William Mathews of Charleston, South Carolina

Letters Patent

The Schedule referred to in these Letters Patent and making part of the same containing a description of the works of the said William Mathews, himself of the improvement in the machines for Winnowing Rice or any other small grain

To all whom these presents shall come, Be it known that William Mathews of Charleston in the District of Charleston and State of South Carolina have invented a new and useful improvement in the machines for Winnowing Rice or any other small grain, and that the following is a full and particular description of the construction and operation of the said machine as invented or improved by me. The method of constructing will be best understood by reference to the annexed drawings, in which the letter A represents the frame which is of an oblong shape and extends A'. The top piece of this frame on which is supported a beating cylinder B, which may be made of the usual stationary Bolting having five or six or more revolution per minute, per B, of an oblong shape say at half an inch by three quarters. The beating may be of that kind called Deering beaters, which have already been used and are moveable upon a bar passing from head to head of said cylinder and forming partial revolutions therein, say or both being used on the other edge. The letter C represents these beaters. D. is the bed of these beaters and forms the concave in which they revolve. The surface of the bed is cut into angular projections E, struck by the application of a strip of sheet iron along the angle. These angles are opposed to the direction of the revolution of the beaters. F. is a small pulley of about one inch and a half in diameter in the end of the axis of the beating cylinder. G. and H. is a small pulley wheel of eight teeth or x-rays at G. and this is the driving end, and instead of a pulley which is apt to slip and does not give a sufficiently steady and continuous motion. I use a small prop shaft II let on to the end partly by a square hole into a cap, which shaft has placed the fixture from the driving power. The cog wheel G works into a large one I. of twenty-nine teeth which is fastened on to the end of the feeding Roller T, which revolves between the upright bars K which are connected at the bottom and run forward in front of the feeding
ruller as is shown in fig. 1, where there is a cut groove L, in the said projecting for
the purpose of adjusting the other side of upright connected log M in which the
ruller of the feeding table N, seized. The feeding ruller, turning, a groove being also
out the wire so that by lowering the screw of the ruller N may be del moved to
the feeding ruller at pleasure. Thereafter, A, if perfect, the feeding ruller
is down to the proper length, is by means of the lever and weight. No, the
end of the lower feeding ruller S, is secured a small pin within E, of eight teeth
walking into another Q, on the top one of the like number of teeth which provide
as the reverse motion in the top feeding ruller R. The lower feeding ruller also
being a small connecting gear wheel B, which drives another D, each having
eight teeth and that marked T, is secured to the end of the feeding table well
in N, thereby giving it the reverse motion, as the screw J, and consequently brings
forward the feeding plate U, which is kept stretched by means of the lightening
screws T, which can be let forward by means of the thumb-screw and
groove in the piece X, at the other end of the frame, and behind the beating
cylinder B, is placed another cylinder covering comb Y consisting of arms
through the axis supporting being along this axes armed with sharp teeth which
form teeth E, which teeth move away when they begin to descend into the
concave let. They assume a horizontal position. The axis of this cylinder or comb
carries a pulley of about five inches in diameter, on the same side of the frame
as the pulley in the beating cylinder, and is driven by said beating pulley and
a belt. The bed of the cylinder is composed of bars, S, set at such a distance
apart as to let the grain fall through into a kind of hopper beneath, where it
sometimes applies some influence to clear the reverse grain from what a draft
may remain; but generally the comb carries all off leaving the grain sufficient
ly clean. Concerns are adapted to both cylinders
Function: The straw containing the grain is spread upon the feeding table
and by the motion communicated from the beating cylinder B to the roller which
rills at the feeders. The cloth is set revolving over its two rollers and carry the
grain and straw forward between the feeding rollers E. R, where it is caught
by the teeth of the beaters, and driven over the concave bed D, which breaks
out the grain and throws all over to the bed of bays under the comb T, from
the grain falls through, and the straw is driven to the back over the frame-bay


separate from the grain. What I claim as my invention in the above described
bed machine and, unless otherwise pointed out, is first the plan of setting the forward feeding
table closer nearer to or farther from the feeding rolls as the length or strength
of straw may require according to the arrangements I have set forth of the comin
ter, upright bar and groove sliding upon the thumb springs. Second the applica
tion of the dog wheel gearing according to the plans and proportions set forth in
supporting the feeding rolls. Third, the application of a beating cylinder with
stationary bars and spheres in rather oblong teeth, (as with the large beat.
As though I do not claim the invention thereof, i.e., a concave bed as described
above, though I do not claim said form of bed as my invention. Fourth, the
application of the comb as above set forth, and over the bed above de.
scribed, though I do not claim the invention of said comb and bed. The
machine above described has been fully tested as to its efficiency and prac
ticability, and has been decided approved of as by far the best combination
for the planter or growers of rice or any other small grain that has been tried
for their use. As the taking into consideration these and cheap
ness of construction, the facility with which any repairs can be made as above
all the great perfection with which the work is executed. In testimony of
the above I hereby, a full, clear and exact description of the construction and
use as modes of operation of my machine as invented as inspired by me. I have
hereunto set my hand this thirty, the day of July, eighteen hundred and thirty-five.

William Mathewson.

Henry Stone.

Rev. Clarke.