

(No Model.)

2 Sheets—Sheet 1.

C. H. TAYLOR.
CORN HUSKING MACHINE.

No. 497,693.

Patented May 16, 1893.

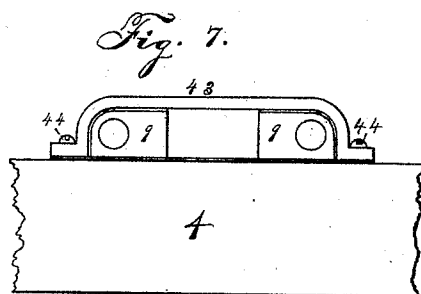
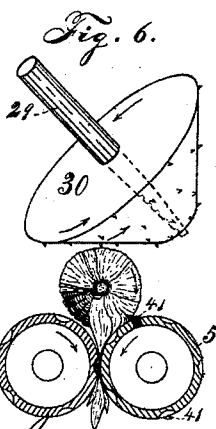
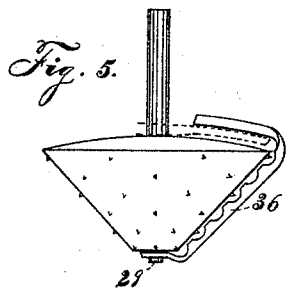
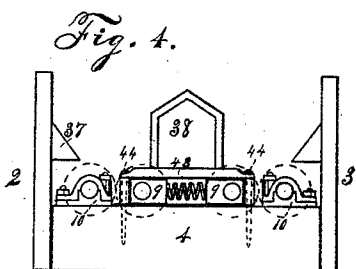
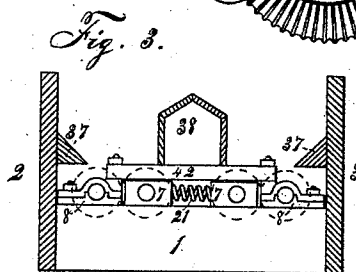
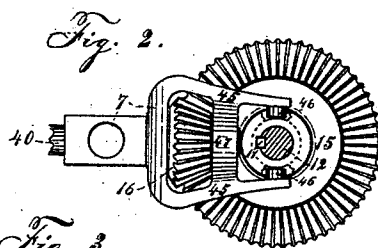
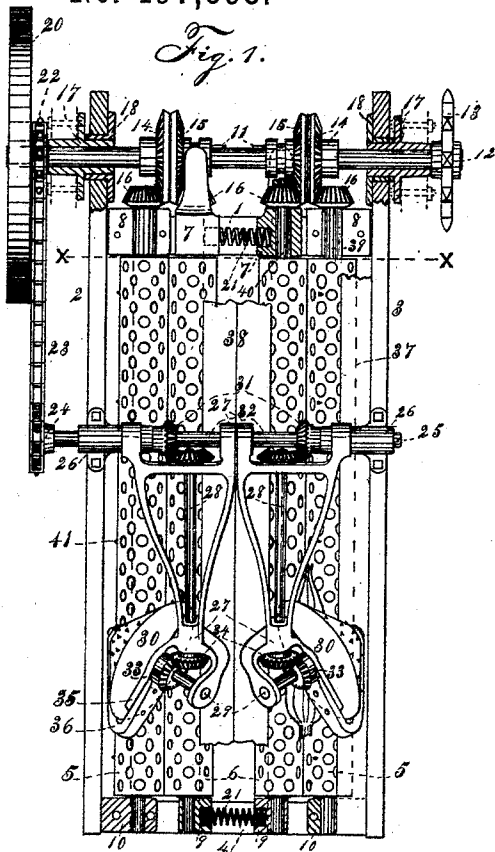
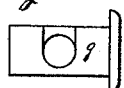


Fig. 8.



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(No Model.)

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Fig. 9.

