

(No Model.)

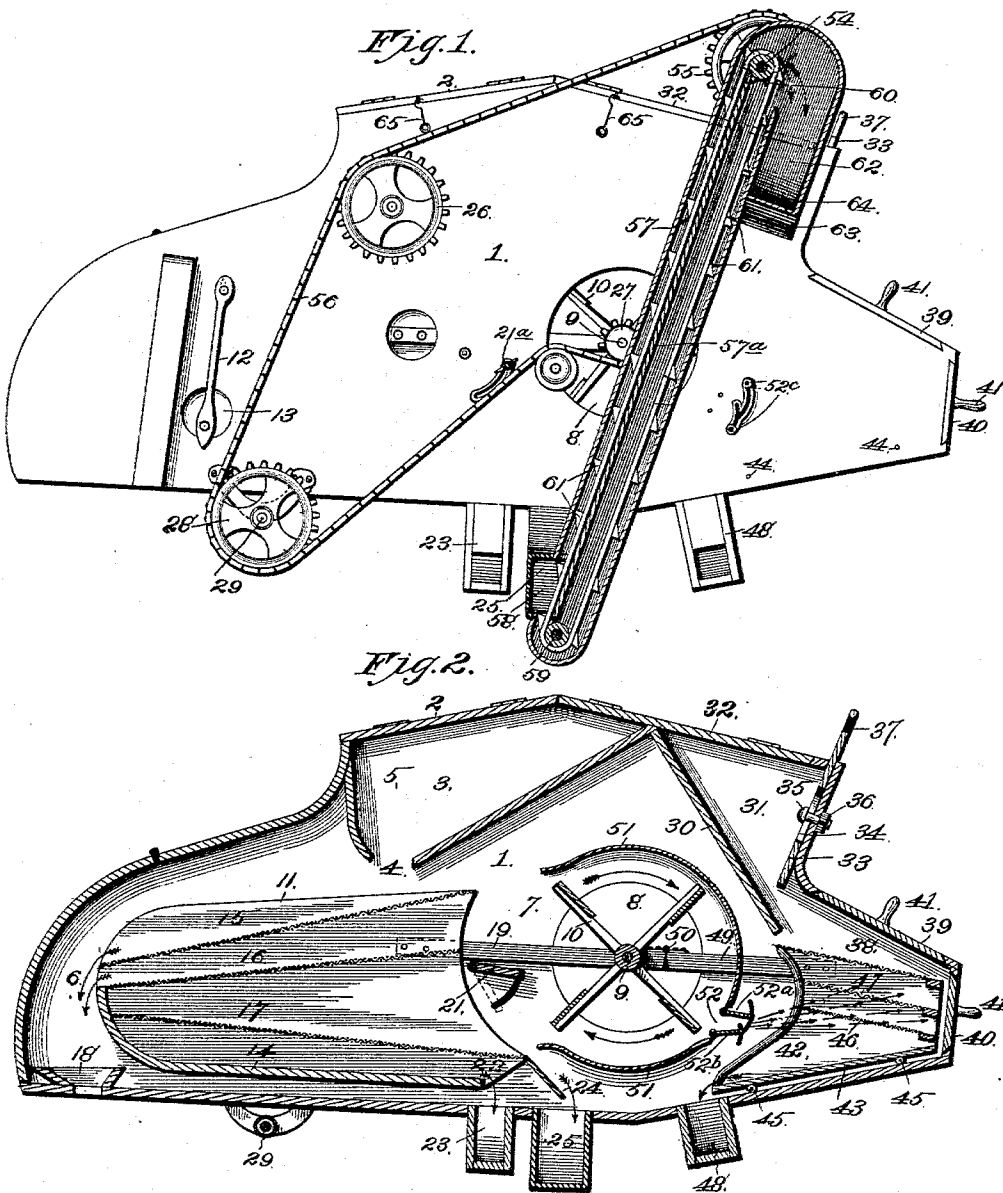
2 Sheets—Sheet 1.

A. D. FERGUSON.

CLOVER AND TIMOTHY RECLEANING AND SEPARATING ATTACHMENT
FOR SEPARATORS.

No. 583,899.

Patented June 8, 1897.



Witnesses:

M. R. Remley.

[Signature]

Inventor:

A. D. Ferguson,

By *[Signature]*
attys.

