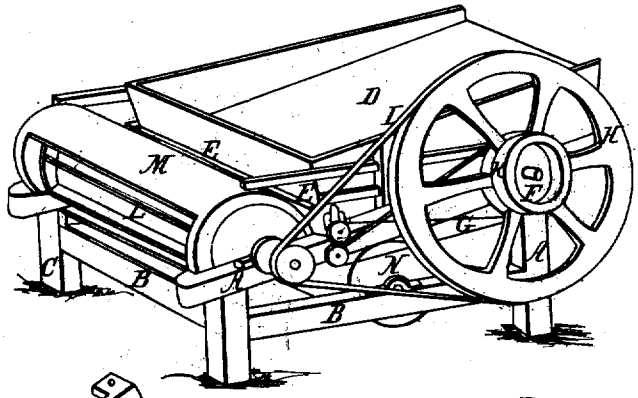
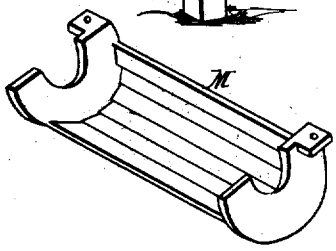
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S. Slater.

Thrashing Mach.

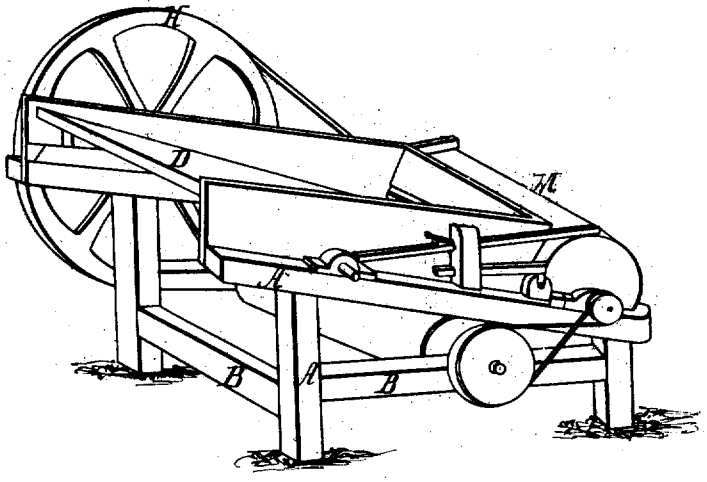
Patented Oct. 1, 1830.











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Samuel Slater, Northern Liberties, Philad.a Pa

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 Samuel Slater himself, of his improvement in the Machine called Slater's Threshing and Winnowing Machine.

To all persons to whom these presents shall come.

I Samuel Slater of the Northern Liberties in the County of Philadelphia, State of Pennsylvania, Citizen, send greeting. Be it known that I Samuel Slater have invented, discovered, and applied to use, certain new and highly useful improvements in a Machine called & known as Slaters Threshing and Winnowing Machine, for the purpose of Threshing and cleaning all kinds of small grain, and particularly that of rice; a fan is connected with the machinery, that completely separates the straw and chaff from the grain at the same operation it has also the desirable effect of expelling the dust from the person who attends the Machine; without that improvement the dust would be a great inconvenience to the operator, which has from practical experiment been pronounced superior, to any Machine, heretofore known or invented. A.A. The frame, made of scantling of either hard or soft wood, or of metal, if of wood scantling, five inches square in proportion, about eight feet in length, and from two to three in width; the frame standing on the front two feet six inches in height, in the rear about four feet which gives it the position of an inclining plane; the above is calculated for a beater twenty seven inches in length which will be hereafter named. B.B. The girths and sill bolts near the bottom, running from the back to the front posts on each side, and pass through post to the other; in front is a girth within ten inches of the top, extending over the corresponding front posts, which are secured by joint bolts, on which rests the mouth of the

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the fore. C. the front posts, are about eighteen inches shorter than the rear posts which are about four feet in height. D. the inclined plane or flooring for the grain in the draw by which it is conducted to the feeding rolls, is made of pine or other boards worked smooth, of sufficient length to contain the longest sheaf of grain in the box, which is represented in the cut E, F. The feeding rolls, are constructed of wood or iron, if made of wood and iron it is necessary to have a under cylinder about three inches in diameter, fluted cut in eight or ten places or more, half an inch in depth to receive pieces of common hoop iron cut in edgeways, leaving it projecting out one fourth of an inch which will conduct the sheaves to the beater. The feeding rolls have a shaft or gudgeons passing through the ends and extending across the frame of sufficient length to admit the bearings and pulleys; the said pulleys are about four inches in diameter and grooved on the edge to accomodate a round band that connects with the drawing pulley on the main wheel shaft. F. The main balance wheel shaft, one and three quarter inch in diameter, extending across the frame of the machine twelve inches clear on the left hand side, which is turned with bearings, secured by brass and caps bolted to the frame. The caps to the said boxes have a oyl or cavity which will contain about half a gill of oil, and a wick at the bottom which gradually falls upon the gudgeons, the moisture of which is a complete preventative from heat or friction. G. The pulley on the projecting shaft, nine inches in diameter, turned with grooves and connected with bands to drive the feeding rolls, which can be increased in size to give any required speed. H. The balance wheel about six feet in diameter connected with the aforesaid drawing pulley on the before mentioned projecting shaft; the main part weight of the wheel is about two hundred pounds. The design of this is to keep the momentum of the beater up, which will prevent the same from checking the velocity of the beater, which is

all important in thrashing the grain and cleaning it, in a manner not heretofore known or done by any Machinery.