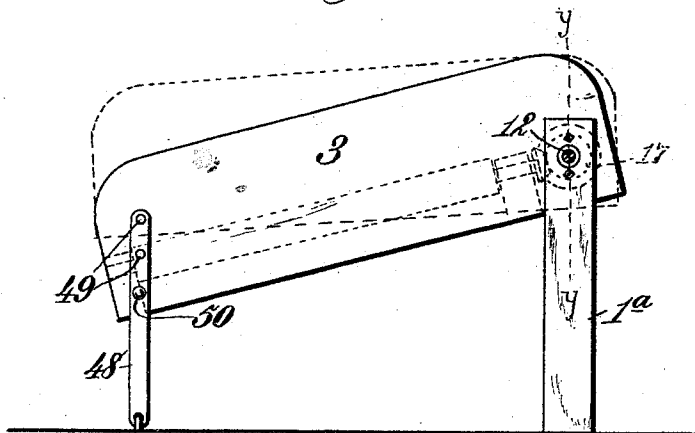


Fig. 10.

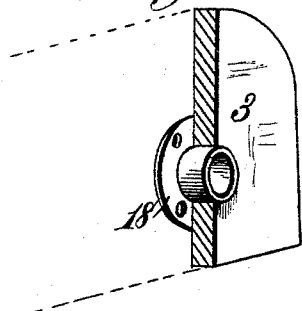


Fig. 11.

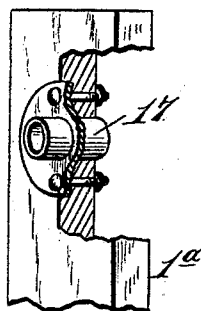
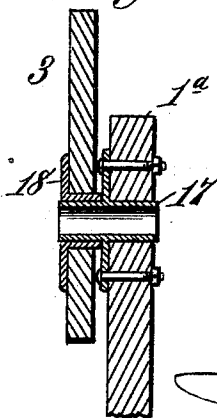


Fig. 12.



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UNITED STATES PATENT OFFICE.

CHARLES H. TAYLOR, OF LINCOLN, NEBRASKA.

CORN-HUSKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 497,693, dated May 16, 1893.

Application filed August 9, 1890. Serial No. 361,558. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. TAYLOR, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented certain new and useful Improvements in Corn-Husking Machines, of which the following is a specification.

My invention relates to that class of husking machines which remove the husks from the ears by means of rollers.

The object of my invention is to provide a new and improved machine which is simple, durable, and effective; and which will husk the corn without crushing or shelling the ears, and husk it more perfectly and rapidly than can be done with the husking machines before in use.

To accomplish this object my invention involves the features of construction and the combination or arrangement of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a top or plan view of the machine. Fig. 2 is a side view of the gearing mechanism for the self-adjusting rollers. Fig. 3 is a cross section on the line *x, x*, of Fig. 1. Fig. 4 is an end view of the lower part of the machine. Fig. 5 is a detail view. Fig. 6 is a cross section of a pair of indented husking rollers, with a bevel roller above in its proper relative position, and an ear of corn between them in the act of being husked. Figs. 7 and 8, are detail views. Fig. 9, is a detail side elevation showing sufficient of the machine to illustrate devices for adjusting the auxiliary or husker frame into different inclined positions. Fig. 10, is a broken perspective view showing the upper end portion of one side piece of the auxiliary or husker frame. Fig. 11, is a broken perspective view of one of the supporting posts for the upper end of the auxiliary or husker frame, and Fig. 12, is a detail vertical sectional view on a larger scale taken on the line *y—y* Fig. 9, to more clearly illustrate the devices for journaling the upper end of the auxiliary or husker frame to the posts or other support.

Similar numbers refer to similar parts throughout the several views.

Before proceeding with the detail description of this corn husking machine, I will say

that it is intended to be operated in a slanting or inclined position, the end in which the driving shaft is located being the head or upper end of the machine.

