

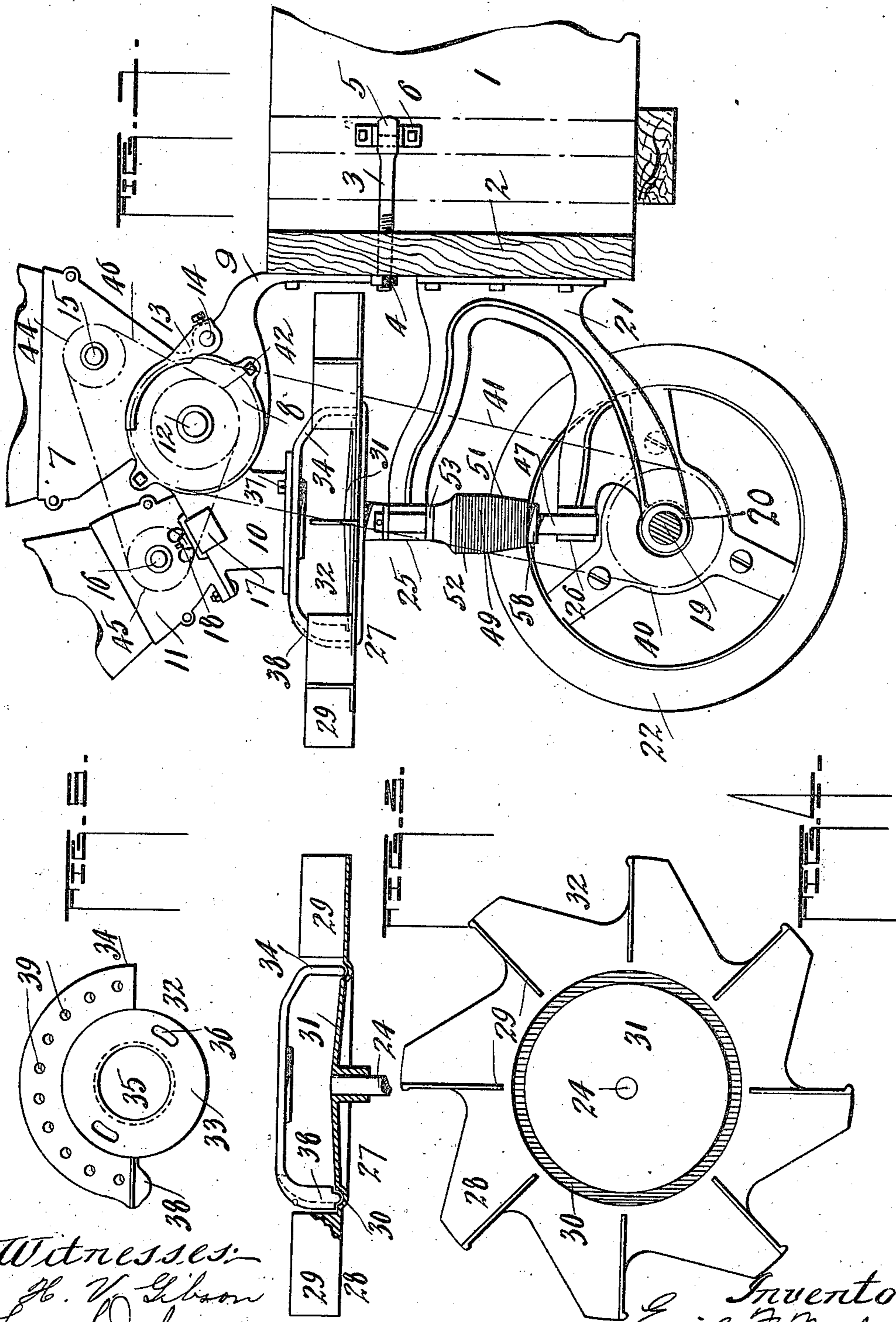
No. 847,290.

PATENTED MAR. 12, 1907.

E. F. MOLCK.
END GATE SEEDING MACHINE.

APPLICATION FILED JULY 14, 1904.

