

Feb. 2, 1926.

1,571,491

G. E. PRITCHARD

BEAN HARVESTER

Filed Sept. 6, 1922

2 Sheets-Sheet 1

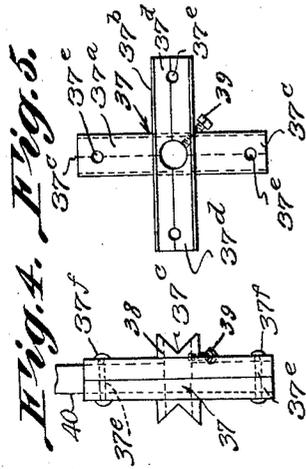
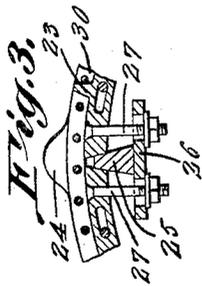
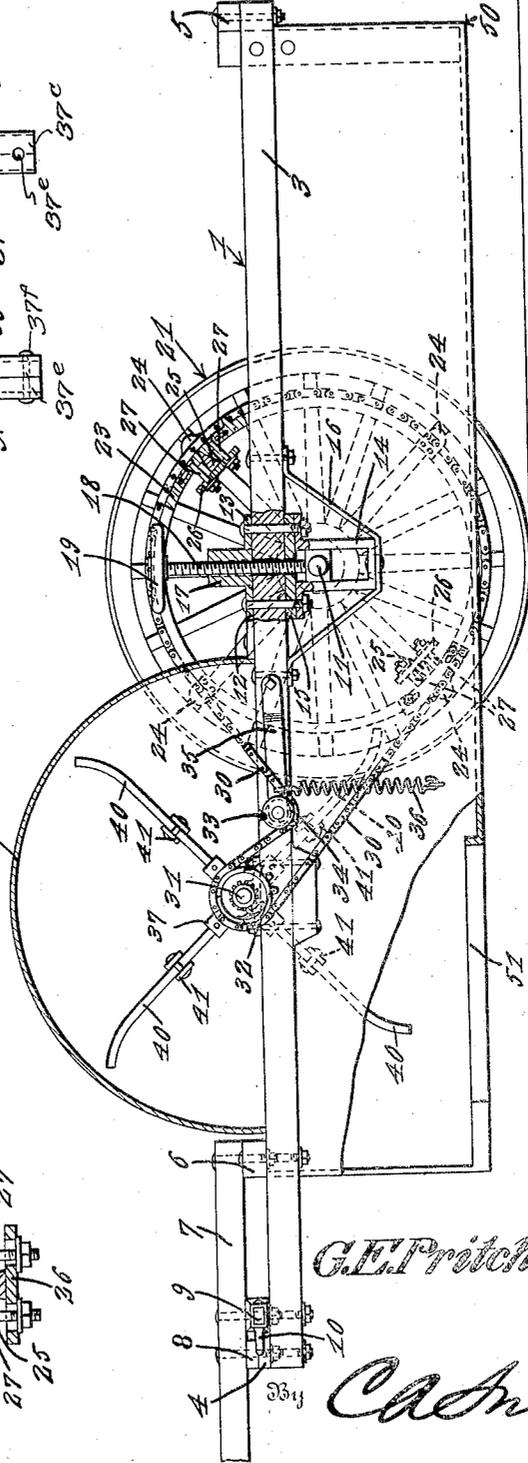


Fig. 1.



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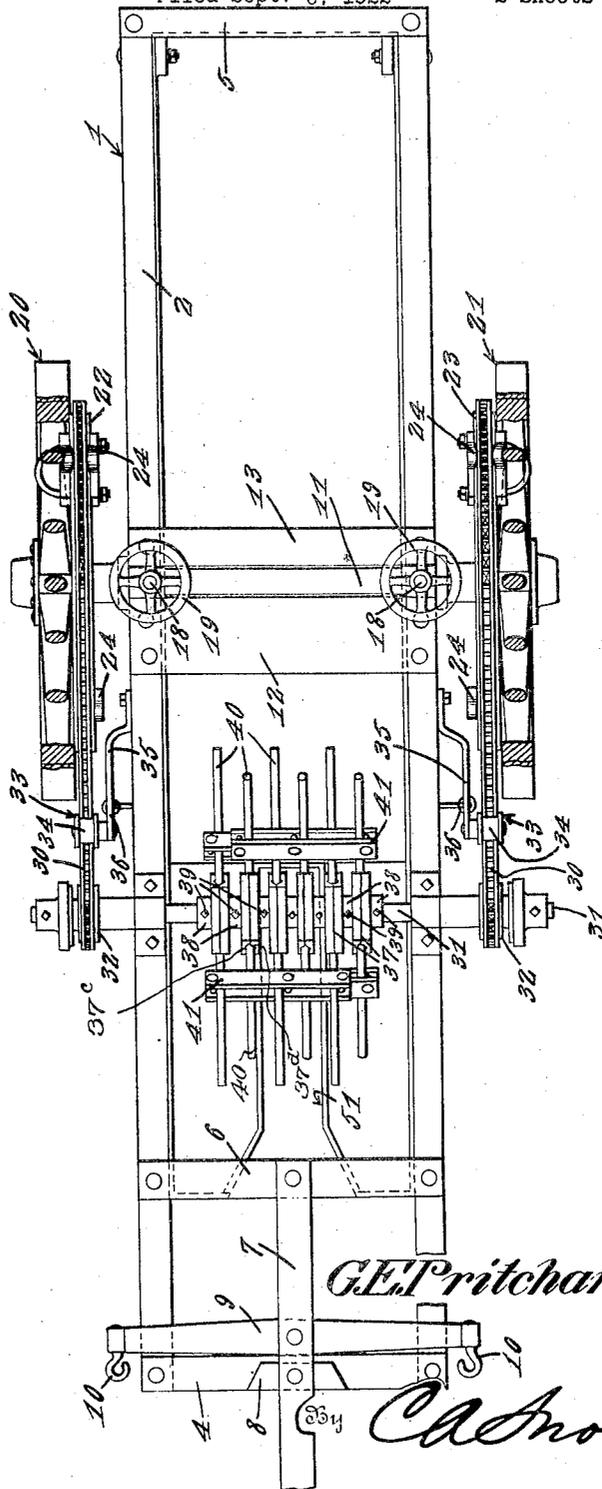
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2 Sheets-Sheet 2