The object of operating the machine in a slanting position is so that the ears of corn will travel through it quite rapidly, without being forced along by special machinery. As this machine may be supported adjustably the ears of corn may be caused to travel through it at any rate of speed desired, by raising or lowering the lower end of the machine, thus giving the proper slant or inclination.

The cross pieces or sills 1, and 4, and the side boards 2, and 3, form the auxiliary or husker frame of the machine. On the outer ends of the sills 1, and 4, are secured the boxings 8, and 10, and in these boxings revolve the journals of the rollers 5. On the sills above referred to, and between the boxings 8, and the boxings 10, are placed the sliding boxings 7, and 9, and in these sliding boxes revolve the journals of the rollers 6. The boxings 17 are secured to posts, sills, or other suitable frame-work as indicated by dotted lines in Fig. 1, and by the numeral 1^a, Figs. 9, 11 and 12 and in these boxings revolves the drive shaft 12; and the upper end of the machine is supported and held adjustably in its proper relative position to said shaft by means of the bearings or collars 18, which rest on the inner ends of said boxings 17, and are secured to the upper ends of the side-boards 2, and 3, See Fig. 1. Or the boxings 17, and collars 18, may be reversed, and said boxings 17 be secured to the side-boards 2, and 3, and the bearings or collars 18 secured to the posts or sills which support the upper end of the machine. The lower end of the machine may be supported adjustably by any suitable means desired; but I prefer to employ a main frame or standard 48 Fig. 9, one at each side of the machine, provided with a series of orifices for the reception of a pin or screw which engages the auxiliary or husker frame, so that by adjusting the pin or screw into any one of the orifices and engaging it with the auxiliary or husker frame, the latter may be rigidly supported at any desired angle of inclination.

On the drive-shaft 12, are mounted the bevel

gears 14, and 15, and the gears mesh into the bevel gears 16, which are secured to the journals 39, and 40, of rollers 5, and 6; and by this means power and rotary motion is transmitted from the drive shafts to said rollers. The rollers 6, revolving as they do in sliding boxings, are self adjusting and are pressed against the rollers 5, by means of springs 21. Whenever any hard or semi hard substance, such as pieces of corn-stalks, stems, &c., are passing between the husking rollers 5, and 6, the self-adjusting rollers 6, can move back away from the stationary rollers 5, enough to relieve the rollers of all unnecessary strain; the necessary amount of pressure always being applied and retained upon the substance passing between said rollers by means of the springs 21.

These machines can be constructed with any number of pairs of husking rollers (and mechanism relating thereto) which may be desired.

In order that a husking machine may be perfectly successful in performing its work, it is very necessary that both rollers shall always have power applied to them, and when self-adjusting rollers are used, which are free to move back and forth on a line with the driving shaft, a stationary driving-gear for said rollers would not answer the purpose; therefore the shifting gear mechanism which I use and which is illustrated in Figs. 1, and 2, is very valuable for machinery of this kind.

In the drive shaft 12 is bedded the stationary keys 11, which cause the bevel gears 15 to revolve with said shaft, and said gears are fitted to said shaft and keys loosely enough, so that they can freely slide back and forth.

The shifting gear mechanism above referred to is constructed as follows: The sliding boxing 7, is provided with arms 45, extending outward from it and the inner sides of the ends of these arms are provided with lugs or rollers 46, which rest in a groove in the extended hub of the drive gear 15. Extending from one arm to the other is a strip of metal 47, which forms a bearing on the end of the journal or shaft 40, (of the self adjusting roller 6) which helps to hold the arms more perfectly and steadily in line with said journal. By means of the mechanism above described the bevel drive-gear 15, is always kept in its proper relative position to the bevel-gear 16, and the roller-journal 40, to which said gear is secured, even if the roller is continually moving back and forth.

