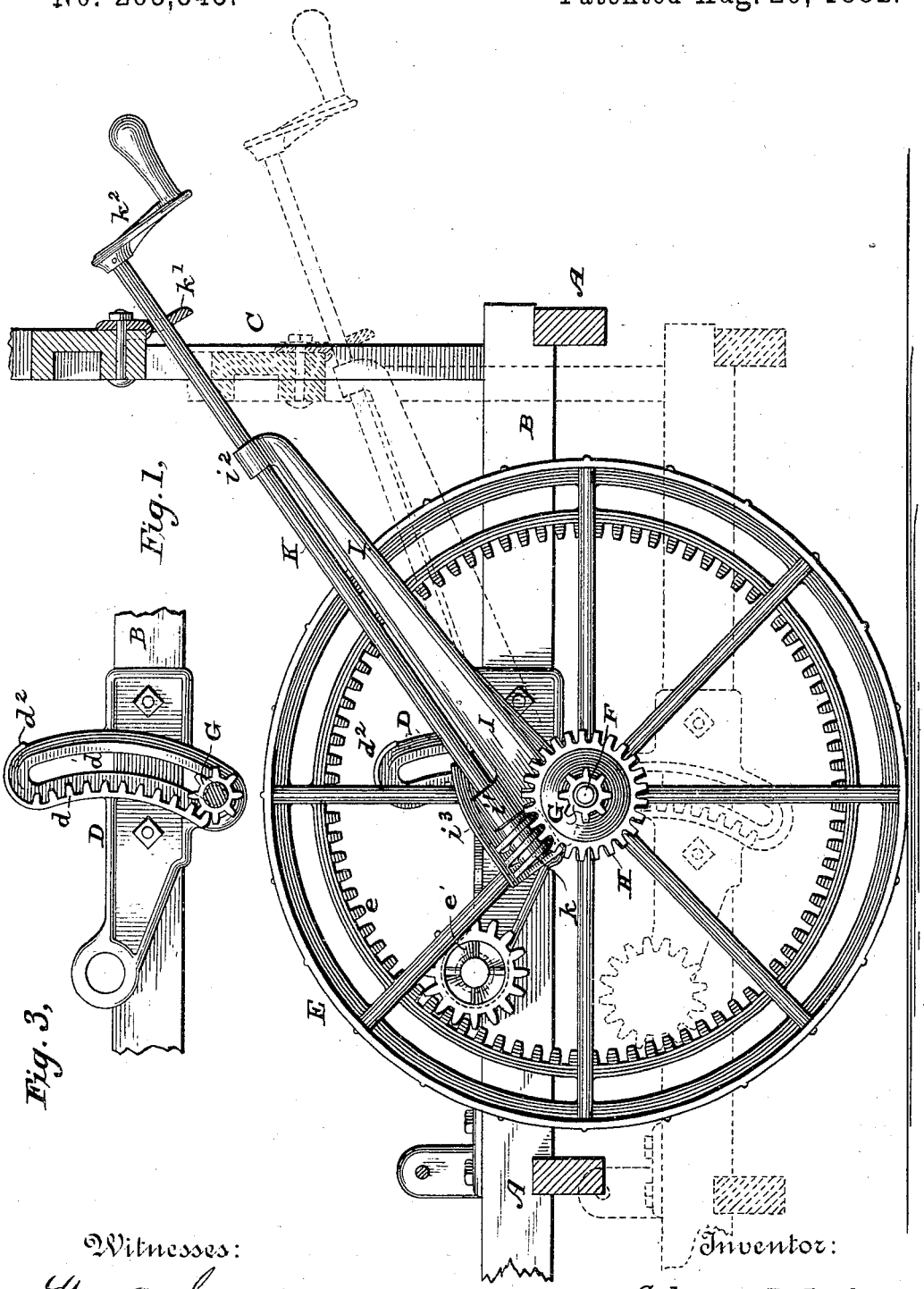
(No Model.) 2 Sheets—Sheet 1.

