W. E. HEWITT.

CARRIER AND SCREENING MEANS FOR POTATO DIGGERS.

APPLICATION FILED JULY 27, 1910.

1,052,249.

Patented Feb. 4, 1913

4 SHEETS—SHEET 1.

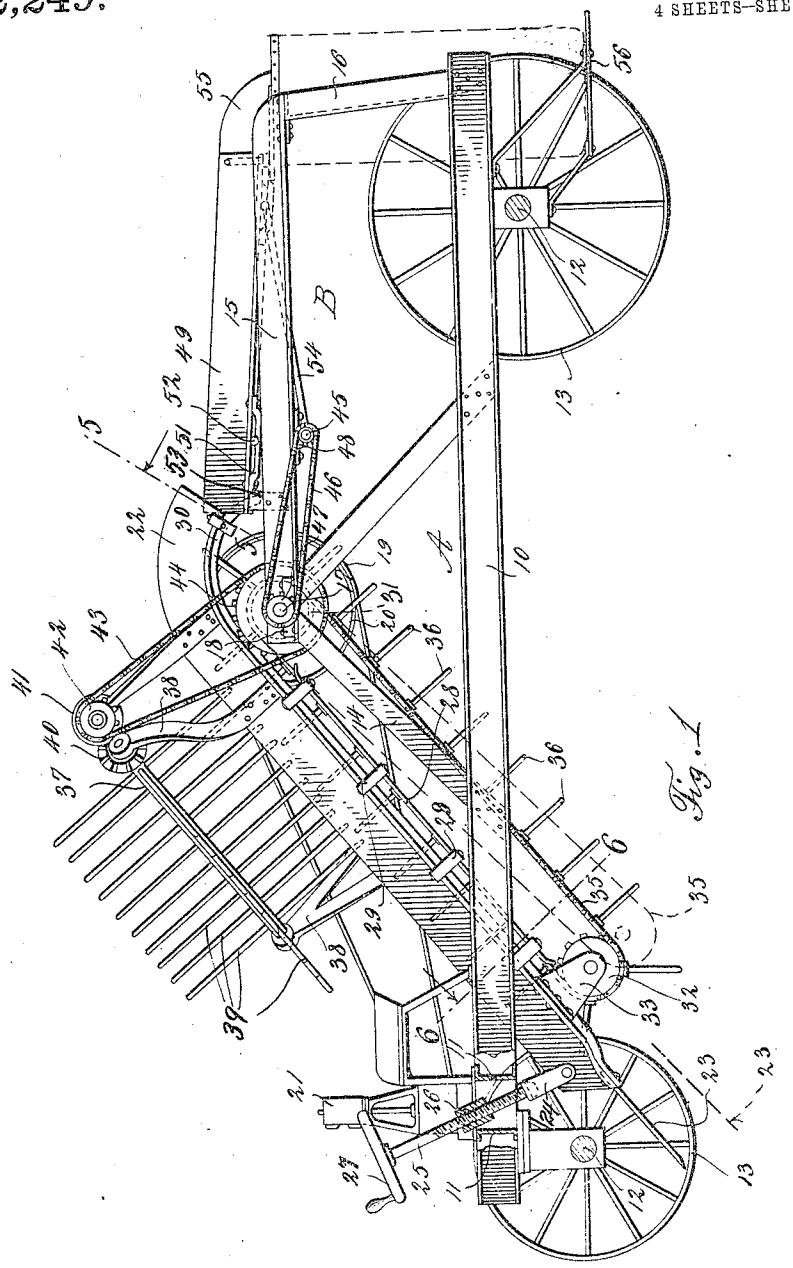

Fig. 1

Witnesses

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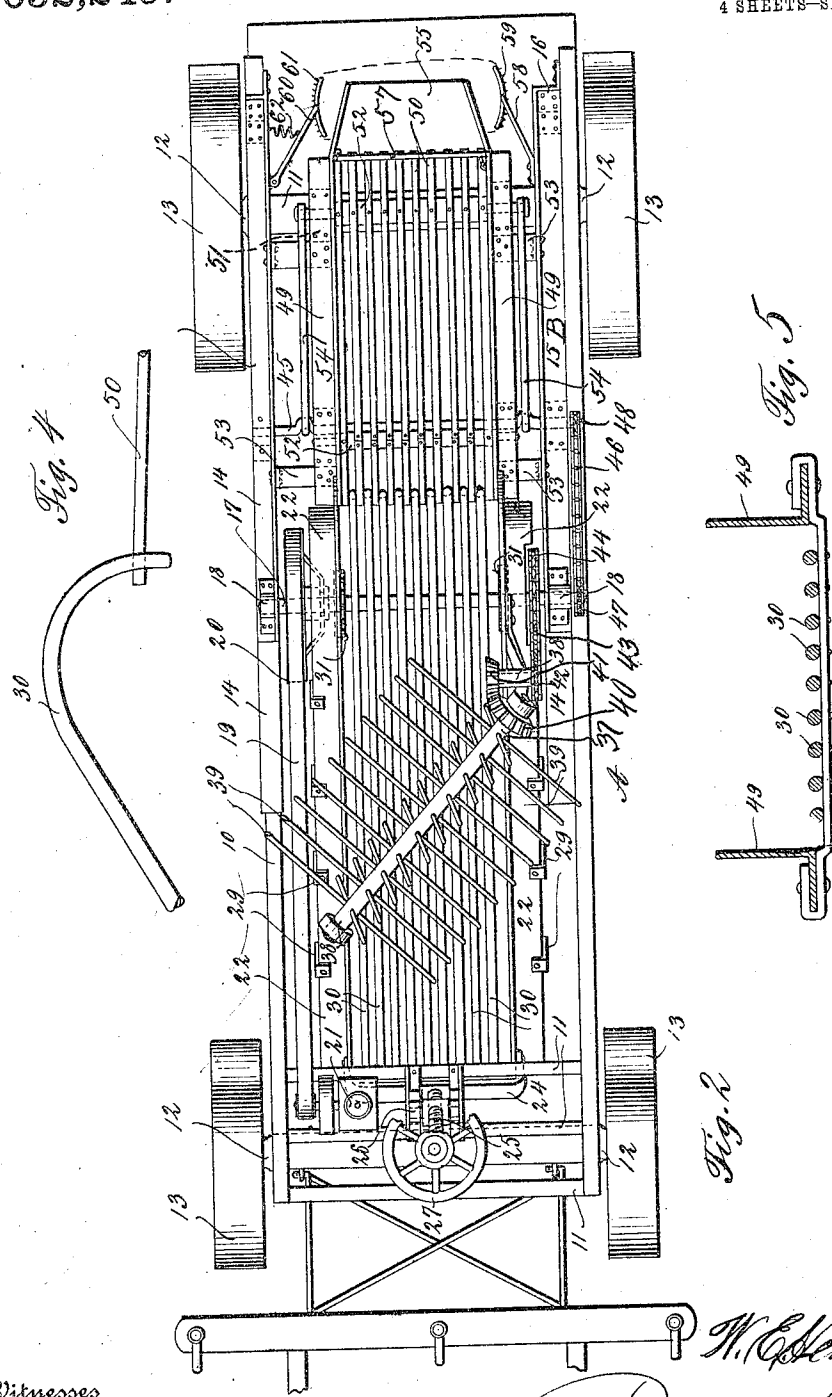

