(No Model.) 2 Sheets—Sheet 1.

R. H. BLANCHARD & F. B. VAUGHN.

STONE PICKER.

No. 597,491. Patented Jan. 18, 1898.

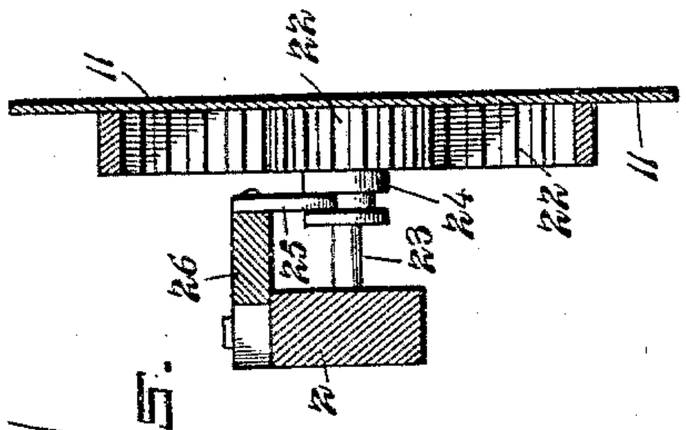

FIG. 5.

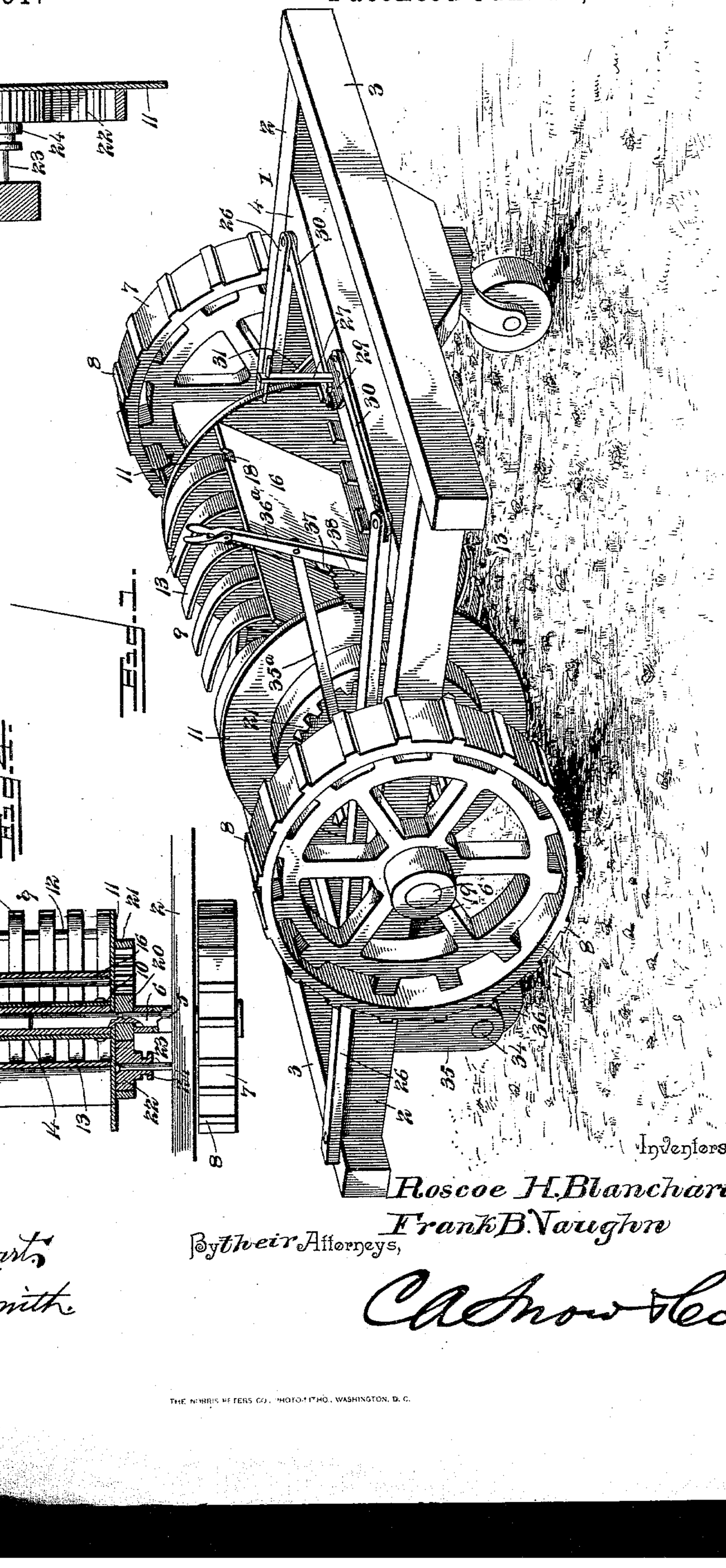

FIG. 1.

FIG. 4.

