

No. 666,426.

Patented Jan. 22, 1901.

J. S. KEMP.
MANURE SPREADER.

(Application filed Nov. 7, 1900.)

(No Model.)

2 Sheets—Sheet 2.

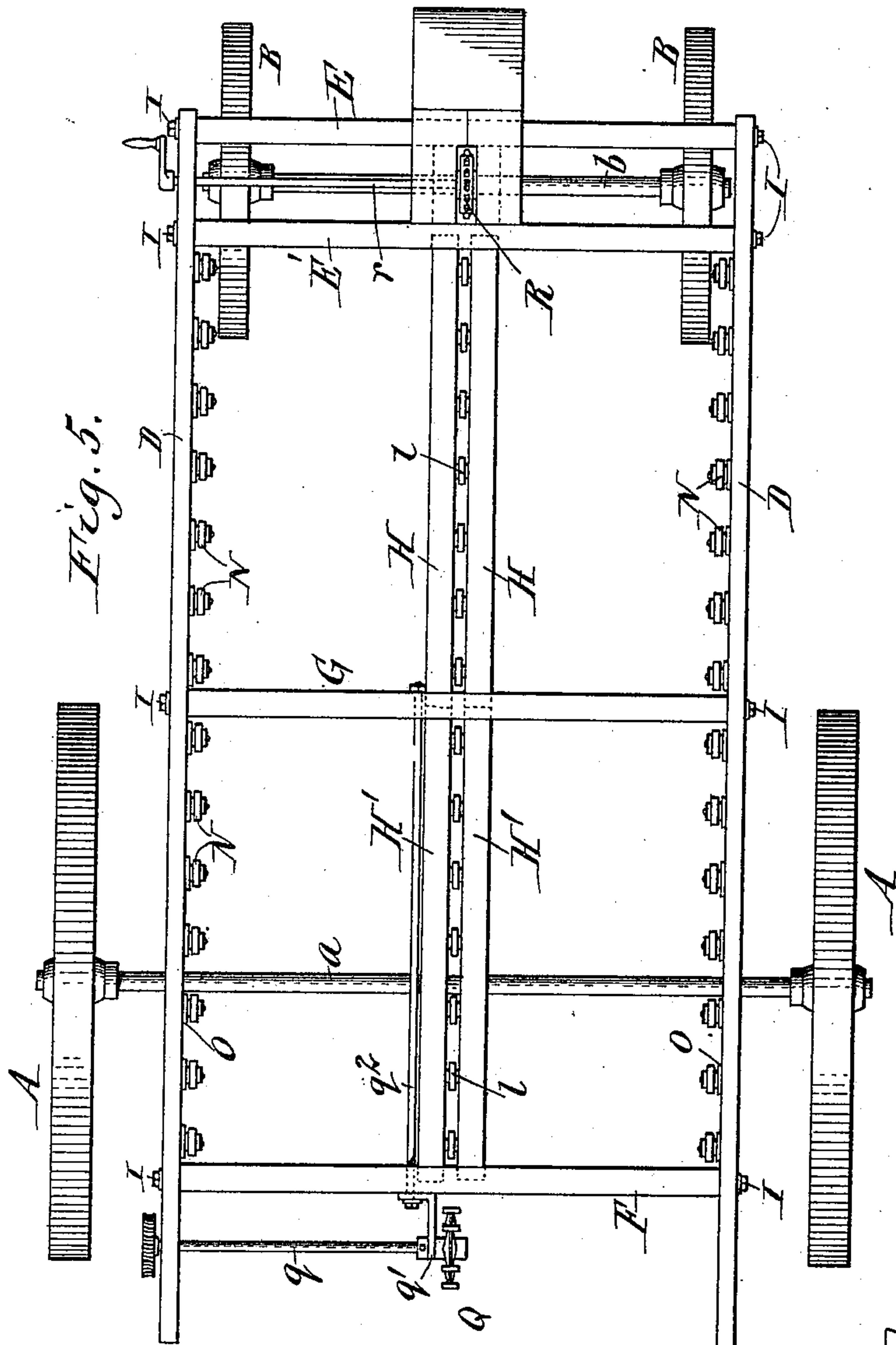


Fig. 5.

