

into the working cylinder, a valve to close said ports, a valve rod connected to said valve, an eccentric rod connected to the valve rod having a bifurcated end which encircles the eccentric wheel, the main shaft, an eccentric wheel mounted on the main shaft, a cam secured to the frame work of the engine, a traveller secured to the eccentric rod, said traveller working in said cam, said cam adapted to reverse the stroke of the eccentric rod, substantially as described.

2nd. A reversing gear for steam engines, consisting of the combination of a steam chest, steam ports from said steam chest into the working cylinder, a valve to close said ports, a valve rod connected to said valve, an eccentric rod connected to said valve, an eccentric wheel engaging with the bifurcated end, the frame work of the engine, a rocker bolt secured to the frame work of the engine, a cam mounted upon the rocker bolt, a traveller secured to the inner side of the eccentric rod, said traveller working in said cam, means for altering the position of said cam, said cam and traveller adapted to reverse the stroke of the eccentric rod, substantially as described.

No. 42,560. Mowing Machine. (Fauchense.)

The William N. Whitely Co., assignee of William N. Whitely, all of Springfield, Ohio, U.S.A., 11th April, 1893; 6 years.

Claim.—1st. In a mowing machine, having two main driving wheels and a main axle connecting the same, a vibrating gear frame pivoted on said main axle and adapted to support the knife driving mechanism, a cutting apparatus hinged to the vibrating gear frame, and a finger bar lifting lever mounted upon said vibrating gear frame above the hinged joint of the cutting apparatus, said lever being adapted to elevate the cutting apparatus into a vertical position, a gear shifting device also mounted upon the vibrating gear frame, and means, substantially as described, for operating said gear shifting device by the movement of said lever, whereby said lifting lever is adapted to positively actuate said gear shifting device to disengage the mechanism which drives the knife when the cutting apparatus is raised to a height beyond the limit of the operation of the knife pitman and automatically re-engage said gearing, to cause the knife to operate when the finger bar is lowered to a position within the operative limits of said knife pitman, all the parts being constructed and arranged for joint operations, substantially as specified. 2nd. In a mowing machine, a vibrating gear frame pivoted to the main axle, which is supported by two main driving wheels, cutting apparatus hinged to the inner front corner of said gear frame, and a lead or grass wheel pivotally connected to the inner front cor of the vibrating gear frame in front of the cutting apparatus, and an operating lever connected with said wheel to raise and lower the front frame in reference thereto, and thus raise and lower the cutting apparatus hinged to said vibrating gear frame when in either a horizontal or vertical position, substantially as specified. 3rd. In a mowing machine, having two main driving wheels, and the main axle connected to the same, a vibrating gear frame hinged to said main axle, and a tongue or pole hinged to said gear frame, a cutting apparatus also hinged to said gear frame, a lifting lever mounted upon the vibrating gear frame above the hinge of the cutting apparatus and connected thereto, a shifting device for engaging and disengaging the mechanism which operates the cutters, said shifting device being also supported on the vibrating gear frame and independent of the hinged tongue or pole, and engaging projections between said lifting lever and shifting device, whereby the knife driving mechanism is automatically disengaged by the operation of said lifting lever, when the outer end of the cutting apparatus is lifted to a position as high as the knife pitman will operate, substantially as specified. 4th. In a mowing machine, having a hinged cutting apparatus and a lifting lever for operating said cutting apparatus and a lifting lever for operating said cutting apparatus about its hinged connection, a knife driving mechanism connected to said cutting apparatus, and a gear shifter to disconnect said cutting apparatus by the operation of said lifting lever, of a lock or stop adapted to permit a limited movement of said lever and cutting apparatus, said lock or stop being adapted to prevent a movement of said cutting apparatus beyond the operating limit of said knife driving mechanism, substantially as specified. 5th. In a mowing machine, having a hinged cutting apparatus and knife driving mechanism, a lifting lever for operating said cutting apparatus about this hinged connection, and a gear shifting device, adapted by a movement of said lifting lever, to automatically disengage said knife driving mechanism, and a movable stop or lock adapted to prevent a movement of said lifting lever to a point which will operate said shifting device by the revolution of said cutting apparatus, whereby said knife driving mechanism is prevented from accidental disengagement by the raising of said cutting apparatus, substantially as specified. 6th. In a mowing machine, a gear frame consisting of four principal parts, a tubular sleeve or box, which surrounds the main driving axle, a tubular frame, which surrounds the crank shaft, substantially at right angles to said axle, and an arm projecting forward from the main tubular box or sleeve, to which the cutting apparatus is attached, and an adjustable connection connecting the last two members together and form a brace or connection between the two, also adapted to serve as a guard or protection for the knife pitman, substantially as specified. 7th. In a mowing machine, a main frame having a forwardly projecting arm, depending brackets on said arm, each of said brackets being provided with bearings to support the cutting apparatus, an inner shoe on said cutting apparatus provided with projecting trunnions at the front and