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(No Model.) 2 Sheets—Sheet 2

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Fig. 5.

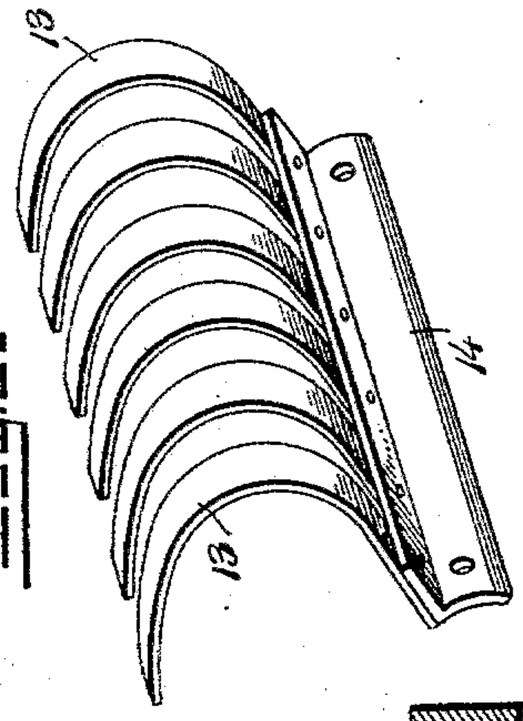


Fig. 4.

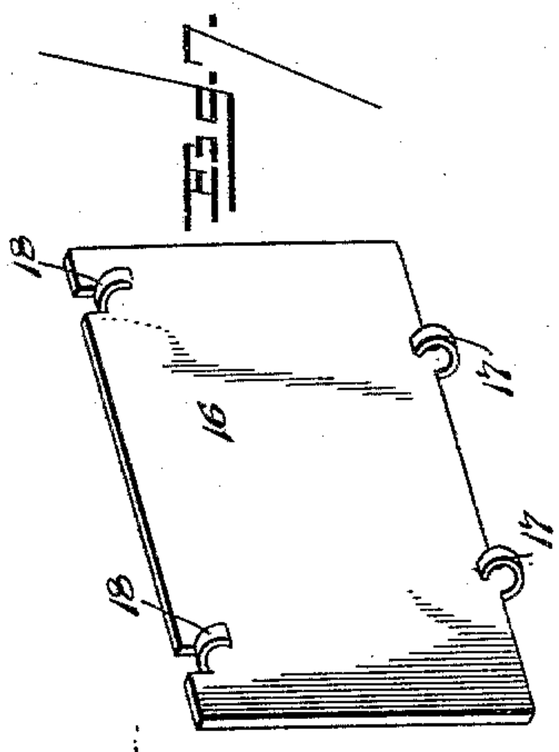


Fig. 2.

