

No. 696,954.

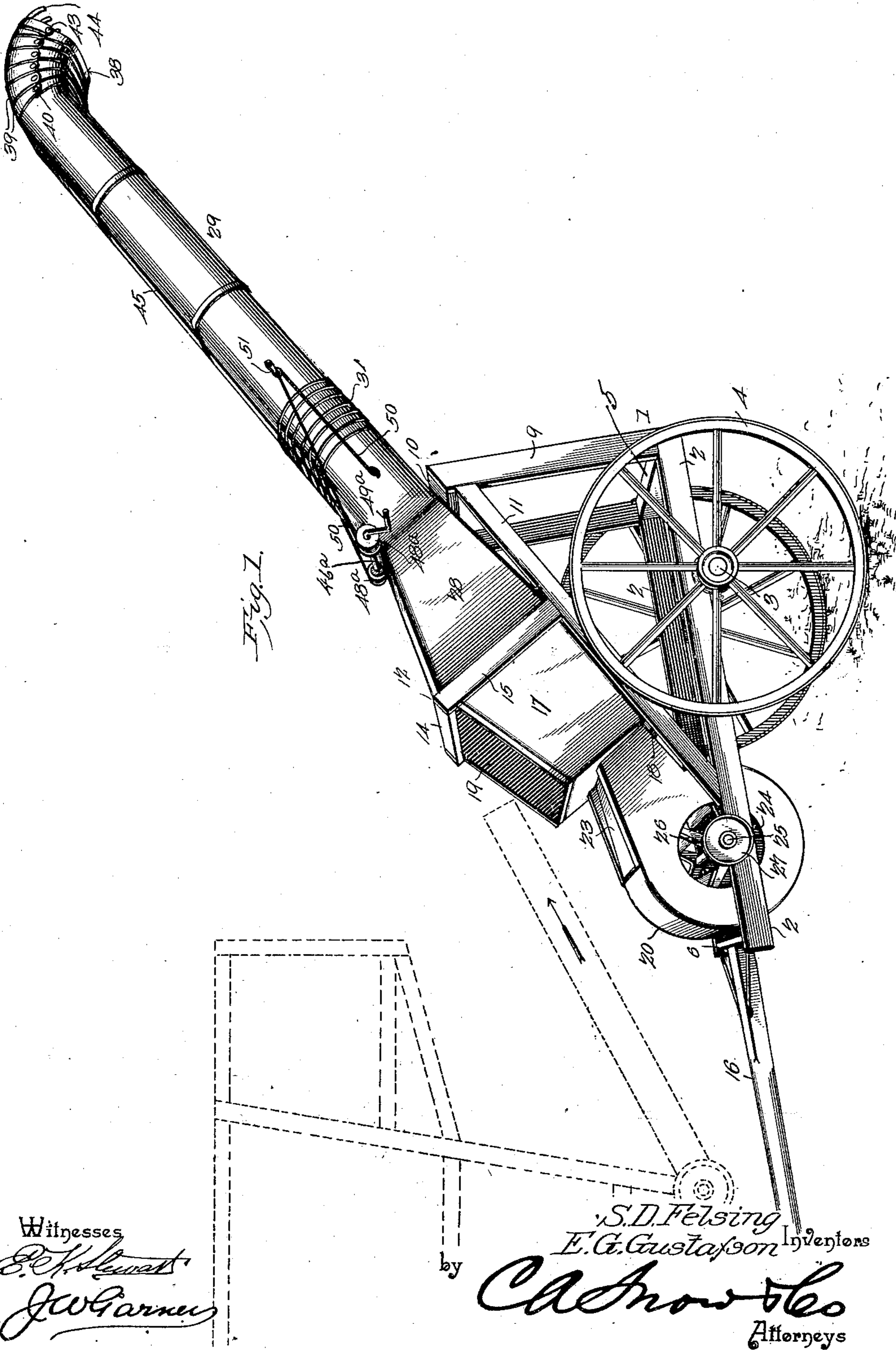
Patented Apr. 8, 1902.

S. D. FELSING & E. G. GUSTAFSON.
WHEELED STRAW STACKER.

(Application filed Aug. 2, 1901.)

(No Model.)