Fig. 2.



UNITED STATES PATENT OFFICE.

GEORGE EDWARD PRITCHARD, OF ELIZABETH CITY, NORTH CAROLINA.

BEAN HARVESTER.

Application filed September 6, 1922. Serial No. 586,472.

To all whom it may concern:

Be it known that I, GEORGE E. PRITCHARD, a citizen of the United States, residing at Elizabeth City, in the county of Pasquotank and State of North Carolina, have invented a new and useful Bean Harvester, of which the following is a specification.

This invention relates to harvesters and more particularly to bean harvesters.

The primary object of the invention is to provide a machine of this character in which the body may be easily raised or lowered at the will of the user and held in adjusted position to adapt the machine for use with either flat rows or those ridged extra high.

Another object is to provide such a machine equipped with an adjustable sprocket adapted to be enlarged to compensate for wear in the chain thereby greatly prolonging the life of the chain.

Another object is to provide an arm casting for the thrashing fingers so constructed that as many fingers as are needed may be bolted in a union and held rigid in one position so that all set screws hold together.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:—

Figure 1 represents a side elevation with parts broken out and in section of a bean harvester embodying this invention.

Fig. 2 is a top plan view thereof with parts broken out and in section.

Fig. 3 is a detail side elevation on an enlarged scale showing the device for enlarging the sprocket.

Fig. 4 is a detail side elevation of one section of the hub casting, and

Fig. 5 is a face view thereof.

In the embodiment illustrated, the harvester constituting this invention comprises a body supporting frame 1 here shown rectangular in form and composed of side bars 2 and 3 connected at their front and rear ends by cross bars 4 and 5 respectively.

A tongue supporting cross bar 6 is spaced inwardly from the bar 4 and secured at its

ends to side bars 2 and 3. A tongue 7 is bolted at its rear end to the cross bar 6 and to a block 8 carried by the front cross bar 4. A double tree 9 is pivotally mounted on the tongue 7, in rear of the block 8 and is equipped at its opposite ends with hooks 10 for the connection of single trees not shown.

An axle 11 supports the body-carrying frame 1 intermediate its ends and said frame is adapted for vertical adjustment relative to the axle being guided by cross bars 12 and 13. Hangers 14 depend from the side bars 2 and 3 being bolted to the lower faces thereof as is shown clearly in Fig. 1 with plates as 15 positioned between said hangers and the cross bars. Truncated V-shaped brackets 16 support the hangers 14. Strap nuts as 17 are secured to the upper faces of the side bars 2 and 3 by the same bolts which connect the hangers therewith.

Screw threaded rods 18 are connected with the axle 11 and have threaded engagement with the nuts 17 being provided at their upper ends with hand wheels 19 whereby the rods may be operated for raising and lowering the frame 7 relatively to the axle to vary the position of the body and the parts carried therein in relation to the ground. The rods 18 bear down on the axle and prevent wear on the threads by the trembling motion of the axle.

Driving wheels 20 and 21 are mounted on the axle 11 and carry on their inner faces sprocket gears 22 and 23 which are exactly alike in construction and hence one only will be described in detail.

Each of these sprockets is provided with a plurality of chain retaining lugs 24 carried by the outer edge of the sprocket wheel. These wheels 22 and 23 are each made in two adjustably connected sections, preferably with wedge-shaped spreaders 25 adapted to be inserted between the meeting ends of the sections for increasing the size of the sprocket to compensate for wear in the chain 30 which operates thereover. Each wedge-shaped spreader 25 is carried by a yoke or other plate 26 mounted on transversely spaced bolts 27 which when tightened up will operate to force the spreader between the section ends of the sprocket and correspondingly increase the size thereof. The sprocket sections are each equipped with a tooth or group of teeth, those of one being diametrically opposite those on the other

to maintain the teeth the same distance apart when the sprocket sections are adjusted. The sprocket wheels may be secured to the spokes of wheels 20 and 21 by any suitable means.