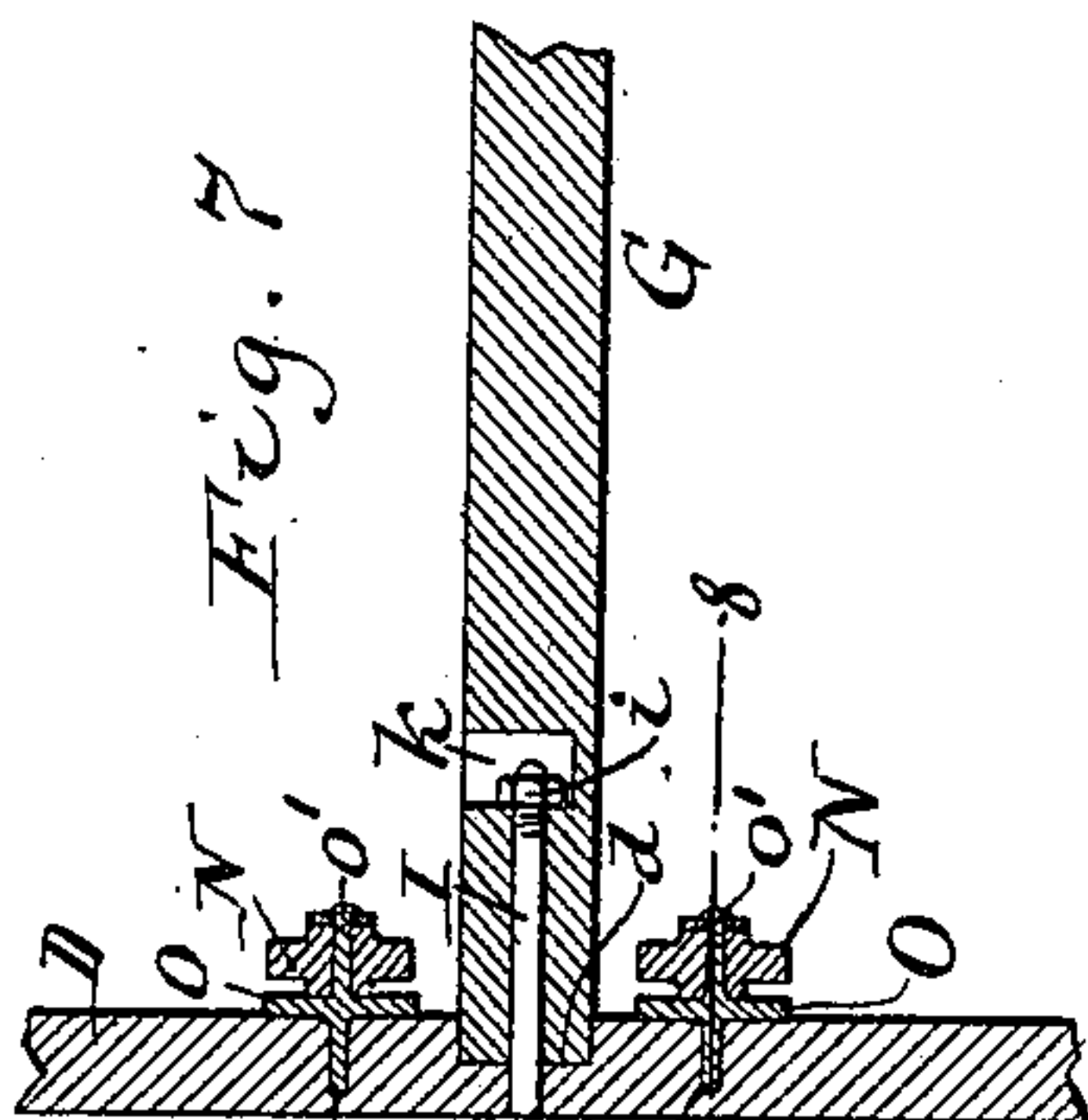


Fig. 7.