Fig. 4

Fig. 5

Fig. 2

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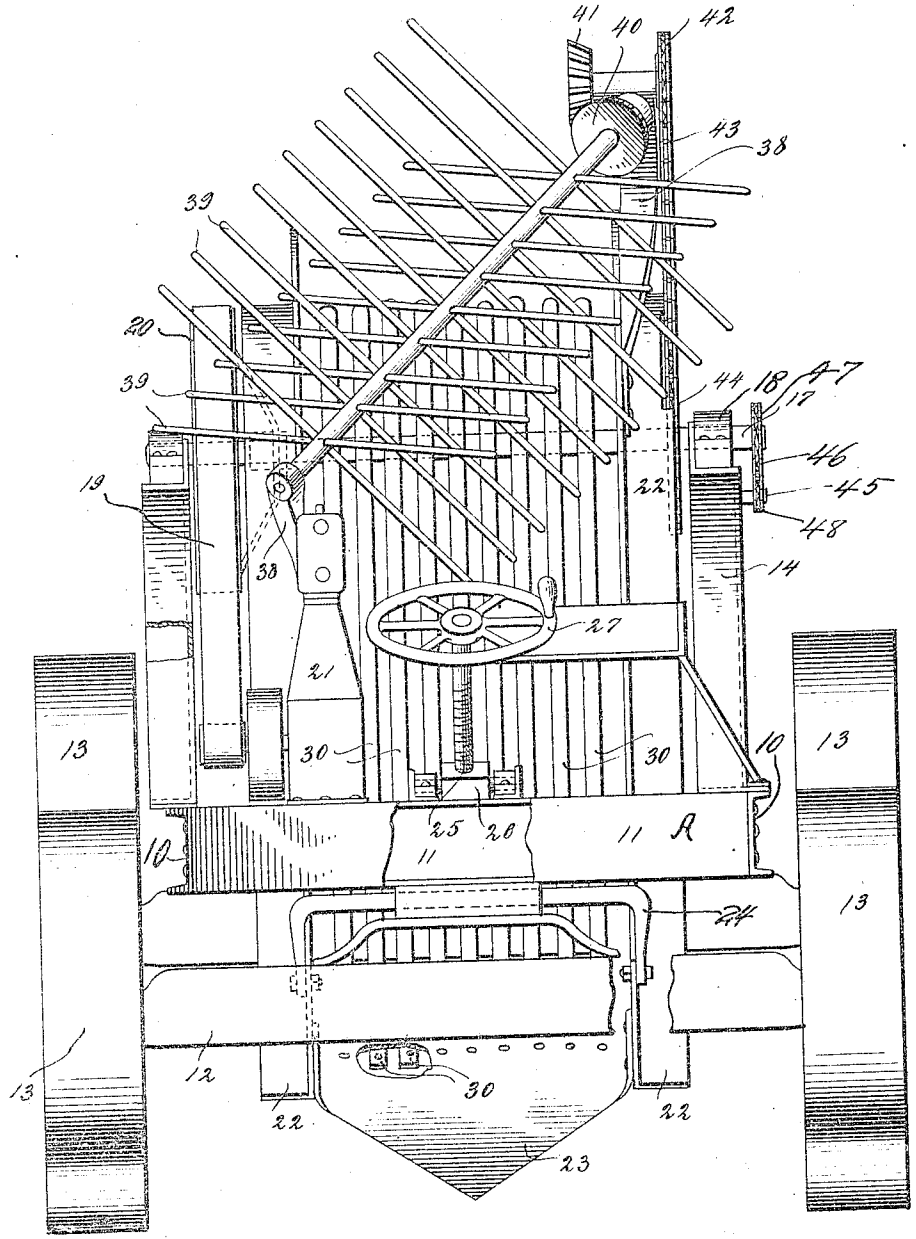

Fig. 3

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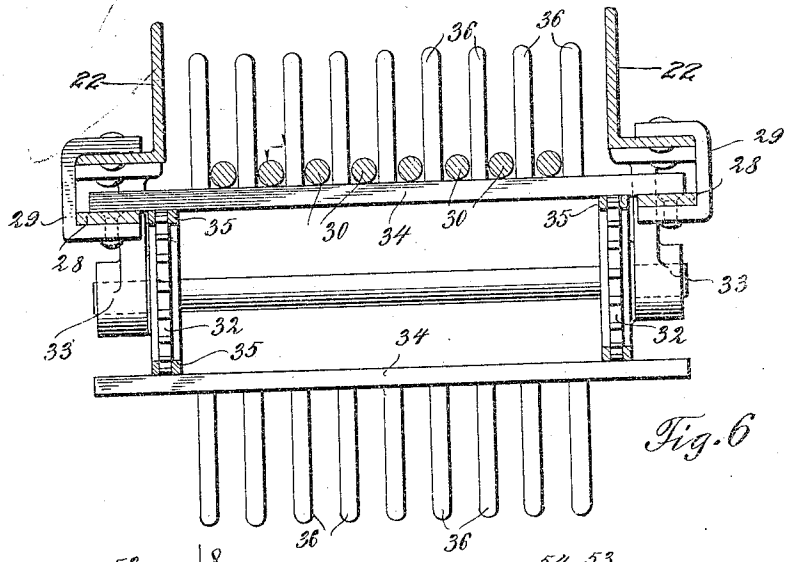