A shaft 31 is mounted in suitable bearings on the side bars 2 and 3 and supports between said bars the thrashing fingers 40. This shaft 31 projects at its opposite ends beyond the side bars 2 and 3 and has loosely mounted thereon small sprocket gears 32 around which pass the chains 30 which operate over the sprockets 22 and 23 carried by the guide wheels. The sprockets 32 ratchet backward when turning around and have pawls to engage ratchet teeth when going forward.

Each of the chains 30 is equipped with a tightener 33. These tighteners are exactly alike and each comprises a roller 34 carried at one end of a pivotally mounted arm 35 supported on the outer face of one of the side bars. This roller 34 bears on the upper stretch of the chain 30 as is shown clearly in Figs. 1 and 2 and is held yieldably engaged therewith by coiled springs as 36, said springs being secured at one end to the free ends of the roller carrying arms and at their other ends to the body 50 of the machine (see Fig. 1).

A plurality of finger carrying castings 37 are detachably mounted on the shaft 31, being held in spaced relation by hub members 38 which are secured to the shaft by set screw 39. Each of the castings 37 is constructed as shown in Figs. 4 and 5 of two arms 37^a and 37^b arranged in the form of a Greek cross with the hub portions 38 of the arms cast integral, said arms having finger receiving seats 37^c and 37^d facing in opposite directions so that the arms of one casting 37 cooperate with those of the adjacent casting to clamp the fingers 40 between them and the finger securing bolts, not shown, which pass through the apertures 37^e also operate to hold adjacent casting together. It will thus be seen that the castings 37 are bolted together so that there can be no slipping of the castings without breakage of these bolts and the set screws 39 operate to hold the castings to the shaft 31. It will thus be seen that a reel so constructed may be made in a union of any desired length. The fingers 40 of the respective castings are secured together by pairs of cross bars 41, the bars of each pair being clampingly connected with the fingers secured between them.

From the above description it will be obvious that any desired number of fingers may be mounted on the shaft 31 in the manner above described and that the fingers carried by the respective castings are bolted together to form a unitary structure whereby slipping of the fingers or of the castings is prevented.

The gist of this invention resides in the raising and lowering mechanism for the frame 7; in the adjustable sprocket for prolonging the life of the chain, and in the peculiar construction and mounting of the thrashing fingers whereby any desired number may be used and held rigidly when assembled against all possibility of separation or slipping.

The body 50 depends from the frame 1 and has a flanged opening 51 in the front portion of the bottom thereof through which the vines and stalks of the beans pass the beans being raked off by the thrashing fingers 40 and conveyed backwardly into the body.

A hood 52 is arranged over the thrashing fingers as shown clearly in Fig. 1 to protect them and to prevent the beans from being thrown out by the fingers.

From the above description it will be obvious that when this machine is drawn over the ground the driving wheels straddle the rows of beans and their rotation will through the chains 30 and the sprockets over which said chains pass turn shaft 31 causing the fingers 40 to rake in the beans in a well known manner.

I claim:—

1. In a bean harvester, thrashing mechanism including a shaft having a plurality of removable castings mounted thereon adjacent each other, fingers carried by said castings, and arranged in different planes and means for clamping the fingers of the adjacent castings rigidly together.

2. A reel for bean harvesters comprising a rotatable shaft having a plurality of finger carrying castings mounted thereon, each casting being composed of a hub having arms radiating therefrom, in different planes some of said arms having finger receiving grooves on one face and some having grooves on the opposed face whereby when the castings are assembled on said shaft the grooves in the arms of adjacent castings will register to form finger housings, fingers mounted in said housings and bolts extending through said fingers and the complementary housing forming arms whereby the castings are connected to form a unitary structure.

3. A reel for bean harvesters comprising a rotatable shaft having a plurality of finger carrying castings mounted thereon, said castings having radiating arms, some of said arms having longitudinally extending grooves in one face and some having them in the opposed faces whereby when the castings are assembled on said shaft the grooves in the arms of adjacent castings will register to form finger housings, and support the castings in different planes each casting having arms to cooperate with those of the casting on one side of it and the other arms to cooperate with the arms of the casting

on the other side of it, fingers mounted in said housings, and bolts extending through the fingers and the arms forming the housings therefor whereby the castings are connected to form a unitary structure.

4. A reel for bean harvesters comprising a rotatable shaft having a plurality of finger carrying castings fixed thereto, each casting being composed of a hub having pairs of arms radiating therefrom, the arms of each pair alining and having longitudinally extending grooves in the same face thereof, the grooves in one pair of arms being in the face opposite to those in the

other pair of arms, and in different planes, said arms having bolt receiving apertures, the grooves in the arms of one casting registering with those of adjacent castings to form finger receiving housings, fingers mounted in said housings, and bolts extending through said fingers and the apertures in said arms whereby adjacent castings are connected to form a unitary structure.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

GEORGE EDWARD PRITCHARD.