S. D. LOCKE.

HARVESTER.

No. 263,545. Patented Aug. 29, 1882.



Witnesses:

Wm. A. Skinkle.

Geo. W. Breck.

Inventor:

Sylvanus D. Locke.

by his Attorneys,

Parkinson & Parkinson

(No Model.) 2 Sheets—Sheet 2.

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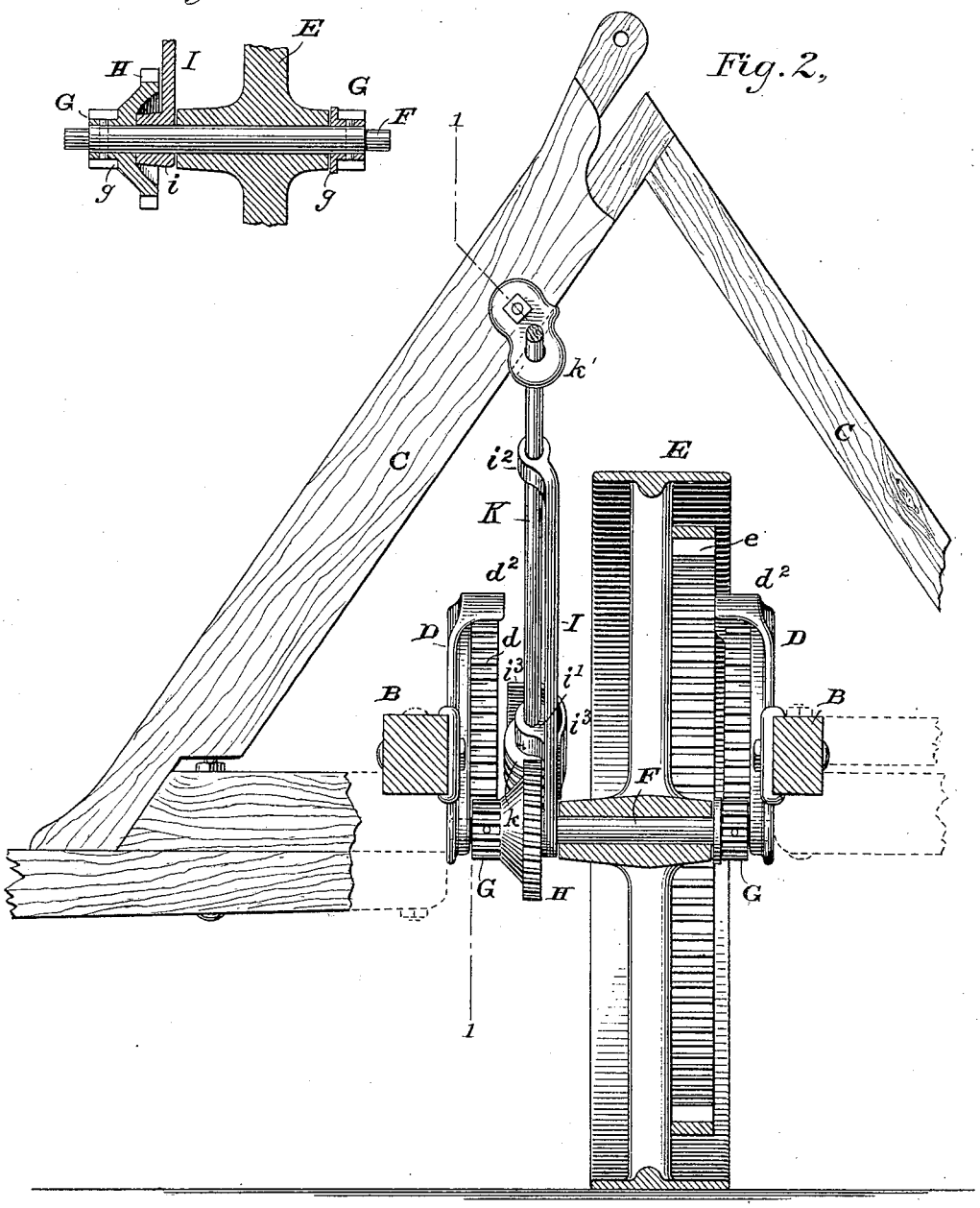
Fig. 4,

Fig. 2,



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UNITED STATES PATENT OFFICE.