Fig. 6

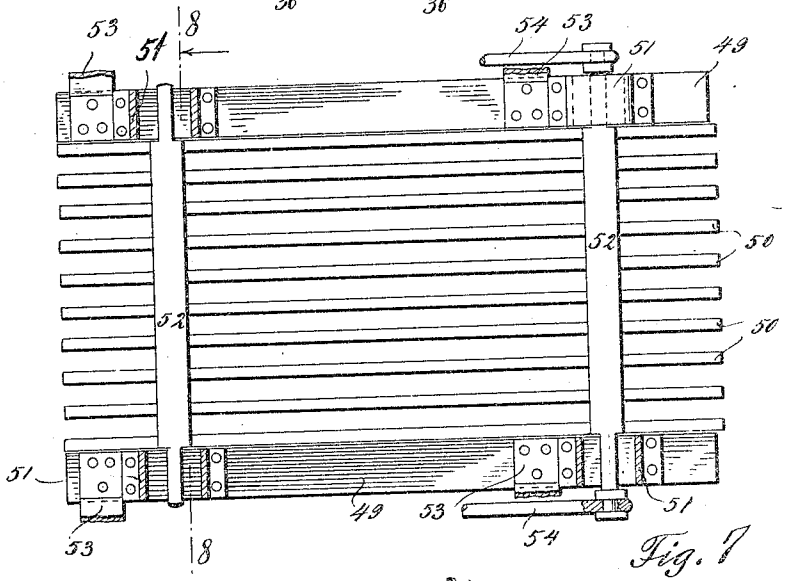

Fig. 7

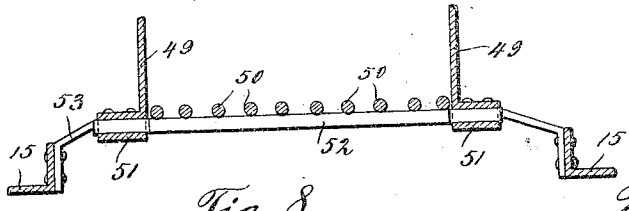

Fig. 8

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UNITED STATES PATENT OFFICE.

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CARRIER AND SCREENING MEANS FOR POTATO-DIGGERS.

1,052,249. Specification of Letters Patent. Patented Feb. 4, 1913.

Application filed July 27, 1910. Serial No. 574,135.

To all whom it may concern:

Be it known that I, WILLIAM E. HEWITT, a citizen of the United States, residing at Turner, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Carriers and Screening Means for Potato-Diggers, of which the following is a specification.

This invention appertains broadly to the construction of machines for potato digging purposes and includes primarily special screening means in association with a peculiar form of carrier for feeding material to the screening means, together with other details of construction, the advantages of which will appear more fully hereinafter.

With the above and other objects in view, this invention consists in the construction, combination, and arrangement of parts, all as hereinafter more fully described, claimed, and illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation of the potato digger constructed in accordance with the present invention, parts thereof being in section; Fig. 2 is a top plan view thereof; Fig. 3 is a front elevation thereof, parts being broken away; Fig. 4 is an elevation illustrating the coöperation between the carrier rods and the screening rods; Fig. 5 is a transverse section of the carrier taken along line 5—5 of Fig. 1; Fig. 6 is a transverse section taken along line 6—6 of Fig. 1; Fig. 7 is a bottom plan view of the screening mechanism; Fig. 8 is a transverse section taken along line 8—8 of Fig. 7.