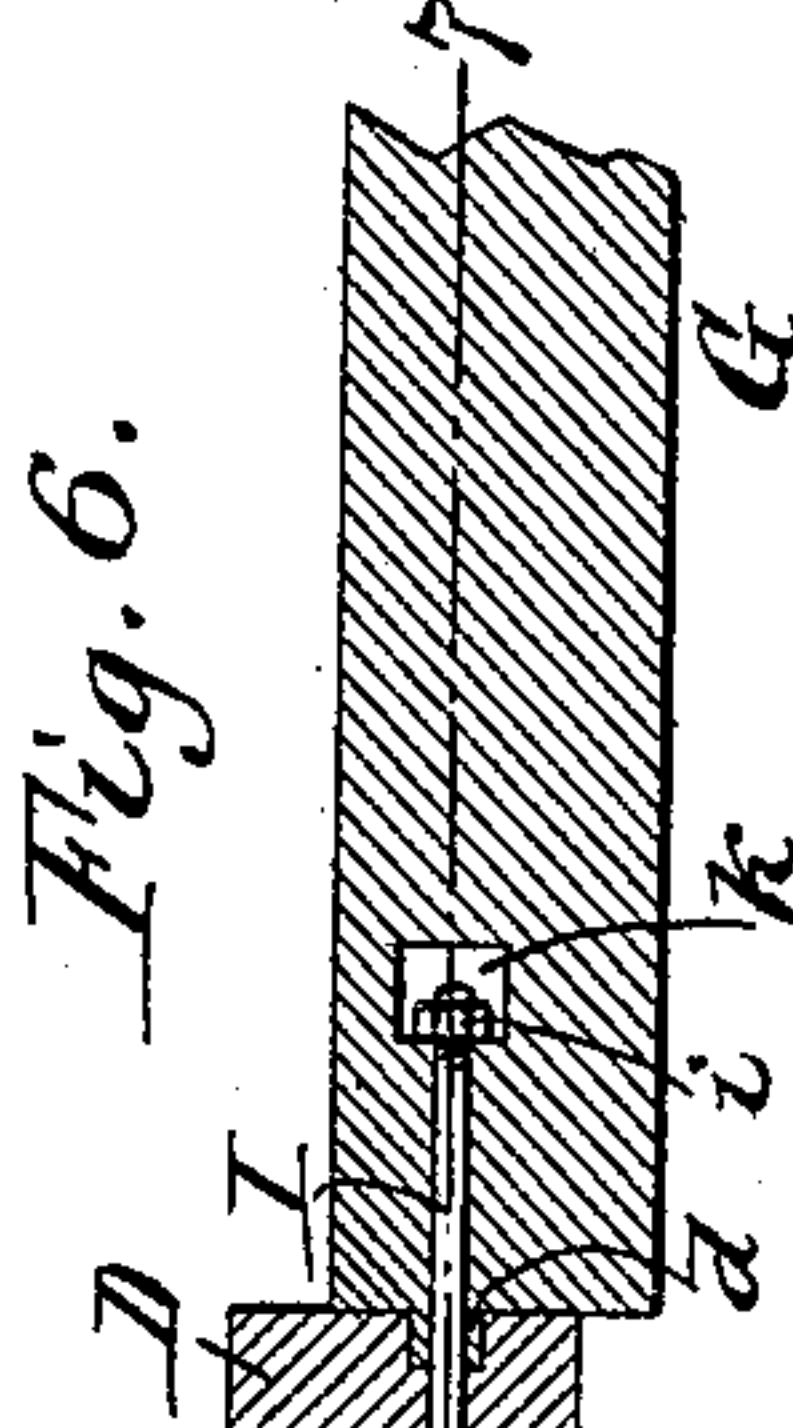


Fig. 6.