SYLVANUS D. LOCKE, OF HOOSICK FALLS, NEW YORK.

HARVESTER.

SPECIFICATION forming part of Letters Patent No. 263,545, dated August 29, 1882.

Application filed May 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, SYLVANUS D. LOCKE, of Hoosick Falls, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Harvesters, of which the following is a specification.

My invention relates to the mechanism for adjusting the main wheel in that type of harvesters commonly known as the "Marsh," wherein said wheel is arranged in the space beneath an elevator, or in other harvesters where the wheel is capable of being similarly supported.

The most approved mode of adjusting this wheel heretofore has been to mount it loosely upon a short axle, carrying near its ends fast pinions, which engage with the teeth of segment-rack standards fixed to the side pieces of the wheel-frame, and having their racks described upon a curve concentric with the axis of the prime pinion. By rotating this axle and then dogging or otherwise stopping it in position the harvester-frame is lifted or depressed and held in the desired adjustment.

In the present instance I mount the wheel in said manner—that is, it turns loosely upon a short axle having fast pinions near its ends which take into segment-rack standards upon the side pieces of the wheel-frame, and are steadied and held in engagement by the extreme projecting ends of the axle moving in guideways in said standards. The teeth of the pinions, moreover, are not cut entirely through, although they may be if other provisions are adopted; but a web is left at the inner side of each which abuts against the contiguous face of the corresponding rack to hold the axle against endwise displacement. Thus far the parts are old and well known.

To the axle, between the main wheel and one of the pinions, I affix a worm-wheel, into which meshes a worm or endless screw upon one end of a rod or shaft suitably supported in bearings sleeved to the axle, and at the other end provided with a crank or hand-wheel, and confined and guided in a loose-fitting eye-bracket from the frame-work. For compactness and stability I form the worm-wheel as a part of, and a flaring or dish-shaped offset from, the adjacent pinion, and in the recess thus obtained prolong the sleeve of the bearing-block or bracket in which the rod or shaft is seated. This bearing-block or bracket I cast or provide with a shield, which covers the worm, and, in a measure, the worm-wheel, and guards and protects them from mud and other substances. Mud-shields are also formed upon or affixed to the segment-standards in such manner as to protect the racks and pinions.

In the drawings, Figure 1 is a side elevation, partly in section, of a main wheel and wheel-frame, and a portion of the elevator-frame with my adjusting devices. Fig. 2 is a rear elevation thereof, also partly in section; Fig. 3, a side elevation of one of the segment-standards, formed with a bearing for the prime-pinion shaft; and Fig. 4, a detail of the axle and the parts immediately mounted thereon.

A represents the main longitudinal sills of the harvester-frame; B, the transverse bars forming the side pieces of the wheel-frame, and C the rear struts of the elevator-frame.

To the bars B are bolted the segment-standards D, having racks *d* and guideways *d'* for the extreme ends of the axle, and otherwise of the usual construction, except that at the crown they are provided with mud-shields d^2, projecting out beyond the racks, so as to overhang, cover, and protect them and the pinions traveling therein.

E is the main wheel, mounted loosely upon the short axle F, and driving, by means of the internal gear, *e*, the prime pinion *e'*, which conveys motion to the other moving parts of the harvester. Near the ends of the axle are keyed or riveted pinions G, the teeth of which are preferably cut only partially through from the outer side toward the inner, thus leaving a web, *g*, which abuts against the contiguous surface of the racks in which the pinions travel and prevents endwise motion of the axle. The extreme ends of the axle are turned down, as at *f*, to fit into the guideways in the segment-standards and hold the pinions in mesh with the racks. The shoulders thus formed in the axle may, if desired, take up the entire endwise thrust by their abutment against the body of the standards, enabling ordinary pinions to be used, or may re-enforce the action of the webs in those I have described.