rear thereof to fit in the bearings on said brackets, one of said bearings being a solid bearing and the other a removable bearing, whereby a detachable hinged connection is secured between the frame and the cutting apparatus, substantially as specified. 8th. In a two wheeled mowing machine, a vibrating gear frame supported on the main axle, which extends between the supporting wheels, a cutting apparatus hinged to said vibrating gear frame, said cutting apparatus being provided with an outer shoe having a rearwardly extending portion with a supporting wheel journaled therein, said outer supporting wheel being arranged substantially in line with the main axle, substantially as and for the purpose specified. 9th. The combination, with the vibrating gear frame and a cutting apparatus hinged thereto, a lifting lever on said gear frame, driving mechanisms for operating the cutting knife also supported on said gear frame, a movable clutch forming a portion of said driving mechanisms, a spring actuated bell crank lever connected to said clutch, and a rock shaft connected to said bell crank lever, and a cam shaped portion on said lifting lever, adapted to contact with the movable part connected to said rock shaft, said cam shaped portion being adapted to produce a quick movement of said rock shaft which will disengage said clutch mechanism and hold the same out of engagement until the lifting lever is returned to its normal position, substantially as specified. 10th. In a mowing machine, a vibrating gear frame and a hinged cutting apparatus connected thereto, and driving mechanism for operating the cutting knife, and a lifting lever pivotally connected to said cutting apparatus, so that a movement of said lever will elevate said cutting apparatus about its hinged connection, a gear shifting device also supported on said vibrating frame and adapted to engage or disengage said knife driving mechanism, a connection from said gear shifting device to said lifting lever, and an intermediate operating device having an engaging projection, adapted to be operated by a cam shaped portion of said lifting lever, so as to produce at the desired time a rapid movement of said gear shifting device and hold the same during the further revolution of said lever, substantially as specified.

No. 42,561. Mowing Machine. (Fauchense.)

The William N. Whitely Company, assignee of William N. Whitely, all of Springfield Ohio, U.S.A., 11th April, 1893; 6 years.

Claim.—1st. In a mowing machine, a vibrating frame and a tongue hinged thereto, a cutting apparatus hinged to said vibrating frame, an intermediate pivoted lifting device on said tongue, and a two part connection from said frame to said lifting device, a pivoted hand lever operating concentrically with said intermediate connection, and means for holding said hand lever in different positions of adjustment, a pivoted foot lever connected to said intermediate connection, and an engaging projection on said hand lever, adapted to contact with said intermediate lifting device, so as to hold or move the same in one direction, substantially as specified. 2nd. In a mowing machine, a vibrating frame and a tongue hinged thereto, a cutting apparatus hinged to the inner front corner of the vibrating frame, and around a shaft which transmits motion to said cutting apparatus, an adjusting lever mounted upon the tongue, to determine the cutting height of the cutting apparatus, and a two part connection from said adjusting lever to the vibrating frame adapted to permit an independent movement of said frame with reference to said lever, whereby the cutting apparatus may be adjusted to any desired height and still be free to rise independent of the adjusting lever, substantially as specified. 3rd. In a mowing machine, a vibrating frame and a tongue hinged thereto, a cutting apparatus hinged to said frame, and an adjusting lever mounted on said tongue, an intermediate lifting device connected to the vibrating frame and adapted to contact with said adjusting lever, a foot lever also mounted on said tongue and connected to said intermediate lifting device independent of said adjusting lever, whereby the cutting height of said cutting apparatus may be adjusted by said adjusting lever, and at the same time permit an independent movement of the cutting apparatus by said foot lever, substantially as specified. 4th. In a mowing machine, a vibrating frame and a tongue hinged thereto, a cutting apparatus hinged to said frame, an adjusting lever on said tongue, and an intermediate connecting device also on said tongue, adapted to contact with said adjusting lever, a two part connection from said intermediate connecting device to the frame, to permit an independent movement of said frame, and an auxiliary pivoted lever on said tongue connected to said intermediate connecting device, whereby the cutting apparatus may be raised by said adjusting lever when released by said auxiliary lever, substantially as specified. 5th. In a mowing machine, a main vibrating frame and a tongue hinged thereto, a cutting apparatus hinged to said frame, two pivoted levers on said tongue, and an intermediate lifting device adapted to be acted upon by each of said levers when moved in opposite directions, to produce an angular movement of said vibrating frame with reference to said tongue, and thus lift said cutting apparatus, and a loose connection between said intermediate device and said frame, to permit a movement of said cutting apparatus independent of either of said levers, substantially as specified. 6th. In a mowing machine, a cutting apparatus adapted to receive motion from a revolving crank and shaft supported in a suitable tube or bearing on the main frame, an inner shoe forming a part of said cutting apparatus, said shoe being provided in the rear of said crank with supporting bearings which surround said crank