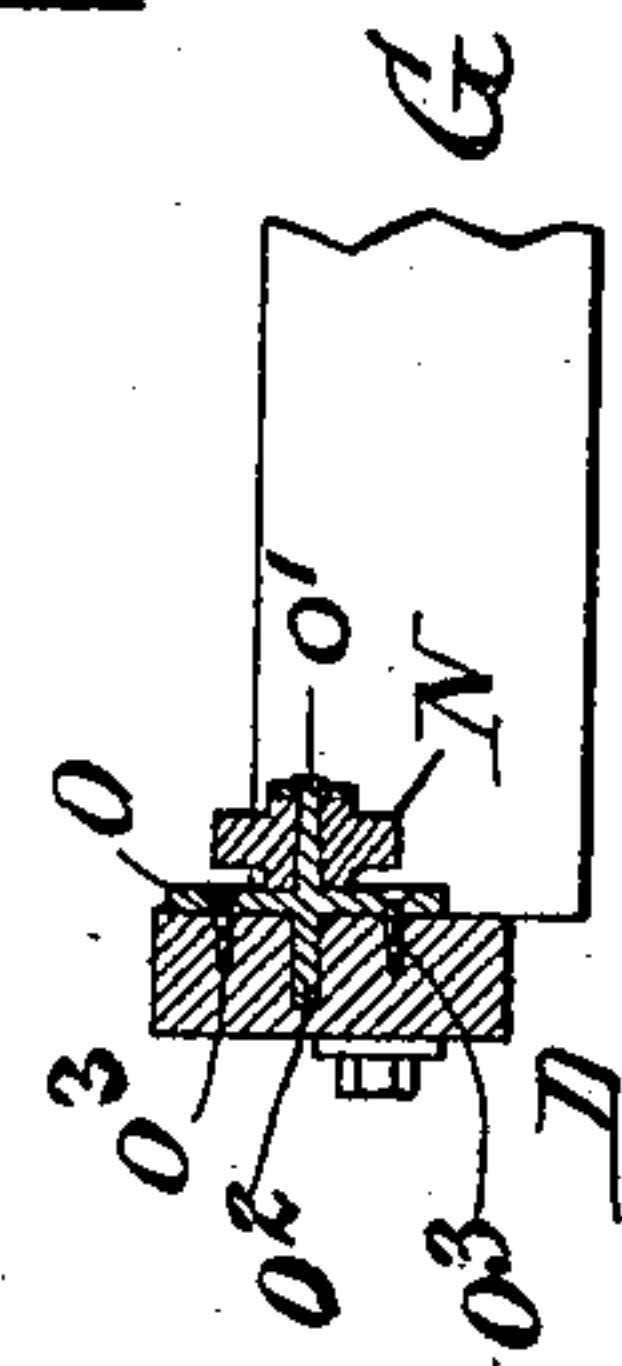


Fig. 8.

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MANURE-SPREADER.

SPECIFICATION forming part of Letters Patent No. 666,426, dated January 22, 1901.

Application filed November 7, 1900. Serial No. 35,710. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH SARGENT KEMP, a citizen of the United States, and a resident of Newark Valley, in the county of Tioga and State of New York, have invented a new and useful Improvement in Manure-Spreaders, of which the following is a specification.