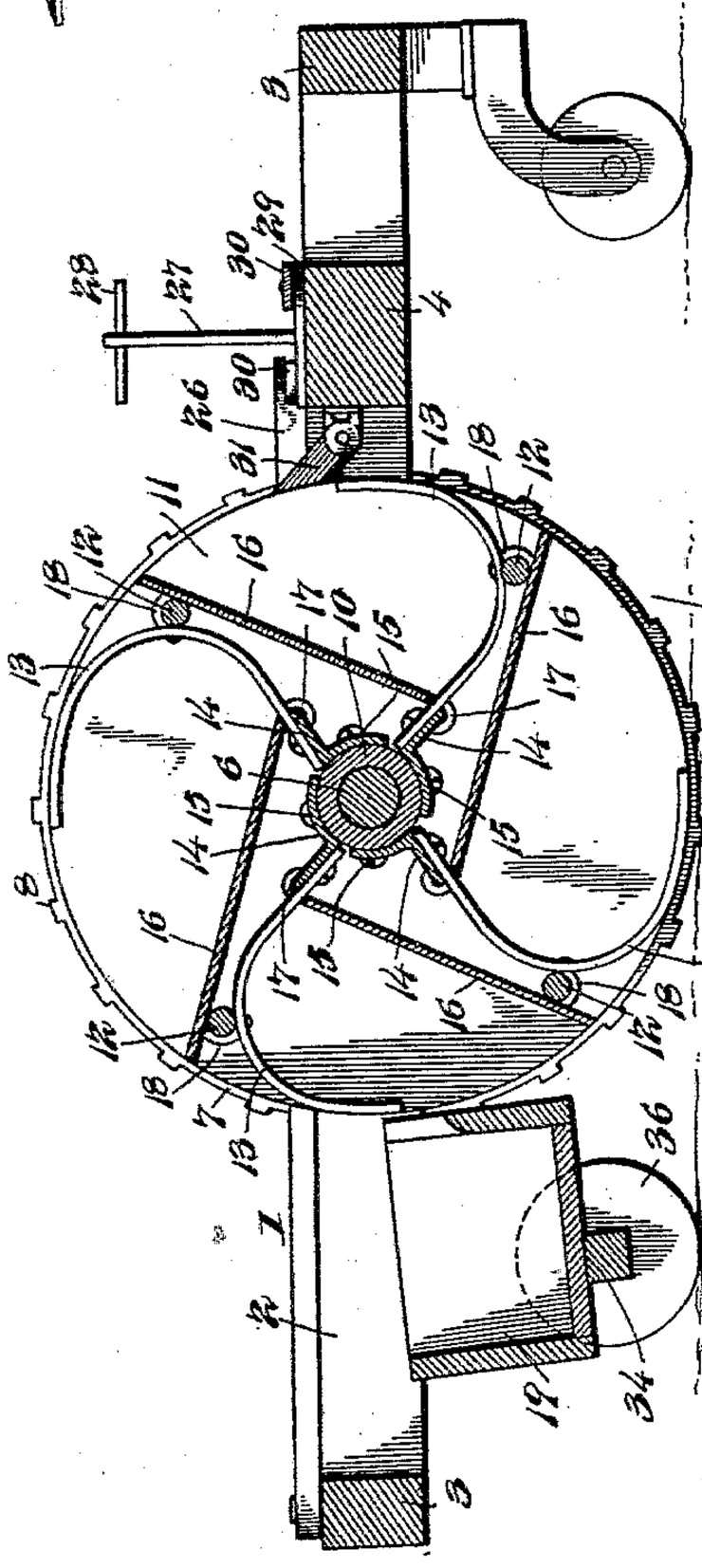