A worm-wheel, H, either separate or cast with one of the pinions, is made fast to the axle between the main wheel and one of the segment-standards, and inside that pinion which it adjoins, or of the body of which it forms an integral part. Preferably, both for economy of structure and compactness and strength of build, it is cast solid with said pinion, and dishes or flares therefrom toward the main wheel. Within the recess thus gained, and extending from the inner face of the pinion to the hub of the main wheel, steadying the latter against lateral play, and being steadied itself by the length of bearing thus afforded, is fitted the sleeve or hub *i* of a bracket-arm, I, having two bearing-boxes, i' i^2—the former near to the axle and worm-wheel, and the latter at a considerable distance therefrom. These boxes are arranged in such line that the inner end of a rod or shaft, K, mounted therein will be brought directly over the worm-wheel, and the threads of an endless screw or worm, *k*, pinned fast upon said end will engage with the teeth of said wheel. Near its outer end the rod K passes loosely through an eye in a bracket or hanger, k', depending from the inner elevator-strut, or elsewhere attached, according to the location of the seat, to bring it within reach of the driver, and beyond this is fitted with a crank, k^2, or a hand-wheel, whereby it may be turned.

A shield, i^3, cast as a part of or otherwise secured to the bracket-arm, rises above and overhangs, so as to cover and protect the worm and adjacent bearing-box and incidentally the worm-wheel, thus keeping said parts clean and sheltered from mud or débris.

Whenever the rod or shaft is rotated the axle will be turned through the medium of worm and worm-wheel, and its pinions will be driven up or down the racks, lowering or raising the harvester-frame, as the case may be. In such movement the shaft will be permitted the necessary changes of angle and endwise play to accommodate itself to the varying relations of the axle and the frame by its loose-fitting guide-eye. When the shaft is at rest the frictional contact between worm and worm-wheel will be sufficient to prevent the axle from turning, thus holding the harvester-frame in its adjusted position.

I claim—

1. The combination of the main wheel, its axle, pinions fast to the ends of said axle, the segment-standards upon the wheel-frame, having racks in which said pinions travel, the worm-wheel, also fast to the axle, the worm or endless screw meshing therewith, the crank-rod which carries said worm, bearings sleeved to the axle to support said rod, and the guide-eye fitting loosely the outer end of the rod and supporting it in position to be reached by the driver in his seat.

2. In combination with the worm-wheel fast to the axle, the worm meshing therewith, the crank-rod which carries and turns said worm, and the long bracket-arm, sleeved to the axle and having bearing-boxes for the crank-rod, one near to the axle and the other at a distance therefrom, to insure the rod against binding.

3. In combination with the worm-wheel fast to the axle, and the worm and crank-rod by which it is operated, the guard or shield covering said worm and wheel to protect them from mud or débris.

4. In combination with the worm-wheel fast to the axle, and the worm and crank-rod by which it is operated, the bracket-arm sleeved to the axle, provided with bearing-boxes for the crank-rod, and with a guard or shield covering and protecting the worm above the worm-wheel.

5. In combination with the main wheel and with the axle and its fast pinions traveling in racks upon the frame, the dished worm-wheel flaring inwardly toward the hub of the main wheel, and a bracket-arm provided with an elongated sleeve or hub fitting over the axle in the recess between the hub of the worm-wheel and the hub of the main wheel, and carrying a bearing box or boxes for the crank-rod.

6. The worm-wheel formed integral with and as a dished or flaring offset from one of the axle-pinions, as and for the purpose described.

7. The bracket-arm having cast integral therewith a sleeve to take over the axle, a bearing box or boxes for the crank-rod, and a shield to cover and protect the worm and worm-wheel.

SYLVANUS D. LOCKE.

Witnesses:
J. RUSSELL PARSONS,
WM. M. ARCHIBALD.