

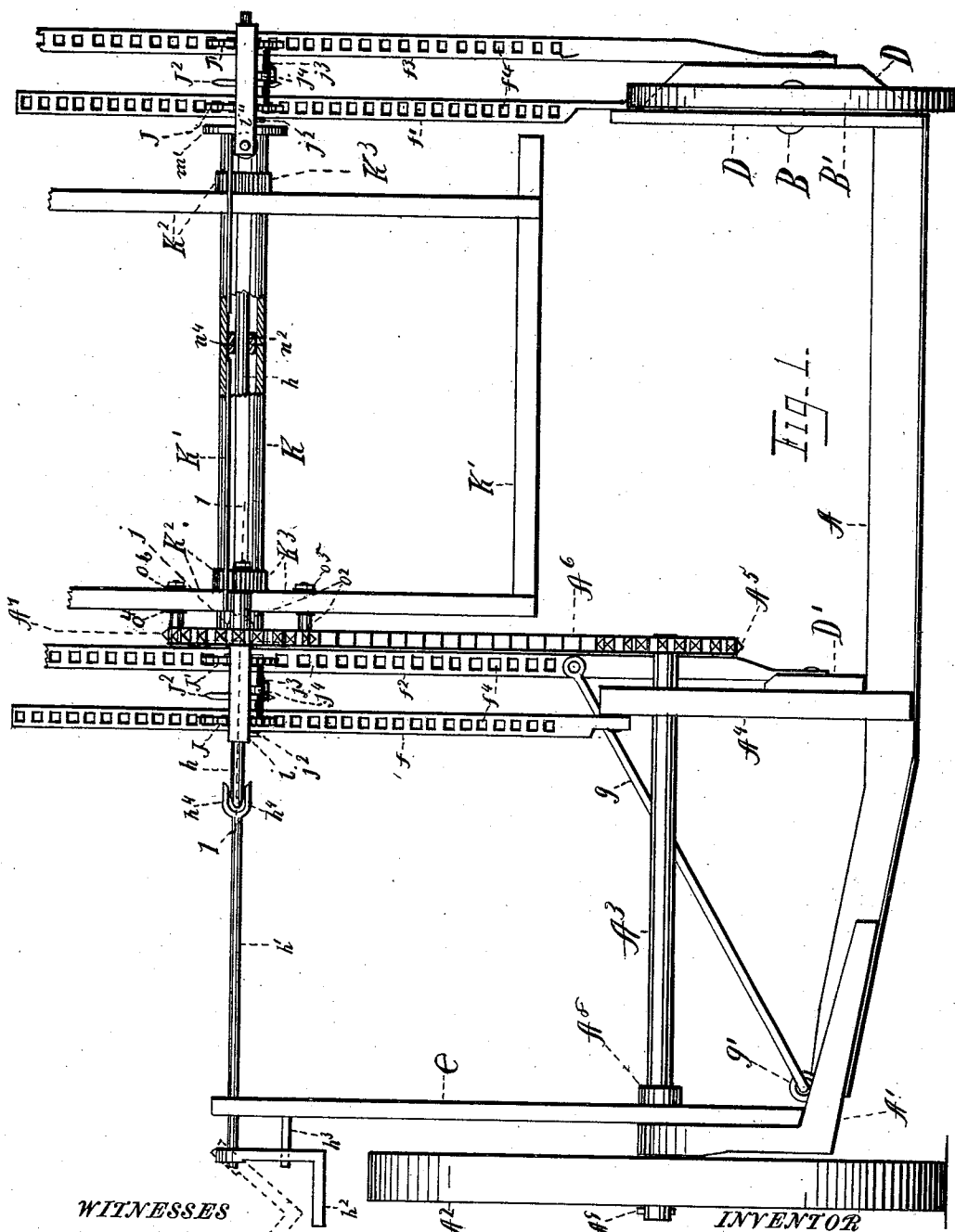
(No Model.)

2 Sheets—Sheet 1.

G. SCHUBERT.
MECHANISM FOR HARVESTER REELS.

No. 479,848.

Patented Aug. 2, 1892.



