(12) **United States Patent**
Felton

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(54) **THRASHING MACHINE**

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Samson Fellen

Letters Patent

To all whom it may concern Be it known that I Samson Fellen of Lisbon Columbiana County and State of Ohio have invented a new and useful improvement in the machine called the Union Straw Board.

The machine is for straightening separating by cutting the knots from all kinds of grain from the straw stalk or cut stock as it has been thrashed by said thrashing machine and also the seed of all kinds of grass in the following manner:— There are four sills for the machine to stand on the outside sill are the shortest, there are eight posts framed into the middle of the sills opposite of the sills there are two posts opposite of the machine. The rollers are upon or shell spindles or works between these two posts there is a frame or carriage locked into the inside of these posts and sills in bearings or rolls passes through this frame longitudinal cutways in the machine & passes through the feet of the springs that by which the screw is shifted to the rollers cylinder & the springs are confined by bolts in the middle to the middle of the frame of the apron and this makes four working springs at each end

The before mentioned rolls are for the apron to circulate or shift on the frame of the apron is covered with sheet iron copper or tin & holes cut through large enough for the seed & trash to pass through after it is rubbed off the straw &c and there are catches raised on the upper side of the iron & between the holes to hold the seed of the grain. as it passes between the roller & apron & these catches being raised in the iron the resemble a grater. The roller is made of the same materials and resembles a grater on the outside and has 3 or 4 steel pipes thro the roller long thereof & over one end is a pulley to give the roller a revolving motion. There are two grooves

on this shaft [illegible] a frame above the rolls by a series of links but goes from each pivoted to the frame B there are two shaft pieces this frame B are connected to another frame but is calculated for that purpose then only one for the rolls to vibrate on. The rolls revolves & vibrates at the same time, the spring or steel ribbons or strips in opposition or when the rolls strikes one to the other strips the other away. This produces the rubbing & first vital principle of the machine. I claim this principle as my own discovery for the purposes herein described. And I claim this in the making of rolled spring or steel &c. of iron or wood or any kind of material based on this principle. At one end of the machine are posts for the middle posts & is to support the feeding cloth or table, here are the rolls of wood that the cloth passes round & on one of the rolls & near the end is a pulley to give the feeding pulley its motion.

At the other end of the machine are posts for the main shaft fly wheel crank &c. The fly wheel is on the end of the shaft near the drive is the pulley to give motion to the other end is the crank. The end of the pitman is at tached to the crank & the other end is connected to the first lever.

This lever is horizontal there is a shaft passes thro this lever & at the other end of this shaft is the second lever is perpendicular & then is a connecting rod goes from the lower to the third lever & is connected & both by pins & by raising this rod gives a longer vibrating stroke or motion to both spring and rollers in case the grain is stumpy or kind of open texture or shortens the vibratory stroke by letting the rod down in case the grain is [illegible] any kind of open texture. This lengthening and shortening the vibratory motion I claim as my own discovery for the purposes this machine is intended & is the second vital principle.

The third lever has a shaft which passes through the middle of the lever & the same shaft passes through the middle of the fourth lever & the fourth lever

two pans & Machine at both ends & there is a connecting rod goes from the top end of the fourth beam to the roller & is fastened by a pin on there is connecting rod attached to the bottom end of the fourth beam & to the apron or sheet B by the fourth beam acting as a lever at the middle it causes the rubbing of both apron & sheet when in Operation. The first wheel to give the whole motion to the machine is connected on off right pins of shaft and all as before,

The band passes round this wheel and then round the pulley on the main shaft & then round the pulley that is on the shaft of the roller & then round the pulley that gives motion to the rubbing cloth & then back under the two pulleys that are under the apron & back to where it first began. Now the machine being put in the grain is spread on the feeding table & carried by the roller the roller then revolving causes the grain between it & the apron & then both roller & apron rubbing then here contains or vibrating the grains & rubbing motion the grain is rubbed between the roller & apron & the seed & grain is rubbed off or separated from the chaff & straw &c. The seed then passes thro the holes in the apron and falls down on to the slide board & inclined plane & so falls into the front part of the machine the straw & it passes down the other end of the machine in another place.

The particular properties or principles I claim as my own invention or discovery & I lay claim to the exclusive right to the same. First principle is the revolving of rollers & vibrating of rollers & apron or sheet at the same time & preceding the rubbing principle before stated to rub the seed or rub off the straw &c. Second principle is the lengthening & vibrating stroke or motion of the rollers & apron or sheet &c. in case the grain be clamp or inclined to stop or shortening the vibrating stroke or motion of the grain be dry and in good order for operation. Third principle is the general form, position and construction of the whole machine to give the two first principles motion &c.

All of the above specified apparatus & devices

as my own invention or discovery for the purpose herein specified.

Witness
Geo. Graham with
Rich'd. Cook.

Duncan Kelloe

(Witness)