

(No Model.)

4 Sheets—Sheet 1.

H. MUELLER, Jr.  
STREET SWEEPER.

No. 529,132.

Patented Nov. 13, 1894.

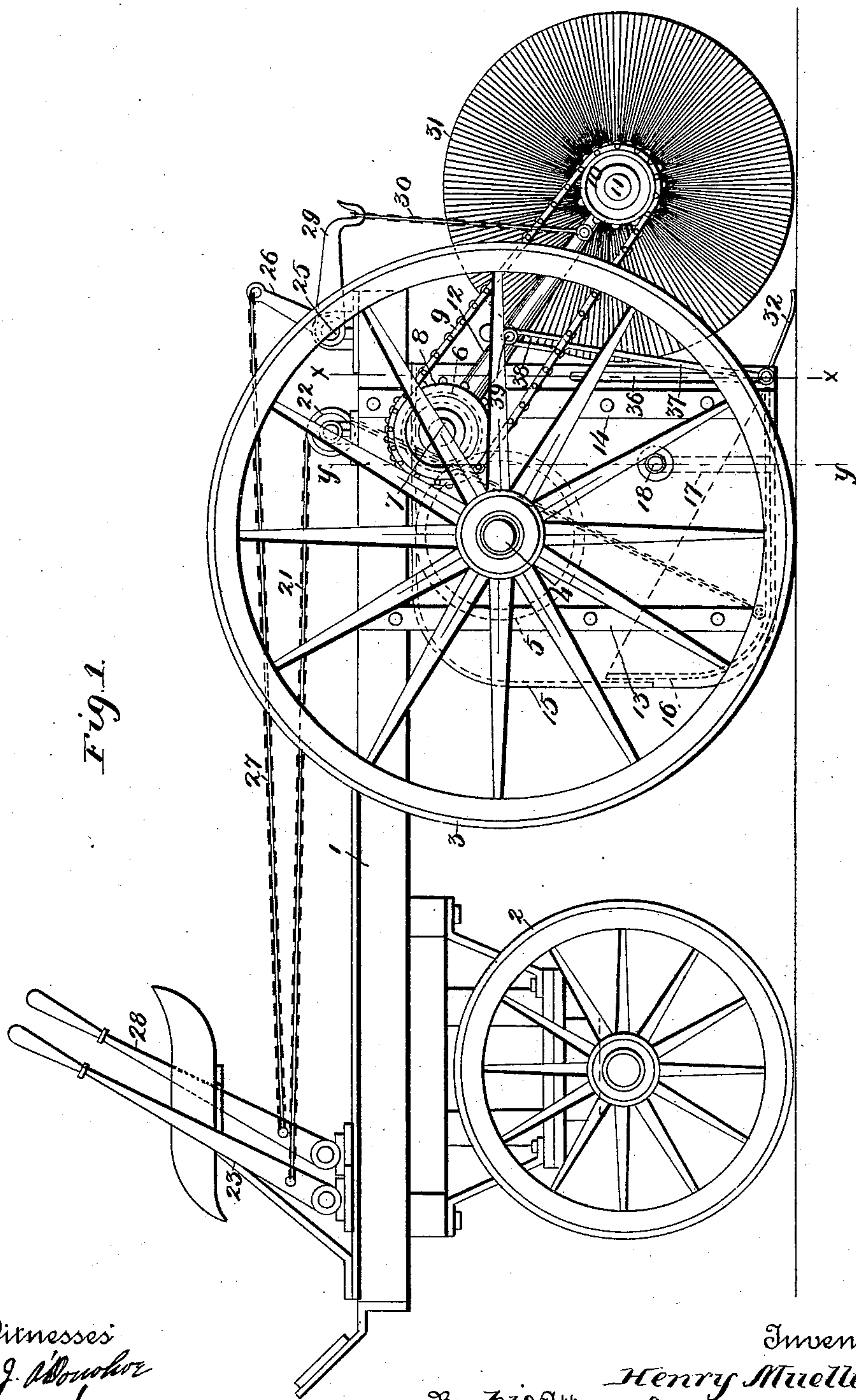


Fig. 1.