This invention relates to that class of manure-spreaders which contain a box mounted on a wheeled frame and in which the pile or load of manure or other fertilizer rests upon a movable bottom, which is slowly moved backwardly in the box, whereby the rear end of the pile or load is fed against a toothed beater, which removes the manure or fertilizer gradually and throws or scatters the same rearwardly from the machine. In this class of manure-spreaders the movable bottom is formed by transverse slats, which are attached to a longitudinal endless chain arranged centrally in the body-frame of the machine, while the ends of the slats are attached to side chains, which extend only from end to end of the movable bottom. These machines are provided at the rear end with mechanism by which the traction of the rear wheels is transmitted to the endless chain in the proper direction for moving the bottom rearwardly in the box to feed the pile against the beater and at the front end with hand mechanism for moving the bottom forwardly in the box when the load has been distributed. Heretofore the body-frame of these machines has been provided with two longitudinal central sills for supporting the rollers on which the upper portion of the central chain rests. These central sills extended from end to end of the machine and carried on the under side of their rear ends the transverse shaft on which the sprocket-wheel is mounted, which engages with the central chain for moving the bottom rearwardly. These central sills were connected at the front and rear ends of the machine by cross-pieces, which were recessed or gained to receive these sills. A body-frame of this construction is liable to crack or check at the junction of the cross-pieces with the longitudinal members of the frame, whereby the frame is weakened and often rendered unserviceable.

The main object of my invention is to improve the construction of the body-frame with

a view of rendering the same more rigid and durable and furnishing more reliable supports for the rollers which support the movable bottom and for the shafts by which the bottom is moved.

In the accompanying drawings, consisting of two sheets, Figure 1 is a longitudinal sectional elevation of a manure-spreader provided with my improvements viewed from the right-hand side of the machine. Fig. 2 is a cross-section in line 2 2, Fig. 1, looking forward. Fig. 3 is a longitudinal sectional elevation, on an enlarged scale, of the rear portion of the body-frame and movable bottom viewed from the left-hand side of the machine. Fig. 4 is a fragmentary sectional elevation, on an enlarged scale, of the central sills and the cross-pieces on which they are supported. Fig. 5 is a top plan view of the body-frame of the machine. Fig. 6 is a vertical transverse section of one of the side sills and the end portion of one of the cross-pieces to which it is secured. Fig. 7 is a horizontal section of the same parts in line 7 7, Fig. 6, and showing two of the side rollers attached to the inner side of the side sill. Fig. 8 is a vertical section in line 8 8, Fig. 7.

Like letters of reference refer to like parts in the several figures.

A represents the rear wheels; *a*, the rear axle; B, the front wheels; *b*, the front axle; C, the fifth-wheel, and *c* the longitudinal bed-pieces, which are secured to the upper part of the fifth-wheel.

D represents the side sills of the body-frame, which extend from end to end of the machine.

E E' represent two front cross-pieces, which are arranged one behind the other and connect the side sills at the front. The longitudinal bed-pieces *c* are secured to these cross-pieces, space-blocks *e e'* being arranged, respectively, between the lower sides of these cross-pieces and the bed-pieces *c*.

F represents the rear cross-piece, which connects the rear portions of the side sills, and G represents an intermediate cross-piece, which connects the side sills between the second front cross-piece E' and the rear cross-piece F.

Two longitudinal sills, each composed of a front part H and a rear part H', are arranged side by side in the central portion of the

frame. The front part of each central sill extends from the second front cross-piece E' to the intermediate cross-piece G, and the rear part H' extends from the latter to the rear cross-piece F. These central sills are provided at their ends with tenons *h*, which are seated in mortises formed in the cross-pieces, as shown in Fig. 4.

The cross-pieces of the frame are secured to the side sills D by any suitable fastening devices. As shown in Figs. 6 and 7, each cross-piece is provided at its end with a tenon *d*, which is seated in a mortise formed in the inner side of the side sill. The sill and cross-piece are secured together by a screw-bolt I, which is inserted from the outer side of the side sill and passes through the tenon *d* into the cross-piece, where it is held by a screw-nut *i*, arranged in a mortise *k*, formed in the cross-piece.

The two central sills are arranged so far apart as to accommodate between them the rollers *l*, on which the upper portion of the central endless chain L is supported. These rollers are supported on the central sills by their journals, which are seated in openings formed in the sills, as indicated in Fig. 2, or in any other suitable manner.

M represents the slats of the movable bottom, which are secured at their middle upon the upper portion of the central chain L and at their ends upon side chains *m*, as usual.

