J. H. WHITNEY.

HARVESTER-RAKE.

No. 169,936. Patented Nov. 16, 1875.

Fig. 1

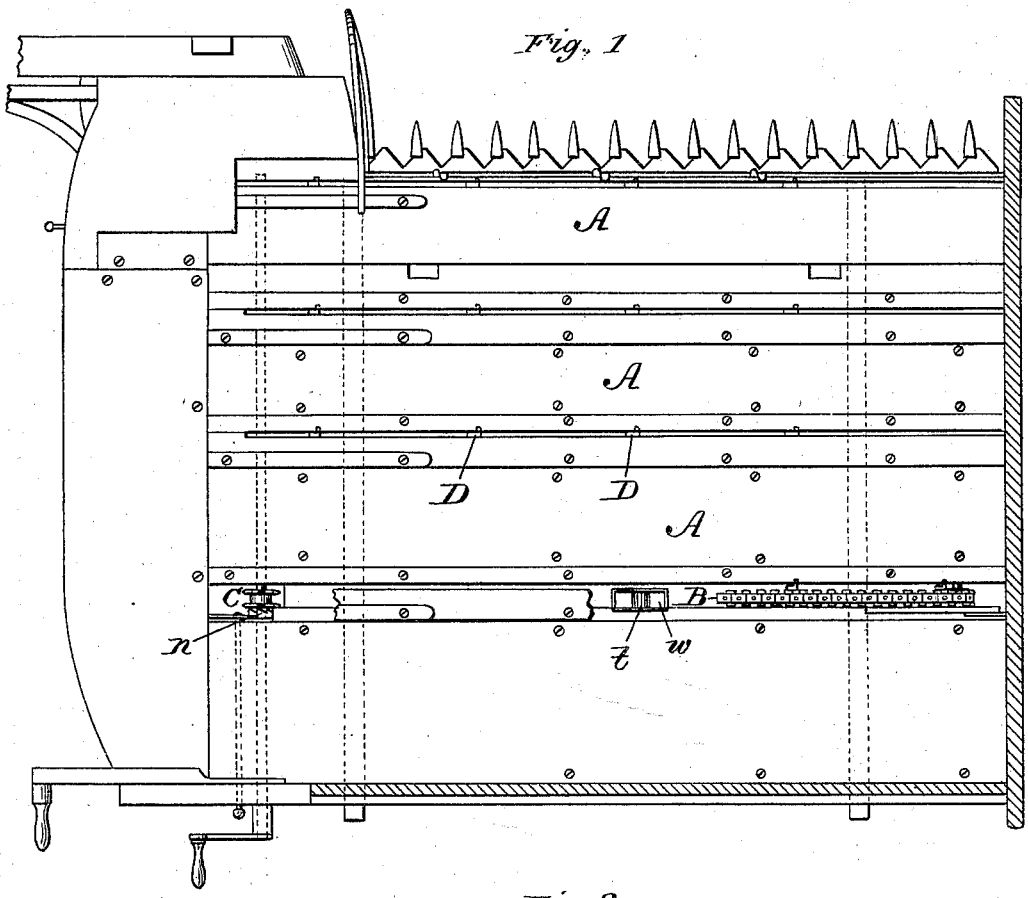


Fig. 2.

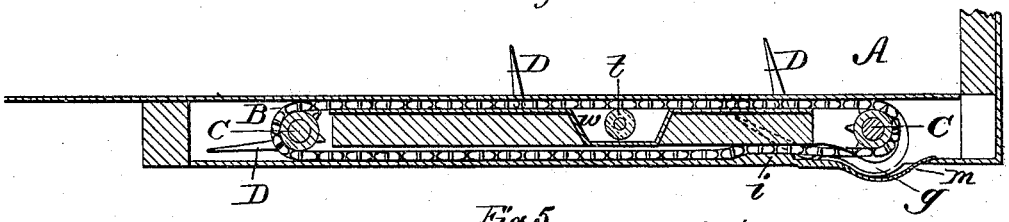


Fig. 3.

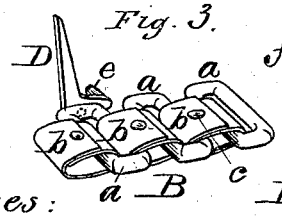


Fig. 5.

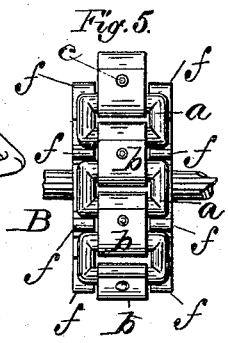
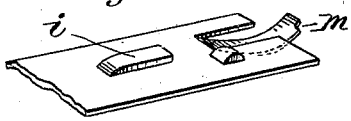


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN H. WHITNEY, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE SUMNER & WHITNEY MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN HARVESTER-RAKES.

Specification forming part of Letters Patent No. **169,936**, dated November 16, 1875; application filed June 7, 1875.

CASE C.