2 Sheets—Sheet I.



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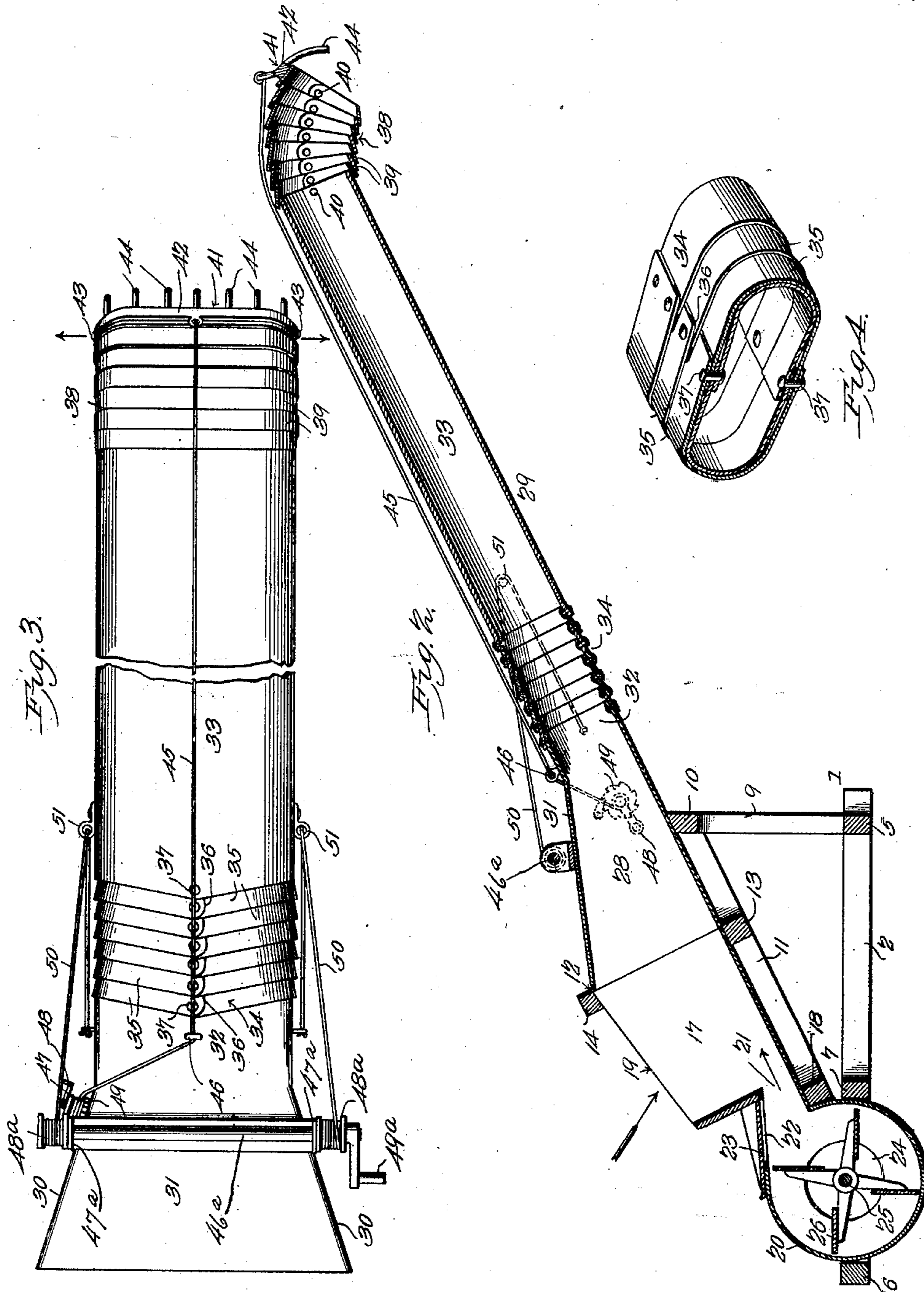
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Witnesses
E. C. Stewart
J. W. Garner

S. D. Felsing
E. G. Gustafson Inventors
by *C. A. Snow*
Attorneys

UNITED STATES PATENT OFFICE.

SAMUEL D. FELSING AND ELIAS G. GUSTAFSON, OF CROOKSTON,
MINNESOTA.

WHEELED STRAW-STACKER.

SPECIFICATION forming part of Letters Patent No. 696,954, dated April 8, 1902.

Application filed August 2, 1901. Serial No. 70,647. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL D. FELSING and ELIAS G. GUSTAFSON, citizens of the United States, residing at Crookston, in the county of Polk and State of Minnesota, have invented a new and useful Wheeled Straw-Stacker, of which the following is a specification.