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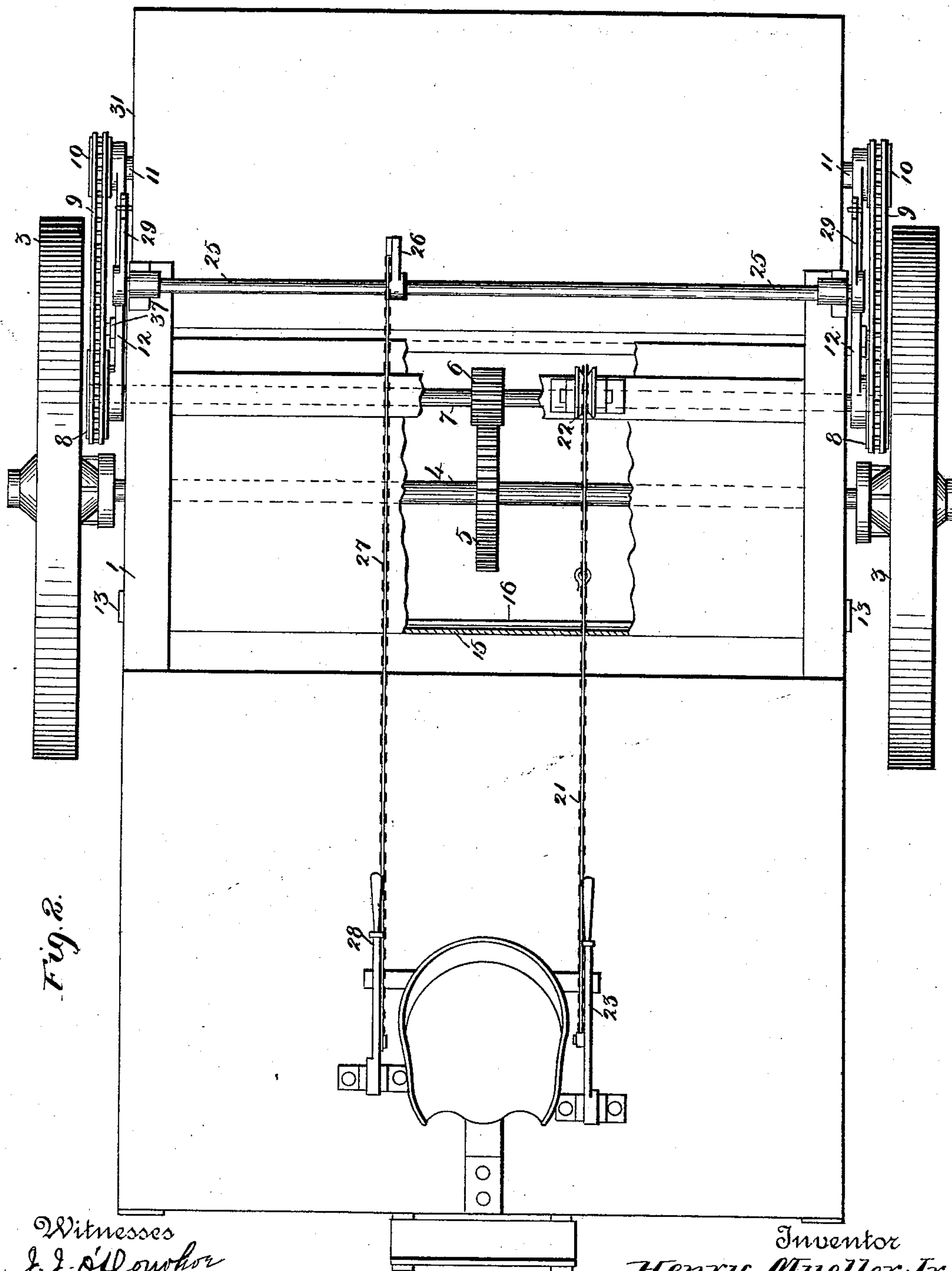


Fig. 2.