The husking rollers (5, and 6,) which are used in this machine are constructed with their outer surfaces, which come in contact with the ears of corn, made smooth and true; and in this smooth surface at suitable distances apart are formed indentations or shallow holes as shown in Figs. 1, and 6. The object of using rollers with indented surfaces is that when husking corn with rollers of this kind, the stalks, stems, husks, or whatever

substance is being run through between them will never slip and stop, thus clogging the machine. The smooth outer surface of the rollers which remains between the indentations, serves to prevent the ears of corn from being drawn between them and crushed or shelled. One roller of each pair should be provided with suitable teeth 41, (as shown in Figs. 1 and 6) for the purpose of tearing the husks loose from the ears, and drawing them down between the rollers so that said rollers can get hold of them, run them through between them, and entirely separate them from the ears. The husking teeth or hooks 41, may be screwed into the rollers or secured to them in any other suitable way.

The rollers which are used in combinations with the ones having the husking teeth are provided with holes or indentations of suitable depth and location for said husking teeth to pass into as the rollers revolve around together; thus preventing said teeth from being jammed and dulled.

The sliding boxings 7, are covered and kept in their proper position by a cap-strip 42, secured above them as shown in Fig. 3. The sliding boxings 9, are covered by a cap 43, the ends of which rest on uprights or legs, and it is secured above said boxings by means of screws or bolts 44, as shown in Fig. 4. The cap 43, may be constructed as shown in Fig. 7 if preferred. The boxings 9, should be constructed with a flange on their upper ends (which are next to the rollers) as shown in Fig. 8; and this flange resting against the edge of the sill 4, and cap 43, prevents said boxings from slipping downward and out of their proper position. To the caps 42 and 43, is secured the divider 38, which serves to keep the ears of corn lying lengthwise on each pair of husking rollers, and to cover the space between the two pairs of rollers. The bevel-strips 37, secured to the side-boards 2, and 3 also help to keep the ears of corn in their proper position while passing over the husking rollers.

I will now proceed to describe the bevel rollers 30, the means for supporting and operating them, and the object in using them. There are always some ears of corn which have the husks wrapped very closely and tightly around them, and such ears are very likely to travel so lightly over the husking rollers that the husking hooks or teeth will be unable to tear the husks loose, and the rollers remove them from the ears; but by having a little pressure properly applied upon such ears to press them against the husking rollers, they will be husked almost instantly. My object in using the bevel rollers 30, is to prevent the ears of corn from passing over the husking rollers without being husked, and at the same time to cause them to travel forward quite rapidly. The action of these bevel rollers upon the ears is to press them against the husking rollers and at the same time to cause them to travel forward and to roll over

once or more while they are passing under said bevel rollers, or while the pressure is being applied; thus enabling said husking rollers to remove the husks from all sides of the ears.

The roller 30, is made tapering or cone-shaped, is provided with a shaft or axle 29, and its face or cone-shaped surface is provided with teeth or any other suitable roughness for the purposes hereinafter explained. The shaft 29, of bevel roller 30, revolves in bearings formed in the forks or arms of the hanger 27, see Fig. 1. The hanger 27, swings on the shaft 25, and by this means the bevel roller is held adjustably in its proper position.

On the shaft or axle 29, of bevel roller 30, is secured the bevel gear 33, into which meshes the bevel gear 34. The bevel gear 34, is secured to the end of the shaft 28, which revolves in bearings formed in the hanger 27; and to the other end of said shaft is secured the bevel gear 32. On shaft 25, is secured the bevel gear 31, which meshes into bevel gear 32, and by this means power and rotary motion is transmitted from shaft 25, to bevel roller 30. Shaft 25, revolves in the boxings 26, which are secured to the side-boards 2, and 3.

On the drive-shaft 12, near one end, is secured the sprocket wheel 22, and on the end of the shaft 25, is secured the sprocket wheel 24. Around the sprocket wheels 22 and 24, is wrapped the endless chain 23, and by this means power and rotary motion is transmitted from the drive-shaft to shaft 25. The bevel roller 30, should always be held and operated in such a position that its lower surface which comes in contact with the ears of corn will have both a forward and side movement; and its bevel or cone shaped surface should be provided with teeth or other suitable roughness, so that its action upon the ears will be sure and uniform. See Fig. 6.