Our invention is an improved wheeled straw-stacker adapted to be used in connection with threshing and separating machines for pneumatically carrying the straw therefrom and delivering the same upon a stack or rick and which is adapted to be readily moved from one point to another independently of the threshing and separating machine with which it is used.

One object of our invention is to provide a straw-stacker with an improved truck-frame, on which it is mounted and by means of which the stacker may be readily moved from one point to another over rough or hilly roads.

A further object of our invention is to effect improvements in the construction of the pneumatic stacking-tube.

A further object of our invention is to provide improved means for swinging the outer end of the stacker-tube laterally.

A further object of our invention is to provide the discharge end of the stacker-tube with an improved deflector for directing the straw downwardly onto a stack or rick, while permitting the air-blasts to be discharged outwardly to prevent the same from forming a hollow in the top of the stack or rick.

With these and other objects in view our invention consists in the peculiar construction and combination of devices hereinafter fully set forth and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a wheeled straw-stacker embodying our improvements, showing the same disposed in operative relation to a threshing and separating machine, the latter being indicated by dotted lines. Fig. 2 is a vertical longitudinal sectional view of our improved wheeled straw-stacker. Fig. 3 is a partial top plan view of the same. Fig. 4 is a detail sectional perspective view of the flexibly-jointed portion of the stacker-tube.

In the embodiment of our invention we

provide a wheeled truck-frame 1. The side bars 2 thereof are supported upon an axle 3, which is disposed near the rear end of said side bars and is provided with supporting-wheels 4. The said side bars 2 have their rear ends connected together by a cross-bar 5, their front ends connected together by a cross-bar 6, and a cross-bar 7 also connects said side bars together, the said cross-bar 7 being disposed at a suitable distance in rear of the front cross-bar 6. A pair of standards 9 rise from the side bars 2, near the rear ends thereof, and the said standards are connected together near their upper ends by a bolster 10. A pair of inclined forwardly-extending bars 11 have their rear ends secured to the standards 9, near the upper ends of the latter, and their front ends secured on the side bars 2 at a suitable distance from the front ends of the latter. A frame 12 is supported on the inclined bars 11, the said frame being rectangular in form and disposed in a plane at right angles to the bars 11, said frame comprising a lower cross-bar 13, an upper cross-bar 14, and studs or standards 15, which connect the ends of said bars 13 14 together. At the front end of the frame 1 is a draft pole or tongue 16, by means of which the wheeled stacker may be readily drawn from one point to another and over rough or hilly roads, as will be understood.

A hopper 17 is supported on the inclined bars 11 by the bars 13 18, which connect the same together. The front end of the said hopper is secured to and extends through the frame 12. The upper side of the hopper is open, as at 19, and preferably the side walls of the hopper converge rearwardly, as shown in Fig. 3. In front of the hopper is a drum 20, which discharges into the front end of the hopper at the lower side thereof, as at 21. There is an opening 22 in the upper side of the drum immediately in front of the hopper, which opening may be closed by a slide 23. The latter and the opening enable access to be attained to the interior of the drum. The heads or sides of the latter are provided with centrally-disposed air-intakes 24.

The shaft 25 of a revoluble fan or blower 26 is journaled in suitable bearings on the side bars 2. The said shaft extends through

the said drum 20, and the said revoluble fan or blower is disposed in the said drum, as shown. At one end of the fan-shaft is a pulley 27, by means of which power may be communicated to the fan or blower by a belt (not here shown) driven by one of the shafts of a threshing and separating machine when our improved wheeled straw-stacker is used in connection with a threshing and separating machine.

The intake or throat 28 of the pneumatic stacker-tube 29 is rectangular in cross-section, is supported on the bolster 10, and the front end thereof is secured to the frame 12 and communicates with the hopper 17. The said throat-section of the stacker-tube is contracted rearwardly, the sides 30 thereof converging and the upper side 31 thereof being downwardly inclined rearwardly, and the rear portion or throat 32 of the said throat-section is elliptical in cross-section, with flattened upper and lower sides. The straight inflexible section 33 of the stacker-tube is joined to the throat 32 by a flexible section 34, which admits of lateral movement of the said inflexible section 33. The said flexible section 34 comprises a series of semi-elliptical overlapping sections 35, the inner ends of the separate pairs of which overlap each other, as at 36, and are connected together by pivots 37, the axes of which are at right angles to that of the stacker-tube and disposed in a vertical plane.