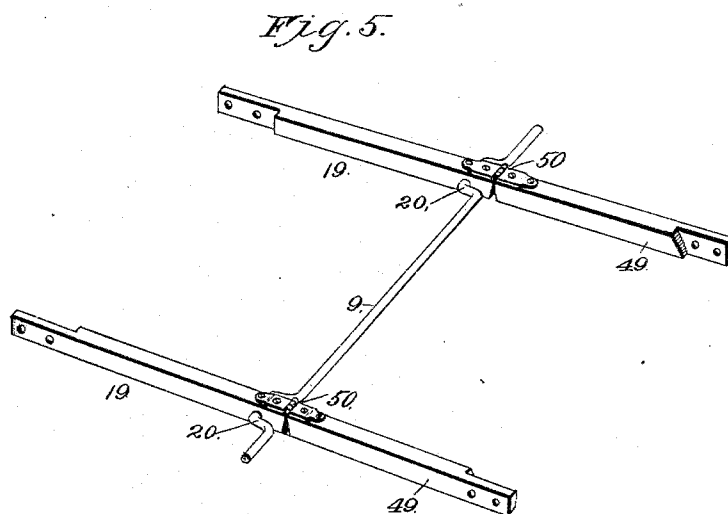
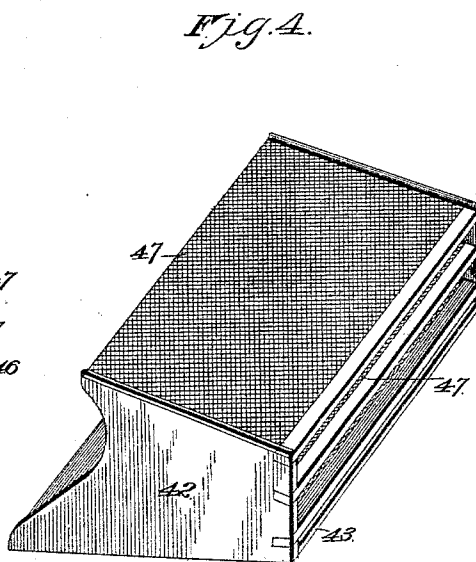
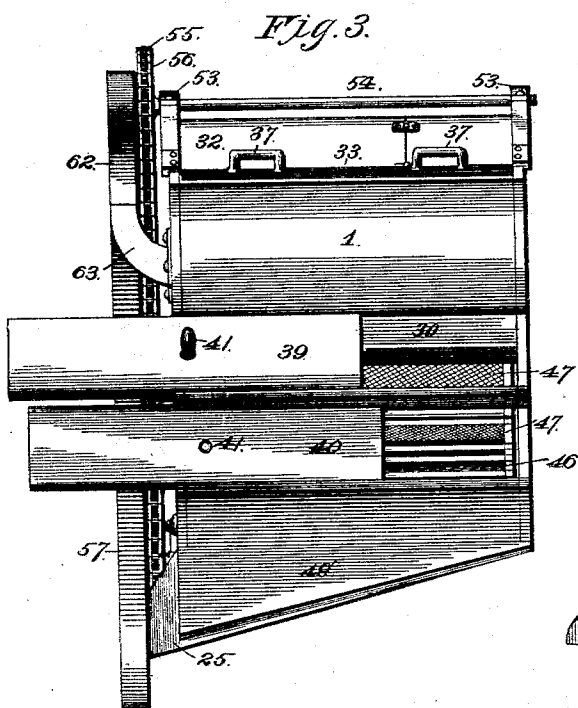
(No Model.)

2 Sheets—Sheet 2.

A. D. FERGUSON.
CLOVER AND TIMOTHY RECLEANSING AND SEPARATING ATTACHMENT
FOR SEPARATORS.

No. 583,899.

Patented June 8, 1897.



Witnesses:

M. R. Remley,

Atty.

Inventor:

A. D. Ferguson,

By, Higdon & Higdon
attys.

UNITED STATES PATENT OFFICE.

ALFRED D. FERGUSON, OF ODESSA, MISSOURI.

CLOVER AND TIMOTHY RECLEANING AND SEPARATING ATTACHMENT FOR SEPARATORS.

SPECIFICATION forming part of Letters Patent No. 583,899, dated June 8, 1897.

Application filed February 18, 1895. Renewed November 16, 1896. Serial No. 612,385. (No model.)

To all whom it may concern:

Be it known that I, ALFRED D. FERGUSON, of Odessa, Lafayette county, Missouri, have invented certain new and useful Improvements in Clover and Timothy Recleaning and Separating Attachments for Separators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to attachments for clover-huller recleaners; and the object in view is to provide for the thorough separation and cleaning of clover and timothy.

A further object is to provide an attachment of this character which combines simplicity, durability, and cheapness of manufacture.

To these ends the invention consists in certain novel and peculiar features of construction and combinations of parts, as will be hereinafter described and claimed.