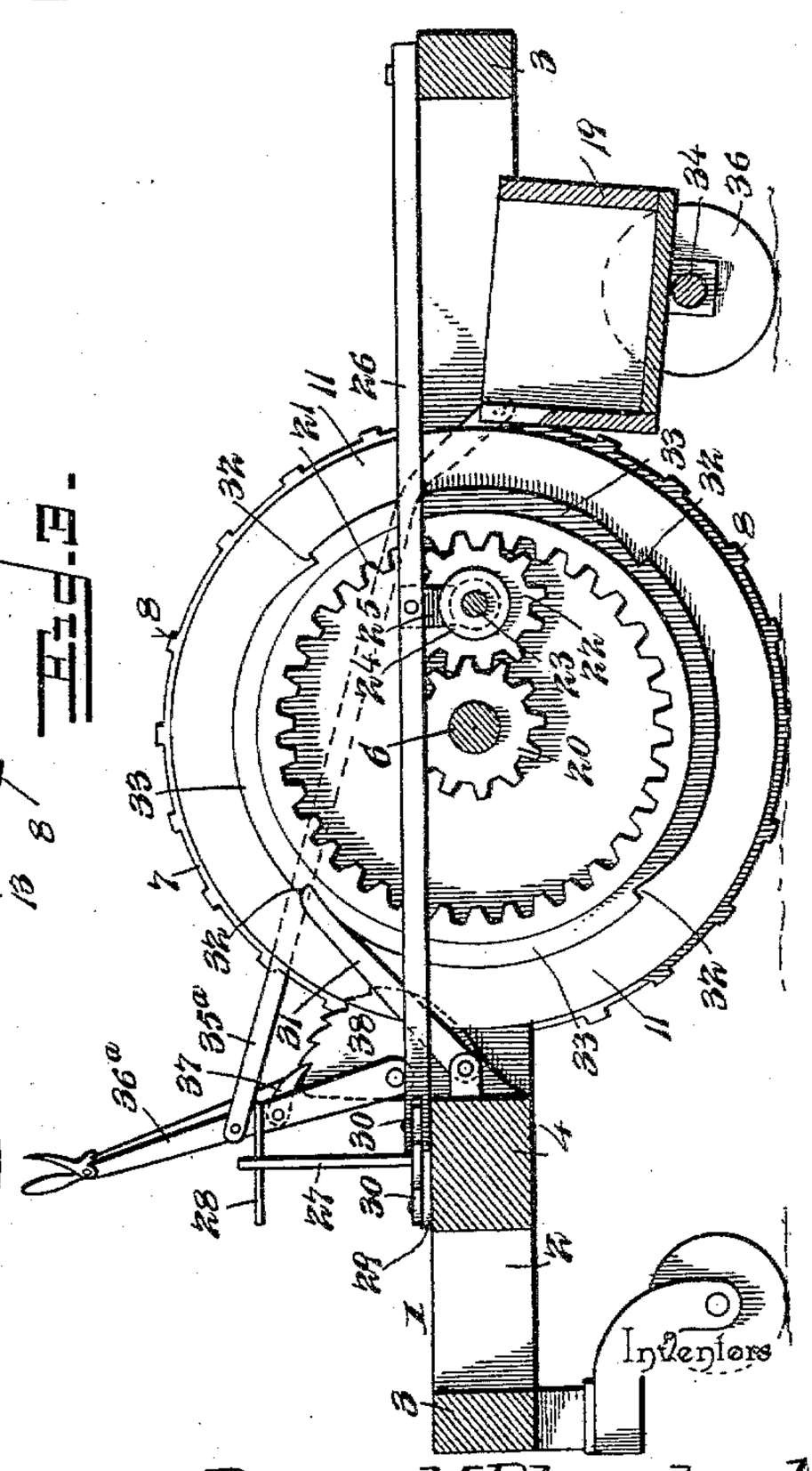


