the process, be entirely, or nearly so, brought into the state of super-  
80 fine flour.

In testimony whereof I hereunto set my name this twenty first day of May 1841.

ANDREW D. WORMAN.

Witnesses:

THOS. P. JONES,  
B. K. MORSELL.