

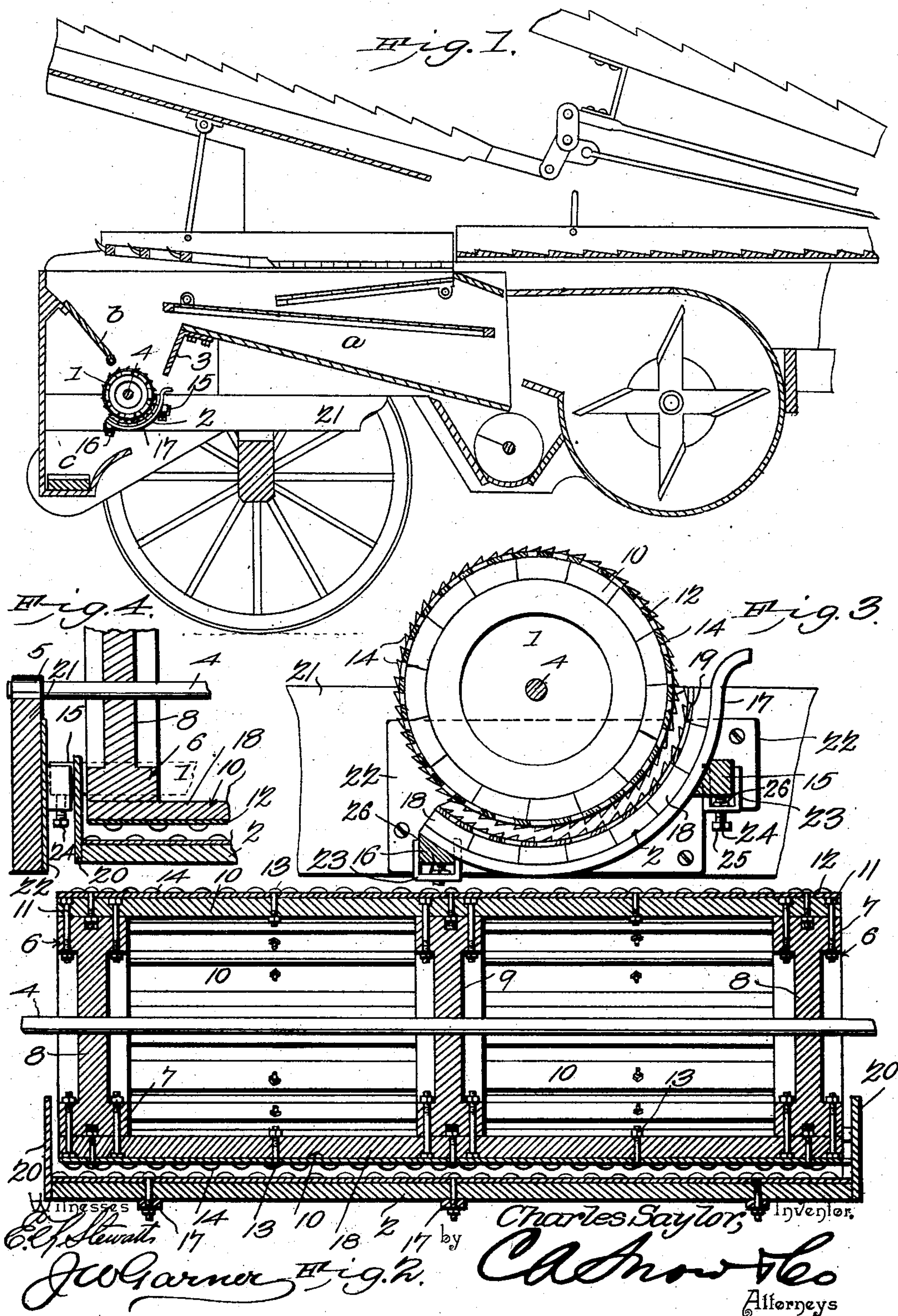
No. 754,612.

PATENTED MAR. 15, 1904.

C. SAYLOR.  
CLOVER HULLING ATTACHMENT FOR THRESHING MACHINES.

APPLICATION FILED APR. 21, 1902.

NO MODEL.





# UNITED STATES PATENT OFFICE.

CHARLES SAYLOR, OF CODY, WYOMING.

## CLOVER-HULLING ATTACHMENT FOR THRESHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 754,612, dated March 15, 1904.

Application filed April 21, 1902. Serial No. 104,041. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES SAYLOR, a citizen of the United States, residing at Cody, in the county of Bighorn and State of Wyoming, have invented a new and useful Clover-Hulling Attachment for Threshing-Machines, of which the following is a specification.

My invention is an improved clover-hulling attachment for threshing-machines, by means of which the machine which is used for threshing grain may be also employed for hulling clover and for analogous purposes; and my invention consists in the peculiar construction and combination of devices hereinafter fully set forth and claimed.

In the accompanying drawings, Figure 1 is a sectional view showing the rear portion of a threshing-machine provided with my improved clover-hulling attachment. Fig. 2 is a vertical transverse sectional view taken on a plane intersecting the cylinder and concave of my improved clover-hulling attachment. Fig. 3 is a detail sectional view taken on a plane intersecting the clover-hulling cylinder and concave and parallel with the axis of the clover-hulling cylinder. Fig. 4 is a detail vertical sectional view showing one of the side sills of the threshing-machine and one of the supporting-plates thereon disposed for supporting and admitting of the adjustment of the clover-hulling concave.