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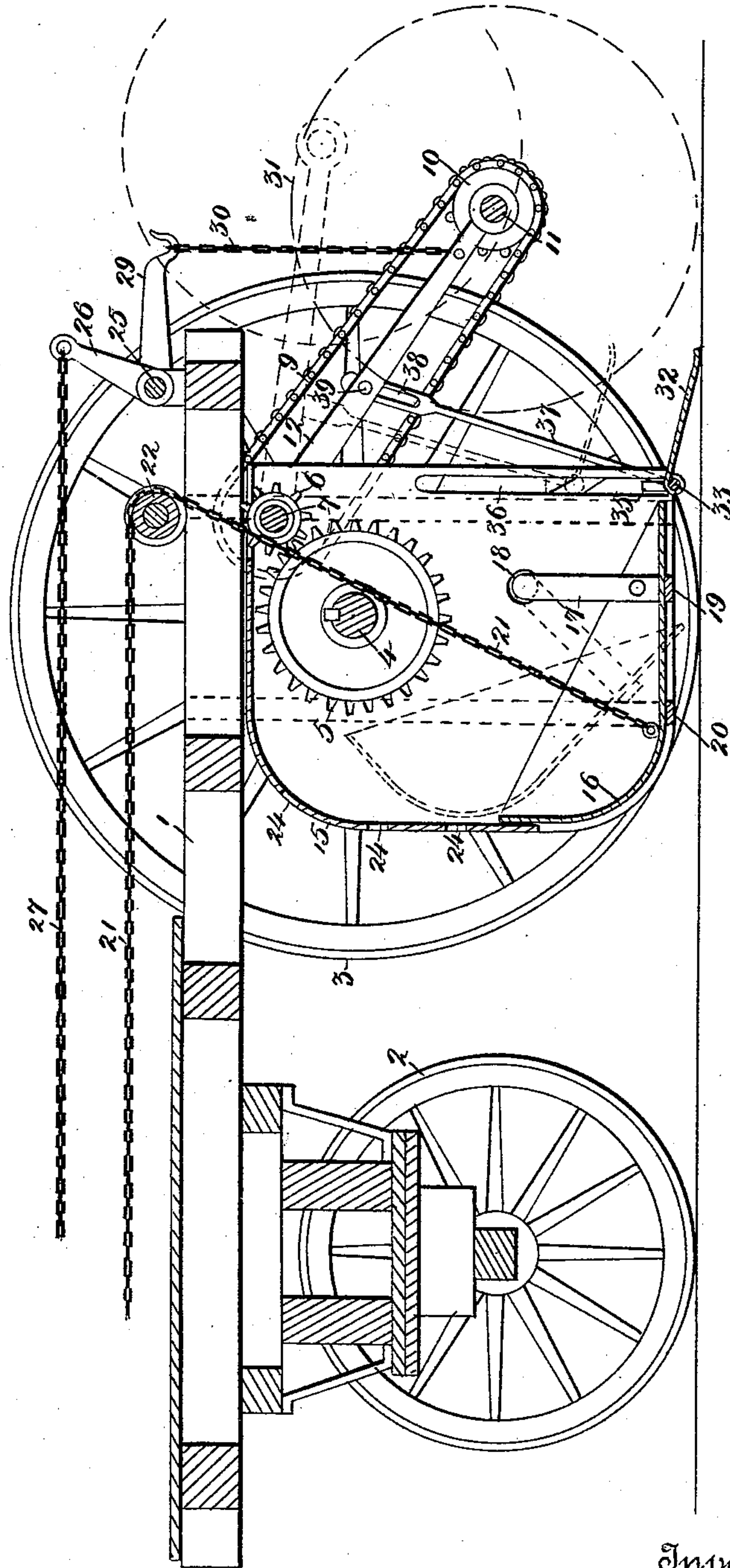
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4 Sheets—Sheet 3.

H. MUELLER, Jr.  
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No. 529,132.

Patented Nov. 13, 1894.