N represents the side rollers, upon which the side chains are supported, as usual. These rollers are supported on the inner sides of the side sills by any suitable devices—for instance, by brackets O, Figs. 7 and 8. Each of these brackets is provided on its inner side with a journal *o'*, upon which the roller is mounted and which is headed to hold the roller in place, and on the outer side with a stud *o''*, which enters the side sill. The brackets are further secured to the side sills by nails *o'''*, which are driven through holes in the brackets.

P represents the upright boards of the box, which are secured to the body-frame, and *p* represents the follower, secured to the front end of the movable bottom.

q represents the shaft, which is arranged, as usual, at the rear end of the machine for driving the movable bottom and provided for that purpose at its inner end with a sprocket-wheel Q, which engages with the central chain, as usual. The shaft is journaled at its inner end in a bracket-bearing *q'*, which is secured to the rear side of the rear cross-piece F of the frame. The bearing is also secured to the intermediate cross-piece G by a longitudinal bolt or rod *q''*, which extends from the upper portion of the bracket forwardly through both cross-pieces. This rod resists the tendency of the bracket to tilt rearwardly at the top under the strain which the sprocket-wheel exerts against the movable bottom. The lower portion of the bracket is sufficiently

secured by a short bolt *q'''*, Fig. 3, which passes only through the rear cross-piece F.

r represents the hand-actuated front shaft, which engages with the front portion of the endless chain by a sprocket-wheel R, as usual. The lower portion of the chain passes from this sprocket-wheel rearwardly through an opening formed in the space-block *e'* underneath the second front cross-piece E'.

In order to carry the lower portion of the endless chain in rear of this cross-piece at such a height that the front wheels do not come in contact with the chain in turning, a chain-guide S is secured to the under side of the central sills in rear of the cross-piece E'. This chain-guide is a U-shaped or loop-shaped support, which is secured to the two central sills with the upper ends of its arms and supports the chain in its bight or on its lower portion which connects said arms. The lower portion of the guide is provided with a rearwardly-projecting extension *s* for supporting the chain for a suitable distance rearwardly.

My improved body-frame is very strong and rigid, not liable to crack, check, or split at the junction of its members under the strains to which it is subjected in use, and forms a firm and reliable support for the working parts of the machine.

I claim as my invention—

1. In a manure-spreader, a body-frame composed of side sills, front and rear cross-pieces, an intermediate cross-piece connecting the side sills between the front and rear cross-pieces, and longitudinal central sills composed of a front member arranged between the front cross-piece and the intermediate cross-piece and a rear member arranged between the latter and the rear cross-piece, substantially as set forth.

2. In a manure-spreader, the combination with a body-frame composed of side sills, front and rear cross-pieces, an intermediate cross-piece connecting the side sills between the front and rear cross-pieces, and two longitudinal central sills, each composed of a front member arranged between the front cross-piece and the intermediate cross-piece and a rear member arranged between the latter and the rear cross-piece, of a series of supporting-rollers arranged between the front members of the central sills, a series of supporting-rollers arranged between the rear members thereof, and supporting-rollers arranged on the side sills in front and in rear of the intermediate cross-piece, substantially as set forth.

3. In a manure-spreader, the combination with a body-frame having side sills, front and rear cross-pieces, and an intermediate cross-piece connecting the side sills between the front and rear cross-pieces, of a transverse rear shaft, a bracket-bearing for the same arranged on the rear side of the rear cross-piece, and bolts connecting said bracket with

the rear cross-piece and the intermediate cross-piece, substantially as set forth.

4. In a manure-spreader, the combination with the body-frame having side sills, front
5 and rear cross-pieces, and longitudinal central sills, of a guide-loop for the central chain rigidly secured with its arms to the under side of the central sills in rear of the front

cross-piece and supporting the chain on its lower portion, substantially as set forth. 10

Witness my hand this 23d day of October, 1900.

JOSEPH SARGENT KEMP.

Witnesses:

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D. A. MILLEN.