My improved clover-hulling attachment comprises a cylinder 1 and a concave 2, which are disposed in the rear portion of the threshing-machine casing below the rear end of the grain-shoe *a*. To the under side of the latter at its rear end is bolted or otherwise secured a deflector 3, which is angular in cross-section, as shown in Fig. 1, and has a substantially vertically-disposed portion disposed above the throat or space between the cylinder and concave, and thereby adapted to feed the clover-hulls thereto. It will be understood that the clover hay will be first passed through the usual threshing mechanism and subjected to the action of the usual separating mechanism, as is described in Letters Patent of the United States, No. 696,498, which was granted to me April 1, 1902.

In the construction of the clover-hulling

cylinder 1 I employ a shaft 4, the ends of which are journaled in suitable bearings in the sides of the threshing-machine casing, as at 5. The heads 6 of the clover-hulling cylinder are preferably castings, are circular in form, and have lateral flanges 7, which project from opposite sides of the intermediate web portions 8 of the heads. Interposed between the heads 6 at the ends of the cylinder are intermediate webs 9, which are of the same construction and of which one or more may be used, according to the length of the cylinder and the width of the grain-shoe. On the peripheries of the cylinder-heads are longitudinally-disposed cylinder-bars 10, the inner sides of which are concaved and adapted to fit snugly on the cylinder-heads, and the outer sides of said cylinder-bars are concentric with the shaft, as shown in Fig. 2. The said cylinder-bars are secured on the cylinder-heads by means of bolts 11, the heads of which are socketed in recesses in the outer sides of the cylinder-bars, said bolts extending through openings in the cylinder-bars and registering openings in the flanged portions 7 of the cylinder-heads as shown in Fig. 2. In practice the cylinder-bars will preferably be made of wood, such as thoroughly-seasoned hard maple, oak, or hickory. The surface of the cylinder is formed by a metallic rubbing-sheet 12, which is bent around the cylinder and secured to the outer sides of the cylinder-bars by means of suitable nails 13. From the surface of the rubbing-sheet 12 project teeth or beards 14, which in practice are struck up from the inner side of the rubbing-sheet, and all have their outer faces rearwardly inclined from the direction of rotation of the cylinder from radially-disposed operating-faces lying about the edge of the opening. In practice the rubbing-sheet is of sheet-steel about one-sixteenth of an inch in thickness, and the teeth or beard thereon are about the size of those on the rough or course side of a horseshoe-rasp.

The concave 2 comprises a pair of supporting-bars 15 16, which are longitudinally disposed with respect to the concave and transversely disposed with respect to the threshing-machine casing, and the supporting-bar 15 is at the front upper side of the concave, while the bar 16 is at the low rear side thereof.



The said supporting-bars are connected together by curved bridge-bars 17, which are transverse with respect to the concave and are curved concentrically, or practically so, with relation to the cylinder. These bars 17 are of iron or steel and are bolted to the supporting-bars 15 16, which are preferably made of wood. On the upper sides of the bridge-bars 17, which are spaced somewhat apart, are secured longitudinally-disposed concave-bars 18, which are preferably made of wood, are fitted closely together, and the inner and outer faces of which are concentric, or substantially so, with relation to the cylinder. These bars 18 are bolted to the bridge-bars 17, and the inner surfaces of said bars 18 are covered by a rubbing-sheet 12, as on the cylinder, but the inclined teeth of which project in opposite directions. The ends of the concave-bars 18 are coterminous with the ends of the cylinder, and on the ends of the concave-bars are secured plates 20, which extend upwardly and inwardly from the concave, overlap the ends of the cylinder, and prevent material, such as clover-seeds, hulled and unhulled, from working endwise from between the cylinder and concave. The ends of the supporting-bars 15 16 project somewhat beyond the ends of the concave.

On the inner sides of the side sills 21 of the threshing-machine are secured plates 22, which are provided with horizontally - disposed brackets 23, on which the end portions of the supporting-bars 15 16 bear, said brackets having upstanding side flanges to bear against the sides of said supporting-bars and prevent lateral displacement of the concave. Adjusting-bolts 24 are provided which engage threaded openings in the brackets 23 and extend through the supporting-bars, and on the outer portions of the said adjusting-bolts are heads 25 and jam-nuts 26. It will be understood that by partly turning these bolts the supporting-bars, and hence the concave which they carry, may be adjusted so that the concave may be disposed at the required distance from the cylinder. The jam-nuts enable the

adjusting-bolts to be secured against further rotation when the concave has been adjusted.

I employ a valve *b*, such as is described in my prior patent hereinbefore referred to, which valve is disposed above the cylinder 1 and may be turned, as shown in Fig. 1, to cause clover-hulls to be discharged from the grain-shoe onto the hulling-cylinder. When the threshing-machine is used for threshing grain, the said valve is closed against the grain-shoe, in which position it serves to cover the cylinder and concave constituting the hulling mechanism and forms a chute which delivers the tailings directly into the conveyer *c*.

Having thus described my invention, I claim—

1. In combination with a cylinder, a concave having longitudinally - disposed supporting-bars at its front and rear sides, fixed brackets on which the ends of said bars rest, said brackets having upstanding flanges bearing against the front and rear sides of said bars and forming retaining-guides therefor, and adjusting-bolts with which said brackets are provided and bearing under the bars to adjust the concave, substantially as described.

2. A clover-hulling concave comprising longitudinally-disposed supporting-bars at the front and rear sides of the concave, transversely-disposed curved bridge-bars secured to and connecting said supporting-bars, longitudinally-disposed bars secured on the upper sides of said bridge-bars and a metallic rubbing-sheet secured on the concave surfaces of the last-mentioned bars, and provided on its upper surface with tangentially - disposed teeth, in combination with a revoluble cylinder having a similar metallic rubbing-sheet on its periphery, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES SAYLOR.

Witnesses:

FRANK L. HOEY,  
FRANK M. WILLIAMS.