A potato digger forming the subject matter of the present invention comprises a frame having wheels of the usual construction mounted thereon and a superstructure mounted above said frame. A screening apparatus is mounted on the rear end of said superstructure while a carrier is pivotally mounted on the forward side of said superstructure, said carrier having a plow at its lower terminal. All of the mechanisms are driven from a shaft mounted on the superstructure about which the carrier pivots, said shaft being driven by a gasolene engine mounted on the forward end of the frame. A weed extractor is superposed above the carrier and is adapted to remove the weeds and vines of the potatoes which may be gathered in by the carrier.

In carrying out the present invention, 10 indicates the longitudinal sides of the rectangular frame constructed of channel bars between the terminals of which are interposed the transverse bars 11. The frame thus formed and indicated for the sake of convenience generally as A carries the axles 12 of the usual construction at the terminals of which are mounted the wheels 13.

The convergent supports 14 are centrally mounted on the longitudinal bars 10 of the frame A to which are secured the horizontal bars 15 which extend rearwardly and are secured to the vertical supports 16, said bars forming in combination the superstructure generally indicated as B.

A transverse shaft 17 is mounted in the bearings 18, located at the top of the converging supports 14. This shaft is rotated by the belt 19 passing over a pulley 20 located at one terminal of the shaft and extending to a gasolene engine or motor 21.

Angle bars 22 are mounted intermediate the sides 10 of the frame A and are pivotally connected in any suitable manner to the shaft 17, said angle bars extending below the frame A and having interposed between their lower extremities the plow 23. The lower extremities of the angle bars 22 adjacent to the plow 23 have secured thereto the yoke 24 to which is swiveled the screw 25 which projects upwardly through a bearing 26, and is provided at its upper extremity with a hand-wheel 27. From this construction it will be understood that as the hand-wheel 27 is rotated in either direction, the screw 25 will raise and lower the plow 23 through the angle bars 22, thereby regulating the depth thereof in the ground or entirely removing the same as desired.

The rear terminals of the angle bars are bent downwardly toward the superstructure B in order to deliver the potatoes to the screen as hereinafter more fully described. Guide strips 28 are supported by brackets 29 which are carried by the angle bars 22, said guiding strips being spaced from the angle bars. The guiding strips extend substantially the entire length of the angle bars and provide a guide for the carrier chain. A series of longitudinal bars 30 are interposed between the angle bars 22, said rods extending from the plow 23 to the upper terminals of said angle bars and are curved downwardly to conform with the contour of said angle bars but extend below the terminals thereof, interlocking with the rod of the screen as hereinafter more fully de-

scribed. A sprocket wheel 31 is located adjacent to each terminal of the shaft 17 and is adapted to rotate therewith, said sprockets being alined with the sprockets 32 carried at the lower terminals of the angle bars 22 by the brackets 33. The carrier chain operates over the sprocket wheels and is adapted to receive the potatoes from the plow 23, and conduct the same to the screen, as hereinafter more fully described. This chain comprises a series of transverse bars 34 which are flexibly connected by the chain 35 which passes about the sprocket wheels 31 and 32. Each transverse bar 34 has formed or secured thereon the outwardly extending fingers 36 which operate between the longitudinal bars 30. From this construction it will readily be understood that as the plow removes the potatoes from the ground, the fingers 36 receive the potatoes directly from said plow and conduct the same upwardly to the screen. The provision of the longitudinal bars 30 permits the majority of the loose dirt to sift to the ground, the remainder of the dirt being removed by the screening mechanism, as hereinafter more fully described.

A weed removing mechanism is mounted centrally over the carrier mechanism and comprises the shaft 37 mounted on the bearings 38 diagonally carried by the angle bars 22. This shaft 37 carries a plurality of radially extending arms 39 which rotates directly over the fingers 36 of the carrier and are adapted to remove the weeds and vines from said carrier. One terminal of the shaft 37 carries a beveled gear 40 which meshes with a similar beveled gear 41 carried by an auxiliary bearing mounted on the adjacent bearing 38. The shaft of the beveled gear 41 carries a small sprocket wheel 42 about which operates a chain 43 which extends downwardly and operates about the large sprocket 44 rigidly mounted on the shaft 17. It will be readily understood that as the shaft 17 rotates the shaft carrying the beveled gear 41 will likewise rotate and will in turn rotate the shaft carrying the fingers.

