(12) **United States Patent**
Lukens

(10) **Patent No.: X8108**
(45) **Date of Patent: Mar. 26, 1834**

(54) **HULLING CLOVER SEED**

(76) Inventor: **William E. Lukens**

William E. Jenkins
Letters Patent

The Schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said William E. Jenkins himself of his improvement in the machine for hulling clover seed.

Be it known that I William E Jenkins of the County of Harrison and State of Ohio have invented a new and useful improvement in a machine for hulling clover seed and that the following is a full and exact description of the construction and operation of the said machine as improved by me. The clover seed huller consists of six parts viz 1st frame. 2nd cylinder. 3rd concave. 4th cap. 5th hopper and 6th wind mill. 1st the frame is constructed of 4 posts about 3 feet 3 inches high. 2 caps about 4 feet long. 2 girts about 3 feet long exclusive of tenons. two planks about 2 inches in thickness and 3 feet 2 inches in length and about 1 foot in width which are placed between the caps and the girts to which the concave is fastened and which is raised and lowered at pleasure by means of screw bolts; and 4 legs 2 feet 3 inches long exclusive of tenons. making a frame the extreme dimensions of which are 3 feet 7 inches long 3 feet 3 inches wide and 3 feet high allowing the timbers to be 3 inches by 3 inches. 2nd The following size and construction of a cylinder is presumed to be the best adapted to the application of a four horse power and consequently must be varied according to the power applied. Nine wooden heads or five cast rings and one wooden head and one inch square bar of iron of suitable size say 1¼ inch square on which are framed, of wood, and bolted and screwed of iron, as many staves about an inch and a half thick and 2 feet 8 inches long, as will make a cylinder about 9¼ in diameter. On each end of the cylinder is turned a journal. which runs in metal bearings imbedded in the middle of the caps of the frame and held down also by metal caps. The cylinder

inder is covered with sheets of cast iron about three eighths of an inch in thickness and of such a width that 5 or 6 pieces will exactly cover the cylinder. The iron is cast in flutes or grooves about one eighth of an inch deep nearly square on the fore side and sloping on the other the slope extending to the verge of the next flute which makes a sharp edge. These flutes run in a winding direction round the cylinder so as to complete a revolution round it in the distance of 2 feet 6 inches the remaining two inches they run in a contrary direction. The object of this is to prevent the seed from running in the end of the cylinder. The flutes are about half an inch wide, the cast iron is all fastened by wood screws. On that end of the cylinder shaft to which the power is applied, there is a pulley about 5 inches in diameter which turns by a cross band working on a pulley of half that diameter on the rear roller in the hopper. On same end of the shaft is also hung a balance wheel the size and construction of which will be at the option of the builder it is presumed however that one 3 feet in diameter weighing 150 lbs will be sufficient. On the other end of the shaft is another pulley of eight inches which turns the round mill

3. The concave is made of three staves 2 feet 8 inches long and about 2 inches thick and of such a width that when put together they will make half a circle. Each end of the middle stave is that one immediately under the cylinder is grooved to admit knives into the movable concave frame spoken of in the description of the frame. There are four pieces of wood about 2 inches square and as long as the staves are wide, screwed on the outside and at the ends of the other concave staves. In each of these pieces are placed two screw bolts one running through the concave board and the other through the case. The mortises through which the bolts pass are made sufficiently large to admit of the concave being moved to or from the cylinder at pleasure. The whole forms a concave which reaches to the centre of the cylinder on each side. To the concave are fitted sheets of cast iron the same in thickness of those on the cylinder and as near of the same width of the staves to which

which they are secured by screws. The flutes are the same size and construction of those in the cylinder but run in a contrary direction. that is when the cylinder and concave are in their proper places their flutes cross each other transversely. The flutes run in this direction four fifths of the length of the concave beginning at that end in which the seed is admitted from that to within about an inch of back end. They run lengthwise of the staves from thence to the end. they cross those of the cylinder again which completely prevents the seed from running in the end of the cylinder and conducts it all to the opening in the cap through which the seed escapes. The space between the cylinder and concave is from 1/8 to 3/8 of an inch at that end to which the power is applied and in which the seed is admitted and from half to an eighth of an inch at the opposite end. 4th The cap is made of as many staves as may be thought convenient about 20 inches long and about an inch and a half in thickness. These are formed into a concave completely smooth on the inside and of such a size as to cover the cylinder, leaving a space between them of about one fourth of an inch. the sides resting on those of the concave below. this leaves the cylinder bare about a foot from that end to which the power is applied in the admission of the seed and over which the hopper is placed. over that end of the cap next to the hopper, is placed a rib of wood in which the staves of the cap are firmly secured by screws. the ends of these ribs project a little below the edges of the cap. and are bolted to short ribs which are screwed to the outside of the concave staves which enables the concave to be shifted without moving the cap. the other end of the cap is tenoned about half an inch into a plank of suitable thickness and nailed from the outside into the end of the cap staves. the plank is held to its place by two long bolts reaching through the plank into the cap of the frame. On that side of the cap towards which the top of the cylinder moves on and within

1 1/2

half an inch off the end of the cylinder there is a mortise open-
ing, 3 inches lengthwise of the case, and about 3¼ inches
crosswise. Through this opening, the seed escapes when sub-
jected. 5th The hopper is a square box of inch plank half
an inch wider than the diameter of the cylinder and extending
in length from the end of the case to the end of the cylinder and about 9¼
in height. on the top of this there is placed another box about twenty inches
high. in the shape and form of common hoppers. these two are united by
screws and placed over the vacant end of the cylinder, its side resting on
the concave stand. The feed roller, which is about 3 and ¼ inches in diame-
ter and fluted on its surface and placed in the hopper extending
over the inner side leaving a space between it and the cylinder of
about half an inch on the outside of the hopper on the shaft of the roller
is a small pulley similar to above described. 6th The stands are
known by the pieces on the back end of the cylinder shaft. and will
require about double the number of revolutions of the cylinder. The comb
mill has a separate frame, and is set under the concave and receives
the seed immediately into the middle as it falls from the cylinder.
The woodwork is constructed and the middle and screws are shown
in the ordinary method. Operation. The seed after being thresh-
ed off the straw and well raised is thrown into the hopper. The cyl-
inder is put into motion at the rate of 250 revolutions per minute. the
same time forces the flutes carries the seed under the case and after
jumping several times between the cylinder reaches the opening in the case thro'
which it escapes and falls into the middle of the woodwork, the
unthreshed portion is thrown off the end round through the mid-
dle and screen and conveyed into a box below prepared for its recep-
tion. What I claim as my invention and improvement is the
peculiar combination and arrangement of the several parts of the before
described machine for cleaning clover seed. but I particularly claim
the mode of removing the seed from according in the end of the cylinder
and of conducting it to the place of escape as before described.

Witness B. W. Morrell Wm E. Jackson

A. A. Elliott