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

ROSCOE H. BLANCHARD, OF WINSTED, CONNECTICUT, AND FRANK B. VAUGHN, OF MOOERS FORKS, NEW YORK.

STONE-PICKER.

SPECIFICATION forming part of Letters Patent No. 597,491, dated January 18, 1898.

Application filed January 13, 1896. Serial No. 575,346. (No model.)

To all whom it may concern:

Be it known that we, ROSCOE H. BLANCHARD, residing at Winsted, in the county of Litchfield and State of Connecticut, and FRANK B. VAUGHN, residing at Mooers Forks, in the county of Clinton and State of New York, citizens of the United States, have invented a new and useful Stone-Picker, of which the following is a specification.

This invention relates to machines for gathering loose stones from roadways and dumping the same in piles at intervals along the road.

The object of the present invention is to provide a simple and efficient machine of the character described, adapted to be drawn by horses and capable of picking up all loose stones from, say, one to fifty pounds in weight, depositing the same in a common receptacle or dump-boat, and finally discharging the collected stones in a heap.

To this end the invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the improved machine constructed in accordance with this invention. Fig. 2 is a longitudinal section through the same. Fig. 3 is also a longitudinal section taken just inside of one of the side bars of the frame. Fig. 4 is a horizontal section through a portion of the machine, taken in line with the shaft of the revolving gatherer. Fig. 5 is a detail section showing the manner of adjusting one of the intermediate pinions for throwing the gatherer into or out of operation. Fig. 6 is a detail perspective view of one set of gathering-fingers. Fig. 7 is a similar view of one of the aprons or chute-boards.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the accompanying drawings, 1 designates a suitable frame, rectangular in shape and comprising suitable side bars 2 and front and rear cross-bars 3, and also an intermediate cross-bar 4, arranged near the front of the machine. About centrally of its length this frame is provided with sleeve-bearings 5, in which is mounted the main driving-shaft 6 of the machine. This driving-shaft is divided centrally or made in independent halves, and each section or half is provided at its outer end with one of the ground or driving wheels 7, made after the manner of an ordinary traction-wheel and provided on the exterior surface of its rim or periphery with ribs 8, or equivalent means, which will prevent the said wheels from slipping upon the ground and failing to impart motion to the stone-gatherer. By dividing the shaft or forming the same in independent sections the guiding and turning of the machine is greatly facilitated.

Within the center of the frame 1 and journaled upon the inner adjacent ends of the divided shaft 6 is a revoluble stone-gatherer 9, which comprises a central sleeve 10, having at its opposite ends spaced end disks 11, connected and braced at suitable intervals by tie-rods 12, located near the peripheries of said disks. Between the end disks 11 are mounted several sets of gathering-fingers 13, each set extending transversely of the machine and connected to a common base-plate 14, which is angular or L-shaped in cross-section and provided with openings through which pass suitable screws or fastenings 15, by means of which the same is secured to the sleeve 10, above referred to. The gathering-fingers 13 project, first, radially from the sleeve 10, after which they are curved at their central portions, and their extremities or end portions then extended coincidentally, or substantially so, with the peripheries of the disks 11, as clearly shown in Fig. 2. The revolving stone-gatherer thus constructed corresponds in diameter approximately to the carrying-wheels 7, so that the extremities of the gathering-fingers always travel close to the ground and at the same time are protected from accidentally engaging objects fast in the roadway and becoming broken or bent out of shape. There are preferably four series or sets of gathering-fingers 13, and they are severally secured intermediate their ends by riveting or otherwise to the tie-bolts 12, as clearly shown. A metal apron 16 is provided for each set of gatherers, the same extending between the end disks 11 and provided at its

inner edge with hooks 17, which engage perforations in the angle-bar 14 and at its opposite edge with hooks 18, which engage over the tie-rod 12 of the next adjacent set of fingers 13. This apron forms a flooring or bottom upon which the collected stones rest when they are carried up over the axis of the revolving gatherer and assists by its rearward inclination at the proper time to discharge the stones rearwardly into a box or boat 19, located within the frame 1 and just in rear of the revolving gatherer.

The revolving gatherer is actuated by means of the main driving-shaft 6, each section of which has fast thereon a spur gear or pinion 20, which meshes with an internally-geared rim 21, secured to the outside of one of the end disks 11 through the medium of an intermediate pinion 22. This gearing is duplicated at each side of the revolving gatherer, and the intermediate pinion 22 upon each side is mounted upon a stud-shaft 23, projecting inwardly from the adjacent side bar 2 of the machine-frame. Each intermediate pinion has a grooved hub 24, which is engaged by a fork or finger 25 upon a shipping-lever 26, by the operation of which the said intermediate pinion 22 may be moved into and out of engagement with the pinion 20 and internal gear 21, the said intermediate pinion being adapted to slide longitudinally of the stud-shaft 23, upon which it is journaled. In this manner the revolving gatherer may be thrown into or out of operation. There are two of such shipping-levers 26, one upon each side of the machine and both pivoted at their rear ends to the machine-frame and capable of being vibrated at their forward ends by means of a standard 27, having an operating handle-bar 28 and provided near its base with a disk 29, from which oppositely-extending pivotal links or connecting-rods 30 reach to the forward ends of the shipping-levers. By this mechanism the attendant, standing at the front end of the machine, may simultaneously operate both shipping-levers for throwing both intermediate gears 22 into and out of mesh, as described.