In order that the invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 represents a view, partly in elevation and partly in section, of a recleaner and attachment constructed in accordance with my invention. Fig. 2 represents a vertical longitudinal section of the same. Fig. 3 represents in elevation a view of the discharge end of the attachment. Fig. 4 represents a detail perspective view of the screen-carrying frame employed in and as a part of the attachment. Fig. 5 is a detail perspective view of the cranked fan-shaft and the pitmen connected thereto and to each other which operate or reciprocate the screen-frames.

Up to the present time, to my knowledge, there has been no machine for separating and cleaning clover and timothy and delivering it thus separated and cleaned into separate or independent bags or other receptacles ready for market. To accomplish this, I employ a casing 1 of any suitable or preferred construction. This casing is divided at a suitable point by partitions to form an upper compartment or hopper 3, which receives the clover and timothy in a mixed state by way of an elevator (not shown) upon the clover-huller. This hopper is closed at its upper

side by a hinged door 2. A spiral or screw 5 rotates in said hopper contiguous to the door-opening or exit 4 to distribute the uncleaned clover and timothy, so that it shall pass through said opening in a stream of uniform thickness upon a separating device to be presently described. The partitions hereinbefore referred to also form the compartments 6 and 7. The casing is provided in one or both sides with an opening 8, and extending axially thereof is a shaft 9, which is journaled in supporting-bars carried by the casing or in any other suitable manner. A fan 10 is mounted rigidly upon said shaft. The separating device hereinbefore referred to comprises, essentially, the vertical sides 11, which are supported near one end by the arms 12, pivoted externally to the casing and to said sides by way of the openings 13 (one only of which is shown) and the bottom 14, which connects said sides at their lower margins and curves upward a suitable distance at its front end. Connecting said sides and extending the full length thereof are the superimposed screens 15 and 16, which are below the exit-opening 4 of the hopper, hereinbefore described. These screens are inclined from their front ends downwardly and rearwardly, and the upper end of the curved extension of the bottom 14 lies in the same plane as the screen 16.

Below the screens 15 and 16, which are sufficiently large to permit therethrough the passage of timothy and clover seed, is a removable screen 17, the interstices of which permit the timothy-seed to pass through, but are not sufficiently large to permit the passage of clover-seed. Said screen 17 also extends downwardly and forwardly beyond the end of the bottom 14. The sticks and trash or waste from the timothy and clover seed pass from the screens 15 and 16 in the direction indicated by arrows into the hopper 18, which communicates with an elevator, (not shown,) and is conveyed to the stack. Secured to each side of the separating device and extending forwardly therefrom is a pitman 19, and these pitmen are mounted operatively upon the cranks 20 of the fan-shaft 9. In order to deflect the current of air from the fan 10, so as to provide a heavy under-

shot or overshot air-blast with the screen 16, I employ a pivoted deflecting-board 21, which is held at any required point in its adjustment or swing by the nut 21^a. By the proper operation of this board it is apparent that most of the air can be deflected either below or above the screen 16, so as to blow the dust and light particles from the sieve. By extending the front end of the screen 17 beyond the discharge end of the bottom 14 of the separating device an exit-space 22 is provided through which the timothy-seed, thoroughly cleaned of all trash and separated from the clover-seed, passes and drops into the spout 23. Thence it passes into bags or other receptacles placed to receive it in a clean and marketable condition. In order to prevent any of the clover which is discharged from the lower end of the screen 17 passing into the timothy-spout 23, I provide an inclined extension or lip 24, which overhangs at all times the spout 25, disposed for the reception of the clover-seed when separated from the timothy.

The parts thus far described, with the exception of the timothy-screen, the extension thereof, and the extra-spout 25, are common in a certain class of recleaners, and the sprocket-wheels 26, 27, and 28, mounted upon the shaft of the screw or spiral 5, and the fan and the shaft 29, respectively, are actuated to cause the operation of the said screw or spiral, said fan, and consequently the reciprocation of the separating device, by an endless chain in said class of recleaners.

The parts now to be described, with one exception, which will be hereinafter mentioned, comprise the attachment which I have invented.

30 designates a partition which forms a hopper 31 at the upper rear end of the casing, which is closed by a hinged door 32. The outlet or discharge opening from said hopper may be increased or diminished by means of the slide valve or door 33, which is provided with one or more slots 34, through which project the guide pins or bolts 35, carried by the casing and engaged at their outer ends by the nuts 36. Said slide valve or door is provided with handles 37, of the construction shown or of any other suitable or preferred construction, at its upper end. At the rear lower end of the casing and communicating with the hopper 31 is a chamber 38, which is closed at its upper side and at its front end by the slide-doors 39 and 40, respectively, these slide-doors being provided with handles 41. The rear end of the casing must be approximately of the peculiar outline or configuration in side view shown, so as to be out of the way of certain pulleys and a belt connecting the same upon the clover-huller proper. (Not shown.) Located in the chamber 38 is a separating device. The framework of the same comprises the vertical side walls 42 and the bottom 43, which inclines downwardly and rearwardly. The trunnions 44 of a pair of rollers 45 are