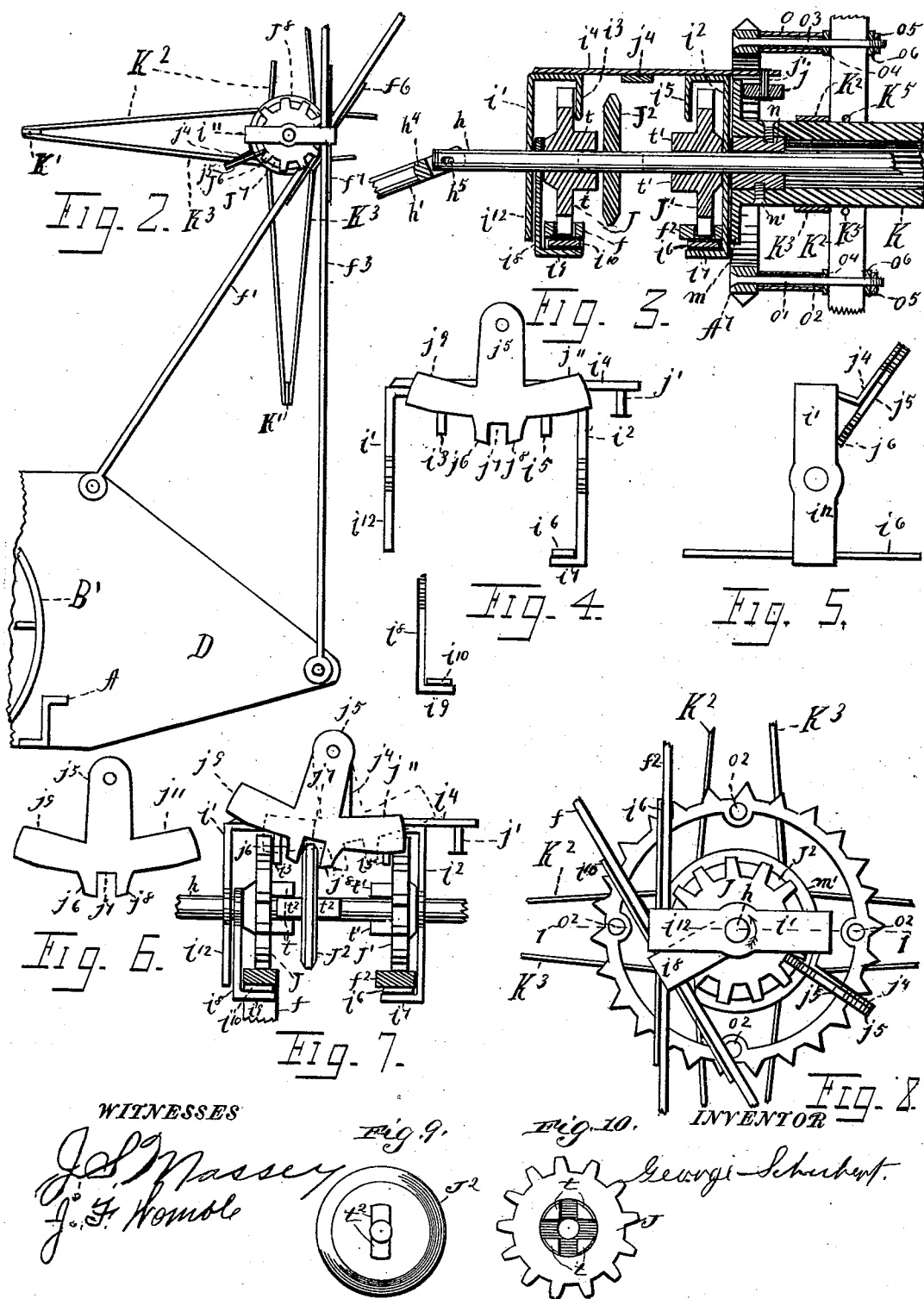
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

GEORGE SCHUBERT, OF WALNUT, TEXAS.

MECHANISM FOR HARVESTER-REELS.

SPECIFICATION forming part of Letters Patent No. 479,848, dated August 2, 1892.

Application filed August 24, 1891. Serial No. 403,567. (No model.)