At the outer end of the inflexible section 33 of the stacker-tube is a flexible discharge-section 38, comprising a series of overlapping telescopically-disposed semi-elliptical sections 39, which are connected together by pivots 40, the axes of which are disposed in a horizontal plane. It will be understood that the flexible discharge-section 38 of the stacker-tube may be raised or lowered at its rear end to discharge the straw from the stacker-tube at any desired angle. At the mouth of the said flexible discharge-section of the stacker-tube is a deflector 41. The same comprises a head or yoke 42, which is bent to conform to the shape of the upper side of the said discharge-section of the stacker-tube and has its ends pivotally connected thereto, as at 43, and a series of downwardly-extending tines 44, which project from the said yoke 42 and are disposed at suitable regular distances apart. A cord 45 is attached to the central portion of the said yoke 42, passes forwardly over the upper portion of the stacker-tube through a guiding eye or sheave 46 thereon, and is attached to a winding-drum 47, which is mounted on one side of the throat-section 28 of the stacker-tube and is provided with a hand-crank 48 and a pawl-and-ratchet mechanism 49 to lock said winding-drum against rotation in a reverse direction. By this means the flexible discharge-section of the stacker-tube may be disposed at any desired angle and the deflector may be disposed in rear of the same at

any desired angle, and it will be understood that the said deflector while allowing the air-blast to pass through the same over the top of the stack or rick will have its tines disposed in rear of the discharge-section of the stacker-tube in such manner as to intercept the straw and deflect the same downwardly upon the stack or rick, and hence the air-blast will be prevented from forming a hollow in the top of the stack or rick, and this objection heretofore existing in machines of this class will be obviated.

To swing the rear end of the stacker-tube laterally in either direction, we provide a shaft 46^a, which is mounted in bearings 47^a on the throat-section of the stacker-tube, is provided with winding-drums 48^a, and at one end with a hand-crank 49^a. Cords 50 are connected to the inflexible section of the stacker-tube on opposite sides thereof, as at 51, and the said cords are connected to the said winding-drums 48 and wound thereon in opposite directions. Hence by turning the hand-crank 49^a in the required direction the rear end of the stacker-tube may be swung laterally in either direction, as may be desired.

Our improved stacker-tube is elliptical in form in cross-section, with its upper and lower sides flattened, and this formation of the stacker-tube greatly facilitates the discharge of the straw pneumatically therethrough.

In operation our improved wheeled straw-stacker is disposed in rear of a threshing and separating machine, as is indicated in Fig. 1, and the straw from the machine is delivered automatically into the hopper 17, where it is caught by the air-blast created by the fan or blower and is hence carried pneumatically through the stacker-tube and discharged upon the stack or rick. The truck being provided with the pair of supporting-wheels at its sides and with the tongue may be disposed at any desired inclination by allowing the outer end of the tongue to rest on the ground or on a block, stone, or other object of suitable height, and hence the stacker-tube may be caused to discharge at any desired height above the ground.

Having thus described our invention, we claim—

1. A stacker-tube of the class described having a flexible discharge-section at its outer end adapted to be adjusted vertically, a pivoted deflector on said discharge-section, at the outer end thereof, said pivoted deflector having downwardly-projecting tines, disposed opposite the mouth of said discharge-section, and means, connected to said pivoted deflector to adjust the same and said flexible discharge-section, substantially as described.

2. A pneumatic stacker of the class described, comprising a truck having a tongue or the like at its front end and a pair of supporting-wheels at its sides, whereby the body of said truck may be disposed at any desired inclination, a stacker-tube having its inner

end supported on and secured to the body of said truck, a hopper at the inner end of said stacker-tube and a blower-fan having its shaft journaled in bearings on said truck, the
5 drum of said blower-fan communicating with said hopper at a point opposite the inner end of the stacker-tube, substantially as described.

3. A stacker-tube comprising a throat-section, an inflexible section, a flexible section
10 connecting said inflexible and throat sections, whereby said inflexible section may be swung laterally, a flexible discharge-section at the outer end of said inflexible section, said flexible
15 discharge-section being adapted to be adjusted vertically, simultaneously-operated

drums, cords connecting the same to opposite sides of said inflexible section, said cords being reversely wound on said respective drums, and a cord connected to the flexible
20 discharge-section of said stacker-tube to raise and lower the rear end thereof, substantially as described.

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

SAMUEL D. FELSING.
ELIAS G. GUSTAFSON.

Witnesses:

FRED DENNIS,
LEWIS ELLINGTON.