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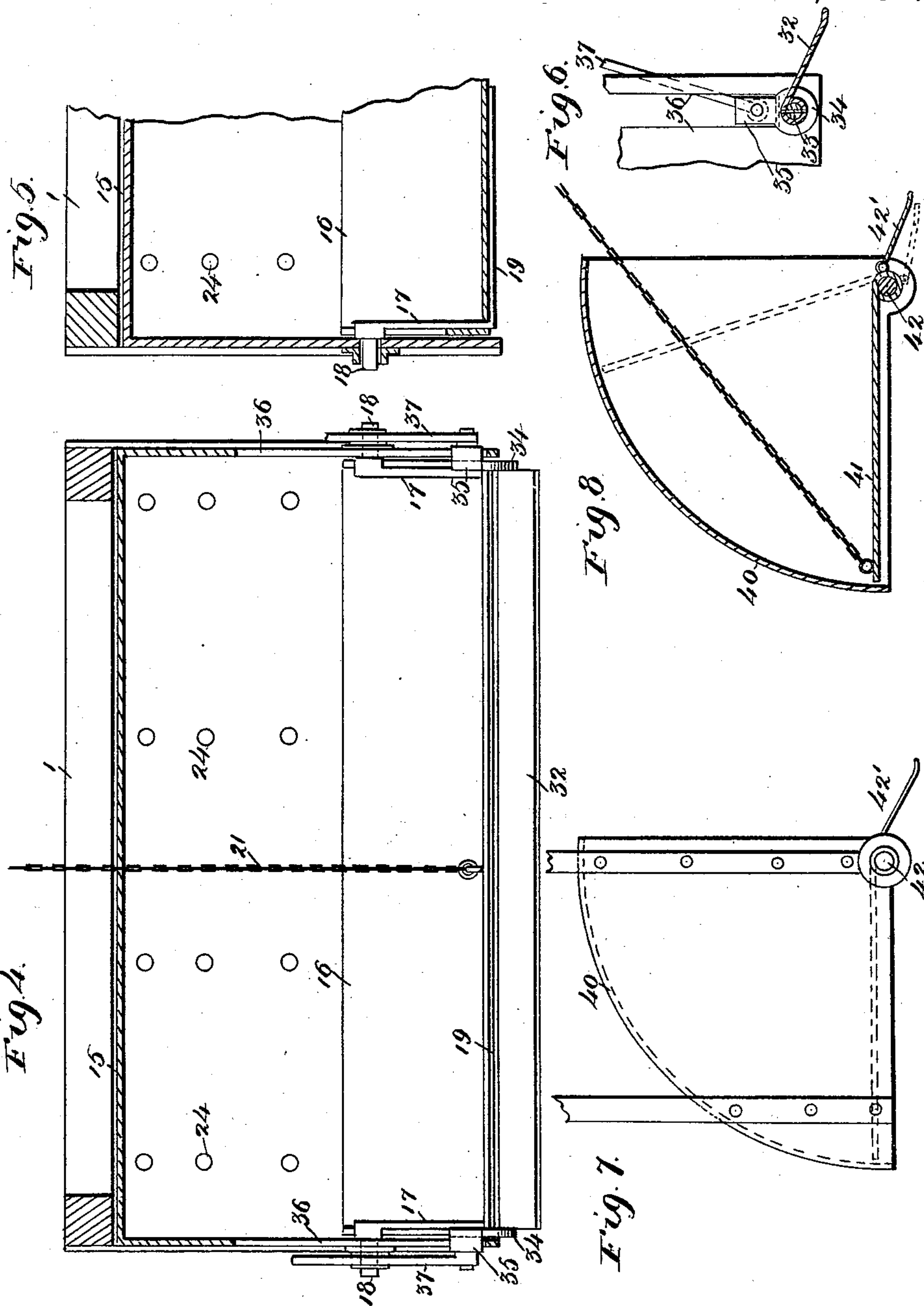
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4 Sheets—Sheet 4.

H. MUELLER, Jr  
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No. 529,132.

Patented Nov. 13, 1894.



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# UNITED STATES PATENT OFFICE.

HENRY MUELLER, JR., OF ST. LOUIS, MISSOURI.

## STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 529,132, dated November 13, 1894.

Application filed July 2, 1894. Serial No. 516,265. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY MUELLER, Jr., of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Street-Sweeping Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in street sweeping machines and consists in the novel arrangement and combination of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of my complete invention. Fig. 2 is a top plan view of the same. Fig. 3 is a middle vertical longitudinal section of the same. Fig. 4 is a transverse section taken on the line  $x-x$  of Fig. 1. Fig. 5 is a similar broken section on the line  $y-y$  of Fig. 1. Fig. 6 is a detail showing the guide slot for the movable block forming a part of the guard plate. Fig. 7 is a side elevation of a modified form of receptacle; and Fig. 8 is a cross section of the same.