To all whom it may concern:

Be it known that I, GEORGE SCHUBERT, a citizen of the United States, residing at Walnut, in the county of Bosque and State of Texas, have invented a new and useful Mechanism for Harvester-Reels, of which the following is a specification.

This invention relates to mechanism for harvester-reels by which the reel can be moved to any desired position and by which, also, to support the reel after it has been moved into the desired position.

In the drawings, Figure 1 is an elevation of the mechanism as seen from the rear of the machine. Fig. 2 is a view of the reel from the grain end of the machine. Fig. 3 is an enlarged longitudinal horizontal sectional view on line 1 1, Figs. 1 and 8. Fig. 4 is a side view of the frame or housing as seen from the under side with the locking-dog in position. Fig. 5 is an end view of same. Fig. 6 is a detail view of the locking-dog. Fig. 7 is the same as Fig. 4 with the gearing in position. Fig. 8 is an end view, looking grainward, with the chain removed. Figs. 9 and 10 are views of the clutches.

A designates the finger-bar, made in the ordinary Z form, secured with its stubble end to the bracket A', which is anchored on the axle A³.

A² designates the master-wheel, secured to its axle A³ by the pin A⁹. Said axle A³ is journaled with its stubble end in the upper end of the bracket A' and with its grain end in the post A⁴ and is provided with a sprocket-wheel A⁵ on its grain end, provided with a chain A⁶, said wheel A⁵ being located in the same plane with the sprocket-rim A⁷ and at the inner or stubble end of the cutting mechanism.

A⁸ is a collar secured to the axle A³ adjacent the bracket A' to prevent any longitudinal movement of the axle A³. The post A⁴ is secured with its lower end to the finger-bar A a proper distance from the bracket A' in a vertical position and of proper height. To its upper end is pivoted with its lower end the rack-bar f. The rack-bar f' is pivoted to the upper edge of the grain-board D and on line with the pivot of rack-bar f. The rack-bar f³ is pivoted to the outer side of the grain-board near its lower edge and front end, as seen in

Fig. 2, and the rack-bar f² is pivoted to the inner grain-board D' on line with the pivot of the rack-bar f³, so that they may engage with the pinions J and J', respectively, in different planes. The inner grain-board D' is secured to the post A⁴ and projects forward, and the grain-board D is secured to the grain end of the finger-bar A in any well-known manner and is provided with a stud B to receive the grain-wheel B'.

g is a brace pivoted with an eyebolt g' to the bracket A' and with its other end secured to the rack-bar f² at the lower end of its perforations f⁴ and is to prevent any lateral movement of the rack-bar f².

i designates a frame or housing extending over the gearing, formed, preferably, as shown in Figs. 3, 4, 5, and 7, with the bracket i' and i², journaled on the shaft h a proper distance apart and rigidly secured to the bar i⁴. Said bar i⁴ projects beyond the bracket i² toward the reel a proper distance to receive the stud j' to carry the anti-friction roller j.

i³ and i⁵ are inward projections of the brackets i' and i², forming guides for the pinions J and J' or preventing any longitudinal movement of the pinions J and J' in the housing i. The opposite end of the bracket i² is bent stubbleward and provided with a bar i⁶, riveted thereto, to operate on the rear of the rack-bar f².

i⁸ is a bar journaled on the shaft h between the bracket i' and the pinion J, with its lower end bent grainward and having a bar i¹⁰ riveted thereto to operate on the rear of the rack-bar f. The bars i⁶ and i¹⁰ are to hold the housing i and the bar i⁸, respectively, in a right-angle position to the rack-bars f and f², respectively. The end i¹² of the bracket i' is extended to nearly the same length as the bar i⁸ and is to prevent the lower end of the bar i⁸ from bending stubbleward. Said bar i⁸ has an independent movement to that of the housing i on the shaft h, so that the bar i⁸ remains in a right-angle position to the rack-bar f, while the housing i remains in a right-angle position to the rack-bar f², so that the rack-bars f and f², respectively, can be engaged with the pinions J and J', respectively, in different planes. The bar j⁴ is bent as shown and secured to the bar i⁴ near the center of the housing i.

j^5 designates a dog formed as shown and pivoted to the bar j^4 , with the notch j^7 engaging with the periphery of the disk J^2 and with its wings or projections j^9 and j^{11} engaging with the cogs of the pinions J and J' . Said pinions J and J' are clutch-pinions journaled on the shaft h and held in position by the housing i and with their teeth or cogs engaging the rack-bars f and f^2 , respectively. Their inward-projecting hubs t and t' are notched to form clutches of any well-known form.