31 is a detent which is pivotally connected to the machine-frame at one end and at its vibrating end engages notches 32 in a ring 33, secured to one of the end disks 11. This detent prevents retrograde movement of the revolving gatherer, and the notches 32 are disposed in such manner around the ring 33 as to hold the points of the gathering-fingers in position to pick up the stones.

The dump boat or box 19 is mounted upon a supplemental axle 34, journaled in depending extensions 35 of the machine-frame. Wheels 36 are also mounted upon said axle 34 and adapted to roll in contact with the ground when the dump-boat 19 becomes loaded with stone, so as to prevent backward tipping of the machine. From one end of the boat 19 a pivoted connecting rod or bar 35^a extends to the front end of the machine, where it pivotally connects with a latch-lever 36^a, carrying a pivoted latch 37, engaging a toothed segmental rack 38, secured to the machine-frame. By operating this latch-lever the boat, when it becomes filled with stones, may be dumped, thereby depositing the contents in a single pile upon the ground, after which, by means of said lever, the boat may be returned to its normal position to receive another load.

In operation the improved machine is drawn along the roadway with the detent 31 in engagement with and holding the revolving gatherer stationary and with the gathering-fingers in position to pick up the loose stones. Under this arrangement the revolving gatherer is of course out of operative engagement with the driving-shaft. When a sufficient number of stones have been gathered by the lower set of fingers or gatherers, the attendant vibrates the shipping-levers and throws the revolving gatherer into operation, as above described. This engagement is, however, maintained only until the next succeeding set of gathering-fingers is brought into position to pick up stones. During the intermittent rotation of the gatherer the stones are discharged into the dump-boat, from which they are finally deposited upon the ground, as above described.

It will be apparent that any number of sets of gathering-fingers may be employed and that the particular means for throwing the gatherer into and out of operation may be varied somewhat.

It will also be apparent that other changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

1. In a stone-gatherer, the combination with the frame, its axle and carrying-wheels, of a gatherer journaled on the axle between the wheels, said gatherer comprising spaced disks of a diameter substantially equal to that of said wheels, and a series of sets of curved fingers arranged between the disks, the curvature of the outer ends of the fingers corresponding substantially with that of the disks, recesses formed in one of said disks, a detent on the frame adapted to engage said recesses to prevent rotation of the gatherer in a forward direction, the recesses being so disposed that when the detent engages either of them one of the sets of fingers will be in operative position to gather the stones, gearing interposed between the carrying-wheels and the gatherer to rotate the gatherer in a rearward direction, and means to intermittently change said gearing to operative and inoperative position, substantially as described.

2. In a stone-gatherer, the combination with the frame, its axle and carrying-wheels, of a gatherer journaled on the axle between the wheels, said gatherer comprising spaced disks

and a series of sets of curved fingers arranged between the disks, said disks each having an internally-geared rim, a pinion fast on the carrying-wheel shaft, an intermediate gear slidingly mounted on a stationary axle carried by the frame, means to intermittently engage and disengage said sliding gear with the geared rim and the pinion on the shaft, to intermittently turn the gatherer on the axle in a direction opposite to that in which the carrying-wheels move, and a pivoted detent on the frame engaging a recess in one of the disks to prevent rotary movement of the gatherer in the direction of that of the carrying-wheels when the sliding gear is disengaged from the pinion and rim, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

ROSCOE H. BLANCHARD.
FRANK B. VAUGHN.

Witnesses as to signature of Roscoe H. Blanchard:

CHARLES P. HALLETT,
HAROLD E. MUNSON.

Witnesses as to signature of Frank B. Vaughn:

MARY E. STEELE,
VIOLA M. STEELE.