The bevel roller 30, may be provided with a guard 36, secured to the arm 35, (as shown in Fig. 5) for the purpose of preventing the husks, stems, ears, &c., from being drawn around behind it. The guard 36, may be held more perfectly in its proper relative position to the bevel roller by forming a bearing on the lower end of shaft 29, of said roller, as shown in Fig. 5.

The bevel roller 30, being supported as it is by a swinging hanger 27, can adjust itself to any sized ear; and a portion of its weight may be carried by a spring of any suitable kind applied in any way desired.

The machine may be provided with a balance wheel 20, which may be mounted on one end of the drive-shaft 12, as shown in Fig. 1.

Power and rotary motion may be transmitted to the machine by means of an endless chain running on the sprocket wheel 13, which is secured to the end of the drive-shaft 12; or the machinery may in like manner be driven by a belt.

I do not herein broadly claim the indented

husking rollers described and shown as such constitute the subject matter of my application, Serial No. 358,015.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination in a corn husking machine, of a suitable supporting frame, a driving shaft mounted thereon, an auxiliary frame carrying the husking mechanism and having pivotal bearings at one end concentric with the driving shaft, and adjustable in the arc of a circle struck from the center of said shaft, a series of indented rollers, arranged in pairs, and journaled to said frame, one of each pair arranged to revolve in movable journal boxes, so that it can move laterally to and from the other roller, the gear wheels connecting each of the husking rollers with the driving shaft, the gear wheels on the drive shaft, which drive the movable rollers, being arranged to move back and forth on said shaft, and means for connecting each movable roller and the movable driving gear, so as to keep it and the roller gear in constant engagement during the varying movements caused by the corn husks and stems passing between said rollers, substantially as set forth.

2. A corn husking machine, consisting of a suitable support, a driving shaft carried thereby, an auxiliary frame journaled at one end on the drive shaft and movable in the arc of a circle to different inclinations, devices for rigidly holding the auxiliary frame in position after its adjustment to the desired angle of inclination, a series of parallel husking rollers journaled in the auxiliary frame and co-acting to husk ears of corn, and gear wheels connecting the husking rollers with the drive shaft, one of said gear wheels being movable along the length of the drive shaft and loosely connected with one of the husking rollers, substantially as described.

3. In a corn husking machine, the combination of a suitable supporting frame, a driving shaft mounted thereon, an auxiliary frame carrying the husking mechanism, having pivotal bearings at one end concentric with the driving shaft, and adjustable in the arc of a circle struck from the center of said shaft, devices for holding said auxiliary frame in a fixed position after adjustment to the desired angle of inclination, a series of husking rollers arranged in pairs, and journaled to said frame, one roller of each pair arranged to revolve in movable journal boxes, so that it can move laterally to and from the other roller, the springs which press against the movable journal boxes, to hold the movable rollers tightly against the other rollers, a pair of bevel gear wheels to connect each of the stationary rollers with the drive shaft, and a pair of bevel gear wheels to connect each of the movable rollers with the drive shaft, the driving gears of said movable rollers arranged to move lengthwise on the drive shaft, so that said shaft and the movable roller gears will

always be kept in constant engagement during the continual lateral movements of the movable rollers toward and from the other rollers, substantially as set forth.

5 4. The combination in a corn husking machine, of a suitable support, a drive shaft mounted thereon, an auxiliary frame having pivotal bearings concentric with the drive shaft and adjustable in the arc of a circle
10 struck from the center of said shaft, a series of husking rollers journaled on the auxiliary frame and one movable laterally toward and from the other, and gear wheels connecting the husking rollers with the drive shaft, one
15 of said gear wheels being movable along the length of the drive shaft and loosely connected with the laterally movable husking roller, substantially as described.