J^2 is a disk rigidly secured to the shaft h in the housing i , between the pinions J and J' , and is provided with projections t^2 to engage alternately with the notches of the pinions J and J' , and its periphery is beveled to engage the notch j^7 to operate the dog j^5 . The shaft h extends through the housing i , the reel-shaft K , and the housing i^{11} at the grain end of the reel, with its stubble end projecting and provided with an oblong perforation h^5 . The shaft h' is bifurcated and pivoted to the stubble end of shaft h by a pin extending through the perforation h^5 and secured in the prongs h^4 , thus forming a universal joint. The stubble end of the shaft h' is journaled in the post e . The perforation in the post e is made of sufficient size to allow the shaft h' to operate in different planes.

h^3 is a pin secured in the post e below the shaft h' , extending in the passage-way of the crank h^2 . Said crank h^2 is pivoted to the shaft h by a pin, with its perforation of sufficient size to allow the crank to be moved to an angle, as shown in dotted lines in Fig. 1, so as to clear the pin h^3 when so desired. The post e is secured with its lower end to the bracket A' , as shown in Fig. 1.

K designates a hollow reel-shaft, encircling the shaft h and provided with right-angled flanges m and m' on each end, in position to be operated on by the anti-friction roller j , as shown.

n is a bearing secured in the stubble end of the shaft K by the screws n' . A similar bearing is secured in the grain end of the shaft K .

n^2 is a bearing located near the center of the reel-shaft K and secured to said shaft K by the screws n^4 , which is to prevent the shaft h from bending and rubbing on the sides of the reel-shaft K . Said reel-shaft K is journaled on the shaft h by the bearings just described.

K^2 and K^3 are reel-arms secured to the reel-shaft K near each end by the bolt K^5 .

K' are the usual reel-slats, secured to the free ends of the arms K^2 and K^3 .

A^7 designates a sprocket-rim secured to the arms K^2 and K^3 by the bolts o' and o^3 and ferrules o and o^2 . Said ferrules or pipes o and o^2 rest with one end against the rim A^7 and with their other end against the strips o^4 .

o^6 are strips on the opposite side of the arms K^2 and K^3 to support the nuts o^5 . The

bolts o' and o^3 pass through the strips o^4 and o^6 . The ferrules o^2 and o are of proper length to project the sprocket-rim A^7 far enough stubbleward to bring the chain on line with the sprocket-wheel A^5 and adjacent the rack-bar f^2 .

The housing i^{11} at the grain end of the reel is constructed and operated the same as the one just described, and thus need not be described.

The operation is as follows, viz: When the operator desires to elevate the reel, he moves the shaft h' and h grainward, thus moving the disk J^2 in the same direction, disengaging the projections t^2 of the disk J^2 from the pinion J and engaging it with the pinion J' , and disengaging the dog from the pinion J' and engaging it with the pinion J , as shown in dotted lines in Fig. 7. The rack-bar f^2 being secured in position by the brace g and the pinion J' being in engagement with the rack-bar f^2 and held in position in the housing i , it will prevent the housing i from having any grainward or stubbleward movement, and the reel-shaft K being held in position by the anti-friction roller j , operating on the rear of the flange m , and a similar roller operating on the rear of the flange m' will also hold the housing i^{11} in position. Thus it will be seen that both ends of the reel are operated simultaneously. After the shaft h is thus shifted grainward it is rotated in the direction as shown by arrow in Fig. 8 by means of the shaft h' and crank h^2 until the reel is elevated to the desired position. When it is desired to pitch the reel forward, the shaft h is drawn stubbleward until the disk J^2 is in engagement with the pinion J , when the dog also locks the pinion J' and unlocks the pinion J , when the shaft h is again rotated in the direction as shown by arrow in Fig. 8 until the reel is in the desired position. When it is desired to lower the reel or draw it toward the rear, the rotation of the shaft h is reversed. The dog j^5 is so constructed as to engage with the pinions J and J' just before the clutch or projections t^2 disengage the pinions. When the disk J^2 is near the center between the pinions J and J' , the dog j^5 is in engagement with the cogs of both pinions J and J' , thus locking both pinions in place. After the reel has been moved in the desired position the disk J^2 may be drawn to near the center between the pinions J and J' , or it can be left in engagement with either pinion J or J' , as the crank h^2 will come against the pin h^3 and prevent the shaft from any rotation. A^6 is the reel-chain, extending over the sprocket-wheel A^5 and over the sprocket-rim A^7 to operate the reel.