The object of my invention is to construct a street sweeper and piler wherein the dirt will be swept into a receptacle forming a part of the same, and from which the dirt can be dumped at suitable intervals along the route of the sweeper, and thus be piled in readiness to be transferred to a cart.

In general the invention consists in a pivoted swinging dumping receptacle open at the end; in a revolving broom adjacent to the open end of the receptacle for sweeping dirt thereinto; in a perforated shield inclosing the dumping receptacle and directing the dirt thereinto as the latter leaves the broom, the said shield being perforated to permit the escape of air that accumulates in the rear of the receptacle from the rotating action of the broom; in a bottom guard plate for the receptacle for preventing the dirt from being forced under the receptacle during the rotation of the broom; in means for elevating the guard plate upon elevating the broom to enable the sweeper to readily pass over the pile that is dumped; in suitable means for elevating the broom after the receptacle has been dumped, and in other details to be hereinafter described.

Referring to the drawings, 1 represents the frame which is supported on wheels 2 and driving wheels 3. The wheels 3 are firmly secured to their shaft 4 the latter carrying at its medial portion a driving gear wheel 5 which meshes with a pinion 6 on a second shaft 7 to the outer ends of which are secured the sprocket wheels 8. Over each sprocket wheel 8 passes a sprocket chain 9 co-operating with sprocket wheels 10 secured at each end of the broom shaft 11. The broom shaft 11 is mounted between the ends of the arms 12, one end of each of which loosely embrace the shaft 7 adjacent and interior to the sprocket wheels 8, the said arms being of sufficient weight to keep the broom against the ground when in its sweeping position. Secured between the vertical members 13 of a depending U-shaped hanger, and between the depending supporting bars 14 attached to the frame, is secured a shield or hood 15 preferably of the shape as shown in Figs. 1 and 3. The lower end of the hood is open and between the inner side walls of the same is pivoted the dumping receptacle 16, the said receptacle being substantially tri-angular in cross section, the back of the receptacle being however curved so that it can better clear itself of the dirt when it is being dumped. The receptacle is suspended from the arms 17 located to one side of the center of the bottom thereof, whose trunnions 18 are supported within suitable bearings formed by the side walls of the shield or hood 15. The arms 17 are riveted to the sides of the dumping receptacle, and are continued through an opening in the bottom of the receptacle and then run along the bottom in the form of a continuous metal strip 19. (See Fig. 3.) This form of construction secures the swinging arms 17 rigidly to the receptacle. In its normal position the bottom of the receptacle rests upon the horizontal member 20 of the U-shaped hanger which carries the shield, said member 20 being located to one side of the center of the bottom and opposite to that from which the arms 17 extend, and the back of the receptacle rests against the rear inner wall of the shield. The shield is open at the bottom and partly in the rear, the opening extending to within a suitable distance of the top of the back edge of the



dumping receptacle, the back of the shield extending low enough however to overlap the upper edge of the receptacle and give the latter the necessary support when in its normal position. To the inside of the bottom of the dumping receptacle and approximately opposite the bottom strip 20 on which the receptacle rests, is attached one end of a chain 21 which passes over a grooved pulley 22 mounted on top of the frame 1, the chain then passing forward along the top of the frame to the lower end of a dumping lever 23 pivoted within easy reach of the driver near the forward end of the machine. Upon pushing the operating end of the lever 23 forward, the chain 21 will be drawn over the pulley 22 and the receptacle 16 will be swung about the pivoted supporting arms 17 and assume the position as indicated by dotted lines in Fig. 3, and the dirt will accordingly be dumped. As seen from the drawings, the back of the shield or hood is provided with openings 24 to allow for the escape of air currents generated by the rapid revolution of the broom in the act of sweeping the dirt into the receptacle. If the air were allowed to accumulate behind the receptacle its elastic or expansive action would have a tendency to repel a portion of the dirt thus swept into the receptacle.