5. In a corn husking machine, the combination of a series of husking rollers arranged in
20 pairs, one roller of each pair arranged to revolve in stationary journal boxes, and the other in movable journal boxes, a driving shaft arranged transverse to the husking rollers near their upper ends, independent bevel
25 gear wheels to transmit power and rotary motion from the drive shaft to the husking rollers, the driving gear for each stationary roller being rigidly attached to the drive shaft, and the driving gear for each movable roller
30 keyed to the drive shaft so that it will rotate with, and at the same time be movable lengthwise on said shaft, and the means for connecting the said movable drive gears with the movable rollers, so that said movable drive
35 gears and the movable-roller-gears will always remain in constant engagement, during the continual lateral movements of said rollers, substantially as set forth and for the purpose
40 specified.

6. The combination in a corn husking machine, of a suitable support, a drive shaft mounted thereon, an auxiliary frame having pivotal bearings concentric with the drive
45 shaft and adjustable in the arc of a circle struck from the center of the said shaft, a series of husking rollers journaled on the auxiliary frame and one of which is mounted in yielding journal boxes to move laterally to
50 and from the other roller, and gear wheels connecting the husking rollers with the drive shaft, one of said gear wheels being movable along the length of the drive shaft and loosely connected with the laterally movable roller,
55 substantially as described.

7. A corn husking machine, consisting of a suitable support, a drive shaft carried thereby, an auxiliary frame journaled at one end and movable in the arc of a circle to different
60 inclinations, devices for holding the auxiliary frame in a fixed position after its adjustment to the desired angle of inclination, a series of husking rollers journaled in the auxiliary frame and coacting to husk ears of
65 corn, and gear wheels connecting the husking

rollers with the drive shaft, one of said husking rollers being laterally movable and one of said gear wheels arranged to be shifted on the drive shaft being connected with the laterally movable husking roller, substantially as described.

8. The combination with an auxiliary frame, and a drive shaft, of husking rollers journaled on the auxiliary frame and one movable laterally relatively to the other, and gear wheels
75 connecting the husking rollers with the drive shaft, one of said gear wheels being movable on the drive shaft and loosely engaged with one of the laterally movable husking rollers, substantially as described.

9. The combination with corn husking rollers having a series of indentations and husking teeth or hooks, of beveled or cone shaped rollers provided with teeth or other suitable roughness, substantially as described.

10. In a corn husking machine, the combination with a main frame, of husking rollers provided with bevel gears and one of which is moved away from the other by the corn
90 passing between the two rollers, a rotary drive shaft having a rigid bevel gear, a bevel gear slidable along but rotating with the drive shaft and meshing with the bevel gear of the laterally movable husking roller, and devices loosely connecting the laterally movable husking
95 roller with the sliding bevel gear on the drive shaft, substantially as described.

11. In a corn husking machine, the combination with an auxiliary frame, of husking rollers driven by bevel gears, one of said rollers revolving in stationary journal boxes and the other arranged to be moved away from the stationary journal boxes by the husks and stems passing between the rollers, a rotary
105 driving shaft having a rigid bevel gear, and a bevel gear movable along but rotating with the drive shaft and meshing with the bevel gear of the laterally movable husking roller, and devices connecting the latter with the sliding bevel gear on the drive shaft, substantially as described.

12. In a corn husking machine, the combination of a suitable frame, a drive shaft, a series of husking rollers mounted in pairs on said frame, one roller of each pair revolving
115 in stationary journal boxes and the other in movable boxes, an independent pair of bevel gear wheels connecting each roller with the drive shaft, the drive gear of each movable roller being connected with the latter and
120 arranged to slide lengthwise on the drive shaft, bevel rollers movably arranged above the husking rollers, and means for supporting and operating the bevel rollers, substantially as described.

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