A crank shaft 45 is rotatably mounted below the longitudinal bars 15 of the super structure B adjacent to the shaft 17 and is rotated by the chain 46 which operates over a sprocket 47 located at the extreme end of the shaft 17 and the sprocket 48 carried by the crank shaft 45. The screen comprises a pair of longitudinal angle bars 49 mounted on the angle bars of the superstructure by the brackets 53. A series of longitudinal rods 50 are rigidly secured to the bars 52 which operate in the slotted brackets 51 carried at each terminal of the angle bars 49. Thus it will be seen that by shifting one of the bars 52 in the slotted brackets 51, the rods 50 will be shifted within the longitudinal angle bars 49. The crank shaft 45 is connected to the rear rod or bar 52 by the links 54 and as the shaft 45 rotates the rods 50 will be reciprocated. The forward terminals of the rods 50 interlock with the downwardly curved terminal of the rods of the carrier mechanism, thus insuring the positive delivery of the potatoes to the screen.

The angle bars carrying the screening rod carry at their rear terminals the chute 55 which operates directly over a platform 56 carried by the rear axle 12 and the frame A. The potatoes are prevented from entering the chute 55 by the door 57, hinged to one of the angle bars 49 and adapted to be locked against the opposite angle bar. In order to hold a bag directly below the chute, a rigid arm 58 is carried by one of the angle bars 15 and is provided at its free terminal with a transverse bar 59, the latter having a series of teeth formed on its outer face, while a similar rod 60 is pivoted to the opposite angle bar 15 and is also provided with a transverse bar 61 which likewise has teeth on its outer face. A spring 62 is interposed between the rod 60 and the supporting bar 15 and tends to draw said rod and bar to the angle bar. Thus it will be seen when a bag shown in dotted lines is carried on the teeth of the bar 59, it will be supported by the teeth of the bar 61 due to the action of the spring 62 on the rod 60.

From this construction it will be readily understood that the potatoes are received from the plow 23 by the carrier mechanism and have the weeds and vines removed therefrom during the elevation process after which the potatoes are delivered to the screen mechanism where the dirt is removed and then delivered directly to the bag.

It will be apparent that since the rods 30 beneath the carrier 35 are stationary, said members form guides for the rods 50 of the screen mechanism, by reason of the interlocking connection between the above mentioned parts as hereinbefore referred to. The relative positions of said rods 30 and 50, is, of course, advantageous in insuring the proper delivery of the material operated on by the carrier 35, to the screening means. The members 30, furthermore, in co operation with the carrier 35 constitute means for conducting or feeding the material to the screen.

Having thus described my invention, what is claimed as new is:—

1. In a machine of the type set forth, the combination of a frame embodying a superstructure, a screen mounted on said superstructure and comprising longitudinal rods arranged in spaced relation, means for feeding material on to said screen consisting of a carrier comprising a plurality of spaced stationary rods having their ends interlocking with the rods of the screen by entering

the spaces between the latter, and means for vibrating the screen so that the latter is guided by the interlocking connection of the same with the stationary rods of the carrier.

2. In a machine of the type set forth, the combination of a frame embodying a superstructure, a screen mounted on said superstructure and comprising longitudinal rods arranged in spaced relation, means for feeding material on to said screen consisting of a carrier comprising upwardly inclined stationary rods having their upper extremities curved downwardly so as to extend between and thus interlock with the rods of the screen, means for imparting movement to the screen so that the latter is guided in such movement by the interlocking action of the same with said rods of the carrier, said carrier also including a carrier chain and outwardly extending fingers mounted on the carrier chain and movable thereby through the spaces between the rods of the screen.

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

WILLIAM E. HEWITT.

Witnesses:
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J. A. MAHAN.