2 SHEETS—SHEET 1.



Witnesses:
H. V. Gibson
Lora C. Johns

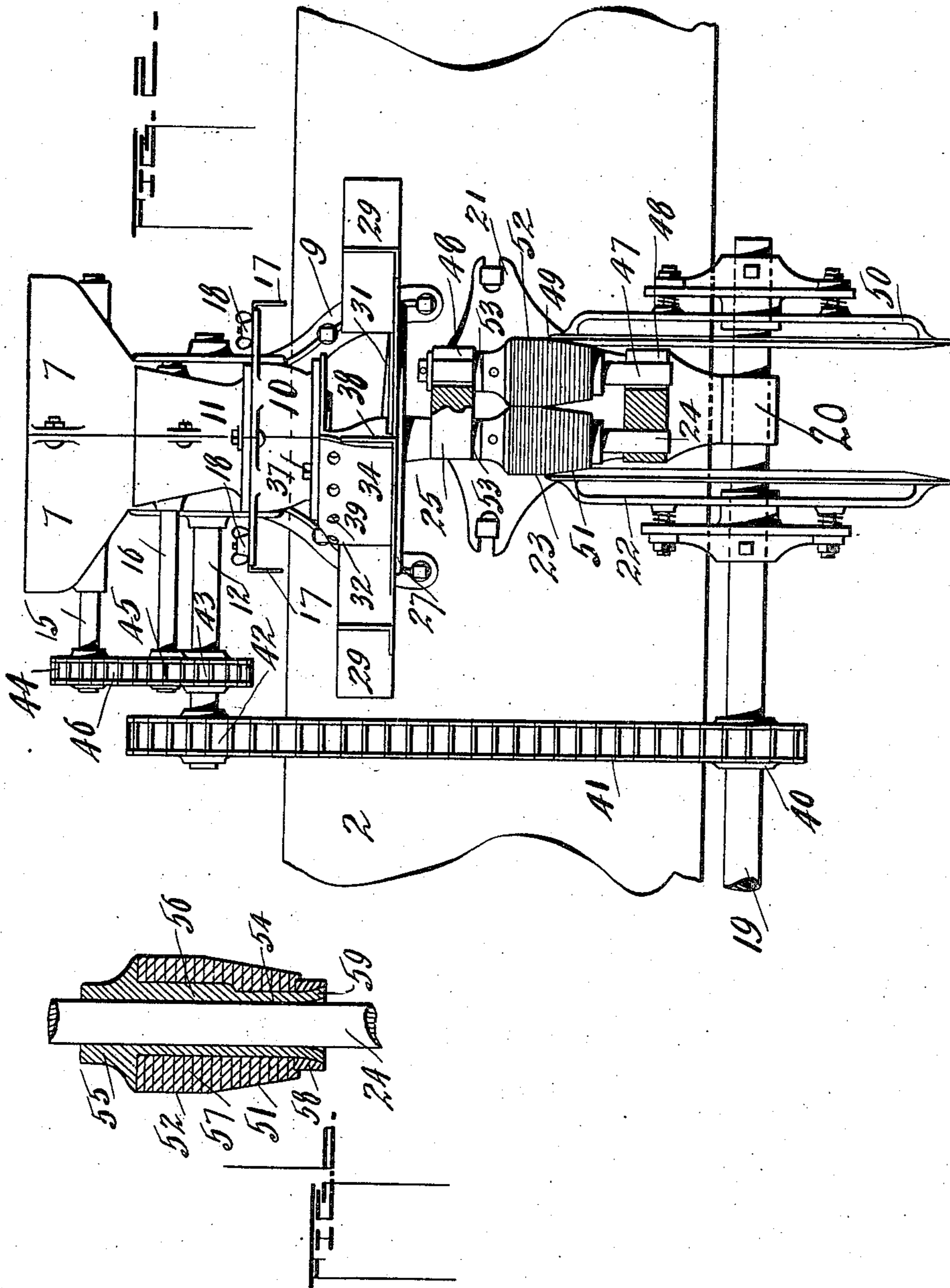
Inventor.
Emil F. Molek
By Chas. H. Porter, Atty.