journaled rotatably in the side walls of the casing, and upon said rollers the bottom of said separating device rests. Carried by and forming a part of said separating device and inclining downwardly and forwardly are a pair of screens 47, which shed most of the trash and husks, permitting the clover-seed and finer particles only to pass therethrough, and arranged below and parallel with said screens is a screen 46, which permits only of the passage of clover-seed in a thoroughly cleaned and marketable condition. The seed drops down upon the inclined bottom 43 and passes thence into the spout 48, from which it escapes into bags or other receptacles placed to receive it.

49 designates a pair of pitmen which are secured to said last-mentioned separating device and are hinged to swing in a vertical plane at 50 to the contiguous ends of the pitmen 19. Therefore it is apparent that as the fan-shaft rotates the cranks 20 thereof cause the simultaneous reciprocation of the two separating devices. The circular wall, which in ordinary recleaners surrounds partially the fan and forms also one end of the casing itself, in this instance is employed as an internal partition 51 of the casing and is provided with a narrow opening or passage 52, which is controlled by a couple of pivoted valves or deflecting-boards 52^a, which are held in the required position by the nuts 52^b in the usual or any preferred manner, as shown at Fig. 1. By properly arranging these valves it is apparent that more or less air may be permitted to pass up through the screens of the roller-supported separator or the air-blast may be entirely cut off from said separating device. This will be done, however, only when it is desired to clean clover alone. Journaled in bearing-brackets 53 or any other suitable supports carried by the casing is a horizontal shaft 54, and mounted rigidly thereon is a sprocket-wheel 55. An endless chain 56 operatively connects the sprocket-wheels 55, 26, 27, and 28. An inclined elevator-casing 57 communicates at its lower end with the discharge end of the clover-spout 25 in advance of the division-board or partition 57^a, extending longitudinally therein. Journaled in the lower end of the said elevator-casing is a roller 59, and in the upper end, rigidly mounted upon the shaft 54, is a sprocket-wheel 60. An endless sprocket-chain operatively engages said roller and said sprocket-wheel and extends at the opposite sides of the said division-board or partition, as shown clearly in Fig. 1, and carried by said chain are seed-elevating cups 61, which are adapted as they become inverted at the upper end of the casing 57 to discharge the seed in the direction indicated by arrows, Fig. 1, down through the leg or extension 62 of the said casing and into the inclined chute 63, which may or may not form an integral part of the elevator-casing. From said chute the seed passes directly into the hopper 31

and thence passes down upon the roller-supported separating device, the quantity being regulated by the slide valve or door 37.

A recapitulation of the entire operation is unnecessary, it being deemed necessary only to state that as the mixed seed passes in a continuous stream from the hopper 3 it falls upon the reciprocating separator first described, where it is cleaned and the timothy and clover separated. The clover, passing through the spout 25, is then elevated to the hopper 21 and receives a second cleaning, which practically removes all foreign particles, and it is discharged in a thoroughly-cleaned and merchantable condition through the spout 48. When it is desired to employ the machine as a recleaner for clover alone, the timothy-screen 17 is easily and quickly removed, and the chain 56 is shortened, so as to operatively connect only the sprocket-wheels 26, 27, and 28, as hereinbefore referred to. It is also preferable to close the valves or deflectors 52^a, so as to cause all of the air to act upon the separator below the hopper 3. The casing 1 is provided at its front end with a hinged door which may be easily opened to give access to the interior thereof and to the separating device, which carries the timothy-screen 17. This door may be secured in any suitable manner, and the doors 2 and 32 may be also secured by means of hooks 65, as shown, or in any other suitable manner.

From the above description it will be apparent that I have produced a clover-huller-recleaner attachment which is simple and inexpensive of construction and thoroughly separates timothy and clover seed and delivers each in marketable condition.

I make no claim to that part of the machine, *per se*, which I have described as common in a certain class of recleaners, except the employment of the detachable timothy-screen.

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

An apparatus for recleaning and separating clover and timothy, consisting of a casing partitioned internally to form the chambers 6, and 38, to receive screening devices, and 7, to receive a fan, and the hoppers 3 and 31 above the chambers 6 and 38, and provided with a pair of spouts leading from the chamber 6, and a single spout from the chamber 38, and provided also with slide-doors 39, and 40, closing openings in the top and the end of the chamber 38, substantially as shown and described.

In testimony whereof I affix my signature in the presence of two witnesses.

ALFRED D. FERGUSON.

Witnesses:

VIRGIE TALIAFERRO,
A. J. HAMMONDS.