During the dumping of the receptacle it becomes necessary of course to elevate the broom from off the ground to allow the sweeper to freely pass over the pile made by the dumping of the dirt in advance of the said broom. This is accomplished by the following mechanism: Mounted at the rear of the frame is a rock shaft 25 having an outwardly projecting arm 26 secured thereto near its medial portion. To the free end of this arm is secured one end of a chain 27 whose opposite end is secured to the lower end of an operating lever 28 pivoted to the frame within easy reach of the driver. The ends of the rock shaft carry hooks 29 from each of which depends a chain 30 whose lower ends are secured to the arms 12 a suitable distance from the broom shaft. It is obvious that as the free end of the operating lever 28 is pushed forward, the shaft 25 will be rocked, and the hooks 29 raised, thus raising the broom 31 secured to the broom shaft, off the ground.

The receptacle, or rather the shield or hood confining the same, is provided at the end adjacent to the broom, with a bottom guard plate 32 for preventing the dirt from being forced under the receptacle during the sweeping action of the broom. As best seen from Figs. 3 and 6 the free edge of the plate runs along the ground, and the opposite edge is rigidly secured to or folded over a bar 33 whose enlarged free supporting ends 34 have projecting guide blocks 35 adapted to slide vertically within the slots 36 formed near the front edges of the side walls of the shield 15. By this arrangement the guard plate is adapted to work up and down within the slots 36. It becomes desirable however to elevate this

guard plate with the elevation of the broom, after a pile has been dumped. This is accomplished by the following mechanism: To the outer face of each guide block 35 is pivotally secured one end of a connecting link 37 whose upper or free end is provided with a slot 38 within which is free to operate a pin or projection 39 secured to each arm 12 carrying the broom shaft. It is obvious that as the arms 12 are being elevated during the raising of the broom, they will carry the links 37 with them and these in turn will raise the guard plate as shown in dotted lines in Fig. 3, the plate always moving bodily and parallel to itself. The slots 38 in the links 37 too, allow the broom to always keep its full weight on the ground as it wears away through constant use.

The operation is of course obvious from the above description, it being clear that the broom will revolve in the proper direction to sweep dirt into the receptacle as the wagon advances and when the receptacle is once filled it is dumped as already indicated, and the broom and guard plate are elevated after the pile has been deposited.

In Figs. 7 and 8 I have shown a modified form of receptacle wherein the open bottom of the shield 40 has pivoted at its forward end a bottom plate 41 the plate rotating about its shaft 42 in the act of dumping. In this modification the outer enlarged edge of the plate 41 has the guard plate 42' hinged thereto, and as this edge rotates it has a tendency to slightly draw the guard plate inwardly as shown in dotted lines in Fig. 8, thus to some extent drawing the plate away to escape the dirt as it is being dumped from the hinged plate.

Having described my invention, what I claim is—

1. In a street sweeping machine, a suitable frame, a shield having an open bottom depending therefrom, a dumping receptacle pivotally mounted within the same, its rear end adapted to be elevated for dumping the receptacle, means located at the bottom of the open end of the shield for supporting the rear end of the receptacle when the latter is in its normal position, means for dumping the receptacle, a brush located adjacent to the open end of the same, and suitable running gear for said brush, substantially as set forth.

2. In a street sweeping machine, a suitable shield depending from the frame of the machine, a U-shaped hanger for the shield having vertical members and a horizontal member, said shield having an open bottom and a suitable cut-away portion in the rear wall thereof, a dumping receptacle having supporting arms secured to the sides thereof and their free ends pivoted to the inside lateral walls of the shield, the lower edge of the rear wall of the shield, and the horizontal member of the U-shaped hanger serving as supports for the dumping receptacle when in its normal position, and suitable means for



dumping or rotating said receptacle about the pivotal points of its supporting arms, substantially as set forth.

3. In a street sweeping machine a suitable frame, a perforated shield carried thereby, said shield being open along the front, bottom and portion of its rear wall, vertical slots along the edges of the side walls thereof, guide blocks within said slots, a guard plate rigidly secured between said guide blocks, broom supporting arms having a swinging motion, pivoted links secured or extending

from the guide blocks, said links having slots at their free ends, and suitable pins carried by the broom supporting arms operating within the slots carried by the links, substantially as set forth.

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

HENRY MUELLER, JR.

Witnesses:

JAMES J. O'DONOHUE,  
EMIL STAREK.