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Witnesses:
H. V. Johnson
Cora C. Jones

Inventor:
Emil F. Molck
By Chas. LaPorte, Att'y.

UNITED STATES PATENT OFFICE.

EMIL F. MOLCK, OF SIBLEY, ILLINOIS, ASSIGNOR TO MEADOWS MANUFACTURING COMPANY, OF MEADOWS, ILLINOIS, A CORPORATION OF ILLINOIS.

END-GATE SEEDING-MACHINE.

No. 847,290.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed July 14, 1904. Serial No. 216,506.

To all whom it may concern:

Be it known that I, EMIL F. MOLCK, a citizen of the United States, residing at Sibley, in the county of Ford and State of Illinois, have invented certain new and useful Improvements in End-Gate Seeding-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has reference to seeding-machines, and relates particularly to what is known as "end-gate" seeders.

The invention relates more particularly to an end-gate seeding-machine, and is an improvement upon that shown in my patent dated July 7, 1903, No. 733,249.

The invention has for its further object an improved scattering-fan and to the feed overlying the same. The fan consists of a disk provided upon its upper surface with a series of blades extending radially from the periphery thereof to a point short of the center thereof and in the provision of an annular groove or channel in the body of the blade and within the circle described by the inner ends of the blades, of a semicircular shell supported to overlie the fan and having portions extending into the annular groove of said fan, the said shell provided with a deflecting portion adapted to direct material passing through said shell onto the outer portions of the fan and between the blades.

The invention has for its further object an improvement in the manner of securing the end-gate supporting the seeding device to a vehicle, to an improved feed and fan cooperating with said feed, and to a friction-drive and the manner of constructing the drive to insure a frictional engagement of the driving means for actuating said fan.

The invention consists, further, in the novel construction and combination of the several parts, as will be hereinafter set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of the specification, in which similar numerals of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improved seeding-machine, showing the same attached to an end-gate and the manner of support-

ing the end-gate on a vehicle. Fig. 2 is a front elevation of the machine shown in Fig. 1, with the devices for securing the end-gate to a vehicle omitted. Fig. 3 is a transverse section through the scattering-fan and showing in elevation the semicircular shell overlying the same. Fig. 4 is a plan view of the scattering-fan. Fig. 5 is a plan view of the shell which overlies the fan, and Fig. 6 is a vertical transverse section through a friction-pinion carried on the fan-shaft.

1 denotes a portion of the body of an ordinary farm-wagon, and 2 is an end-gate adapted to be supported thereby, to which is attached the supports of a seeding device. In practice instead of supporting the end-gate between the rear cleats on the sides of the wagon-bed the end-gate 2 is supported on the extreme end of the wagon-bed, as shown in Fig. 1, and is securely fastened by means of threaded rods 3 passing through the end-gate and having taps 4 for adjusting and locking the said rods, and the opposite ends of said rods are provided with inturned hooked portions 5, which have connection with cleats or brackets 6. The rods are threaded for the purpose of adjusting the same to the different forms of wagon-beds to which the end-gate is attached. This form of device insures a perfect and sure lock and is readily attachable and detachable to a wagon-bed.

The seeding devices proper comprise a hopper adapted to carry and feed such seeds as oats, wheat, barley, rye, &c., and also an auxiliary hopper adapted to contain and feed clover or grass seed. The main seeding-hopper consists of two cast sections 7, suitably connected together and formed with a cup portion 8, and the brackets 9 for fastening the same to the end-gate 2. The said sections 7 are provided with the forward depending extensions 10, which have communication with the cup portion 8 and are adapted to support the auxiliary hopper portion 11, which is formed of two cast sections somewhat similar to the sections 7, but smaller, which are secured together in the manner shown in the figures.