1. The bell which around the main wheel that drives the whirl or pulley attached to the beater. See it. It may also be constructed with a bevel to conform with the figure or hieroglyphic, thus ⌐, which will prevent the band from flying off the wheel, or running at random; the band must pass two or three times round the wheel extending to the whirl, in a like manner on the shaft of the beater then to be placed two or three times round it to prevent it from slipping. K. A pulley attached to the main balance wheel eighteen inches in diameter and may be used with either belt or band leading to the horse power; which may be constructed in the same manner as the aforementioned balance wheel. L. The beater or cylinder, is twenty seven inches in length, constructed with a shaft about one and three quarters of an inch in diameter made of iron turned with bearings and projecting over both sides for the reception of the receiving pullys, which are secured to the frame by boxes and caps as explained under the letter F. The beater is about ten or twelve inches from the front of the frame the beater or cylinder is made of wood eight inches in diameter six inches including the beaters which are iron set in grooves of half an inch, which have tenons on each end, on which is a head of wrought or cast iron with Mortises to receive them, - this is the head of the cylinder, See cut; the said beater which is in front of the feeding rolls also in the front part of the machine beats the grain upwards against the concave, while the fan or cleaning Machine acts beneath. M. The concave, is a cylinder of cast iron, which covers about one third of the beater, with grooves on the inside which acts as a rubber against the beater; the concave rests on the frame, has heads at each end, is formed in contact within the eighth part of an inch of the beater secured by wooden springs resting on the top. See cut; - there is also a projecting cap or piece of iron, one and one half inch on each end of the concave which

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which is or may be secured by a bolt passing through a spiral spring and secured on the under side with a nut, which is a useful or improvement for the wooden springs before mentioned. These springs are very material; they give the machinery easy and even operation, rising and pressing suitable to the quantity of grain in the feeder. N. The fan before mentioned is connected with the machine secured to the frame under the floor or above; - The fan is constructed with a shaft made of iron passing through the cylinder or covering of the fans and projecting over on the right hand side to receive a pully of a size calculated to reduce the velocity to that of one fourth of the beater; - The cylinder is a case or frame the air passes in at the end, and is conducted by the motion of the fans or wings in the beater to the under side, where the grain passes out See cut. - Recapitulation. The frame for beater twenty seven inches in length, eight in diameter, making making ten inches including the iron beaters; The frame is also twenty seven inches in width in the clear, five or eight feet in length, the rear or back posts about four feet high, the front posts about thirty inches, the front and back posts about three feet apart the floor inclining to give the grain a free and easy pitch to the feeding rolls to present it to the beaters; The beater may be propelled to the velocity of from eighteen hundred to two thousand revolutions in a minute, it is a quick lively blow that threshes the grain clean; there are six beaters which strike the grain from nine to twelve thousand times a minute. A frame constructed on the inside, with a conductor on the under side of the beater to separate and clean the grain from the straw as it drops from the beater; a cover that covers the beater about a third of a circle, kept in its place by bolts and springs. It also has a horse power of the usual construction. The difference between the plane and operation of this Threshing and winnowing or cleaning machine, consists in this, that is to say: in the first place. The machine is constructed with a wind flooring instead of a cloth apron, which it

is secured, the board flooring answers the purpose much better than the revolving apron, and is at the same time less expensive and not liable to wear out, splitting, or being injured. 2nd, The beater receiving or throwing the dust from the person attending the machine, which is not the case in any former invention. — 3rd, The simplicity of the measure. 4th, The flow, the wind coming in contact with the beater, which prevents the cotton from tangling round the beater and separating the grain from the straw. — 5th, The whole machine is more simple and less precise in its operations, much better calculated for the purpose than any now in use, durable and easily constructed, the price considerably less than others, which afford no competition with the above described. 6th, The machine is also admirably calculated for thrashing rice. The claims are the genuine merits of the machine. In testimony that the foregoing is a true specification of my said machine, as above described, I have hereunto set my hand and seal, at Philadelphia in the State of Pennsylvania, this third day of July in the year of our Lord, one one thousand eight hundred and thirty; 1830.

Witnesses
Jn.o Weaver
Isaac Coons
Philip Pettit

Samuel Slater

Ex.
CKJH.

1771 n.B.