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

1. In a reel, rack-bars pivoted to the harvester-frame and extending with their upper ends through a frame or housing pivoted on the shaft h , pinions journaled on the shaft h in the housing, adapted to engage with the

rack-bars, a dog j^5 , pivoted to the housing and adapted to engage with the pinions, a disk secured to the shaft h between the pinions and provided with projections t^2 to engage with corresponding notches on the pinions and with its periphery engaging the dog j^5 , and means to rotate the shaft h , substantially as described.

2. In a reel, rack-bars pivoted to the harvester-frame and extending with their upper ends through a frame or housing journaled on the shaft h , pinions J and J' , journaled on the shaft h in the housing, adapted to engage with the rack-bars, a dog j^5 , pivoted to the housing and adapted to engage with the pinions J and J' , a disk secured to the shaft h between the pinions J and J' and provided with projections t^2 to engage with corresponding notches on the pinions J and J' and with its periphery engaging the dog j^5 , the rack-bar f^2 , secured in position by the brace g , lugs i^3 and i^5 in the housing, and a shaft h' , connected to the shaft h by a universal coupling and provided with a crank, as shown, and for the purpose described.

3. In a reel, rack-bars pivoted to the harvester-frame and extending with their upper ends through a frame or housing journaled on the shaft h , a bracket i^8 , journaled on the shaft h , with its lower end bent at an angle, and a bar i^{10} secured thereto, the bracket i^2 turned at a right angle i^7 and a bar i^6 secured thereto, pinions J and J' , journaled on the shaft h in the housing, adapted to engage with the rack-bars, a disk secured to the shaft h between the pinions J and J' and provided with projections t^2 to engage with corresponding notches on the pinions J and J' and with its periphery engaging the dog j^5 , the rack-bar f^2 , secured in position by the brace g , lugs i^3 and i^5 in the housing, a dog j^5 , pivoted to the housing, adapted to engage with its ends with

one or both of the pinions J and J' , and means to rotate the shaft h , as shown, and for the purpose described.

4. In a reel, a housing constructed of the brackets i^7 and i^3 , journaled on the shaft h and having the projections i^3 and i^5 and rigidly secured to a bar i^4 a proper distance apart, the end i^{12} of the bracket i^7 projecting beyond the shaft, as shown, the lower end of the bracket i^3 provided with a bar i^6 , a bracket i^8 , journaled on the shaft h with its lower end provided with a bar i^{10} , a bracket j^4 , secured to the bar i^4 , and a dog j^5 , pivoted to the bracket j^4 in position to engage or disengage with the pinions J and J' , as shown, and for the purpose described.

5. In a reel, the rack-bars, the shaft h , extending through the housings i and i^{11} , pinions having clutch-faces mounted loosely on the said shaft and engaging the said rack-bars, the dog pivoted to the housing between the pinions, and a disk fixed to the shaft between the pinions, said disk engaging with the dog and having a clutch-face on each side, engaging the clutch-faces on the pinions, substantially for the purpose described.

6. In a reel, a shaft h , extending through the housings i and i^{11} , a support for said housings, a hollow reel-shaft K , provided with flanges m and m' on each end, the housing provided with a bar projecting over said flanges m and m' and provided with rollers to operate on the rear of the flanges, and bearings secured in the hollow reel-shaft and journaled on the shaft h , substantially as shown, and for the purpose described.

Signed in presence of two witnesses.

GEORGE SCHUBERT.

Witnesses:

J. S. MASSEY,

J. F. WOMBLE.