To all whom it may concern:

Be it known that I, JOHN H. WHITNEY, of St. Louis, in the county of St. Louis and State of Missouri, have invented certain Improvements in Harvester-Rakes, of which the following is a specification:

My invention relates to those rakes or conveyers which consist of parallel endless chains provided with pivoted folding fingers; and consists in the employment of a stationary cam under the chain to facilitate the tripping of the fingers, in devices for lubricating the chains, in so arranging the rear chain that it may be thrown out of action at will, and in other features hereinafter explained.

Figure 1 represents a top plan view of a harvester-platform provided with my improvements; Fig. 2, a longitudinal vertical section of the same; Fig. 3, a perspective view of a short length of my chain; Fig. 4, a perspective view of one of the bottom plates or rails, showing the cam and the guide thereon. Fig. 5, an edge view of the chain and pulley, showing the manner in which the latter engages with the former.

A represents a flat rectangular platform; B B, parallel endless chains mounted lengthwise in the body of the platform at proper distances apart; C C, wheels in the ends of the platform carrying the chains; D, the fingers, pivoted to the chains at regular intervals, and arranged to stand above the platform, and carry the grain as they pass forward, and to fold down against the chain as they pass back within the platform.

In their general arrangement and operation the above-mentioned parts resemble those now in use; but, as hereinafter explained, they differ from the ordinary devices in various details. The chains B are each composed of a series of very short wide links, *a*, of cast metal, united by intermediate links *b* of wrought metal, the links *b* consisting each of a thin metal plate inserted through the two cast-links, folded down in shape, and secured by a rivet, *c*, uniting its two ends, as clearly shown in Fig. 3. The wheels *c*, instead of being provided, as usual, with teeth to enter the links of the chain, are each provided with two rows of teeth, *f*, one on each edge, arranged in such manner as to enter between and bear upon the ends of the cast-links *a*, as clearly shown in Fig. 4.

It will be observed that there is no wear of teeth upon the ends of the wrought-links, as usual, nor upon the inner sides of the other links. As the entire wear and strain of the wheels upon the chain are received on the outside of the cast-links, and are distributed between the two ends thereof, the chains are driven more easily, run more smoothly, and wear longer than those arranged as usual. The wheels C, on which the chains travel, are mounted on two parallel shafts arranged in the ends of the platform, as shown. The grain-carrying fingers D are made of an L-form, and are each pivoted at the angle or corner to the side of the chain, and provided at one end with a stud, *e*, which travels in a groove, *g*, the latter being made of such form that, as the chain carries the teeth along on top, they are retained in an upright position, while on the return they are folded closely against the under side of the chain, and carried back within the platform, as shown in Fig. 2. The groove *g* at the outer end of the machine, where it is required to turn the fingers up, describes an eccentric path around the axis of the wheel, with a slight descent as it approaches the wheel, as shown in Fig. 2.

In order to cause the studs on the teeth to ride easily into the descending portion of the groove, and to render the motion of the teeth smooth and positive, I place a raised cam or bolster, *i*, under each chain, near the outer wheel C, as clearly shown in Fig. 2. As the chain rides over this cam the fingers are thrown up as in dotted lines in Fig. 2, and caused to pass forward smoothly and easily, their studs entering and passing through the curved portion of the groove without difficulty.

For the purpose of retaining the chain in place snugly against the wheel, I provide a guard or shield, *m*, which extends partially around the under side of the wheel outside of the chain, as shown in Figs. 2 and 4. The

chains are all driven by the single shaft carrying the several driving-wheels C, as shown.

The wheel which drives the rear chain is mounted loosely on the shaft, and driven by a clutch, *n*, arranged to slide on the shaft, so that when the machine is cutting short grain, which will not extend back to the rear chain, the latter may be thrown out of action, in order to save the power required to drive it, and to prevent unnecessary wear upon it. The clutch *n* may be constructed and operated in any suitable manner. When considered desirable, two or more of the chains may be arranged to be thrown out of action.

For the purpose of lubricating the chains, I mount, under the upper side of each one, a roller, *t*, supported by bearings in the platform, and located in an oil cup or reservoir, *w*, as shown in Figs. 1 and 2. The roller being kept in motion by the passage of the chain over it feeds the oil from the cup to the chain, which is thus kept constantly and thoroughly lubricated.

It is obvious that the arrangement allowing the bear-chain to be thrown out of action is also applicable in those machines in which belts, instead of chains, are employed as conveyers.

Having described my invention, what I claim is—

1. In combination with the wheel C and the chain B, provided with the pivoted fingers, having their ends mounted in the grooves *g*, the shield *m*, arranged as shown, for the purpose of holding the chain against the wheel and insuring the proper motion of the fingers, as shown and described.

2. In combination with the chain, provided with the pivoted fingers engaging in the groove, as shown, the stationary cam or bolster *i* below the chain, as and for the purpose described.

3. In a grain-harvester, the combination of parallel conveyer belts or chains, driven from a common source, and arranged in such manner that the rear one of the series may be thrown out of action at will, while the others remain in action.

4. In combination with the chain *c*, the oil-cup *w*, and roller *t*.

JOHN H. WHITNEY.

Witnesses:
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