12 indicates a shaft which extends through the cup portion of the sections 7 and suitably journaled in the walls thereof, the same adapted to carry a fluted force-feed roller (not shown) within the cup portion 8, which is

similar to the usual force-feed in this class and similar types of machines. It is adapted, as customary in this style of machine, to provide for the regulation of the feed from the hopper portion 7 to the fluted roller, and to accomplish this, slidable valves 13 are provided operated from opposite sides of the feed-roller, positioned somewhat as seen in Fig. 1 and adapted to be adjustably secured on a spindle 14. In the upper part of the hopper portion 7 an agitating-shaft 15 is shown, on which is carried the usual agitators. (Not shown.)

16 denotes a shaft carried through and having bearing in the walls of the auxiliary hopper 11, on which is adapted to be carried a feed-roller, (not shown,) but similar to the one carried in the main hopper, and the discharge of the clover or grass seed from the auxiliary hopper is regulated by slidable valves 17, adjustably fixed by means of the thumb-nuts 18.

19 indicates a main driving-shaft, its inner end journaled in a bearing 20 of a bracket-support 21. Its outer end is adapted to be journaled in a bearing-support (not shown) adapted to be secured to the end-gate, and the said shaft is driven in the usual manner through clutch-driven devices from one of the vehicle-wheels. On the said shaft is carried a friction driving-wheel 22, yieldingly held against a driven pinion 23, carried on a vertically-disposed shaft 24, journaled at or near its upper end in a bearing 25 of the bracket 21 and its lower end journaled in a bearing 26, also of the bracket 21. On the upper end of the shaft 24 is carried a seed delivery or scattering fan 27. This fan consists of a disk provided with wing extensions 28, and extending up from the upper surface of the wings is shown a series of blades 29, which extend radially from the periphery of the said wings or the disk and stop short of the center of the said disk or scattering-wheel. The said scattering-wheel is provided with a depressed ring, annular groove, or channel 30, lying within a circle described by the inner ends of the blades 29 and the surface of the said scattering-wheel. The ring-depressed portion 30 is beveled or tapered, as at 31, for a purpose to be described, and the beveled or tapered portion of the said scattering-wheel is somewhat higher than the outer portion of the said wheel or the wing portions 28 thereof—that is to say, the upper surface of the inner wall of the channel 30 is higher than the upper surface of the outer wall of said channel, as shown in the drawings, and particularly in Fig. 3.

The axial center of the shaft 24 extends in a vertical plane through the center of the extensions 10 of the said feeding devices, the said extensions 10 forming a spout wherein the grain, grass, or clover seed is mixed and discharged upon the fan. Adjustably con-

nected or attached to a flange 31 of the said extensions 10 is a shell 32, adapted to overlies the tapered portion of the scattering wheel or fan beneath. The said shell is provided with the upper circular plate 33, and formed integral therewith is the outwardly-flared depending semicircular wall 34, the lower edge of which depends into the annular depression or channel 30 of the scattering-wheel, forming substantially a dovetail connection between the channel of the wheel and the lower edge of the wall 34. The plate 33 is provided with a delivery-opening 35, disposed centrally beneath the spout 10, through which the mixed seed passes and is deposited onto the scattering-wheel. The said shell is adapted to be adjusted by turning the same on its support, which will regulate the direction in which the mixed seed is discharged on the scattering-wheel, and is accomplished through the elongated slots 36 in the upper plate of the shell, through which bolts 37 are carried to adapt the adjustment or turning of the said shell. The edge of one side of the depending wall 34 of the said shell is provided with the radially and forwardly flared portion 38, which serves as a deflector for the mixed seed for deflecting the seed outwardly onto the wings of the scattering-wheel. The grain and grass or clover seed which is delivered through the spout 10 as it is discharged onto the scattering-wheel will be directed outwardly in the direction of rotation of the said wheel over the tapered surface thereof and onto the wings where the same is scattered broadcast through the action of the blades 29. The tapered portion of the said wheel being higher than the surface of the wings, it insures the seed being carried out over the annular depression 30, and the deflector 38, together with the dovetail connection of the lower edge of the wall 34, prevents any of the seed entering the channel 30 and being carried around on the wheel and insures the same being directed outwardly onto the wings between the blades. To provide a proper suction through the shell, the flared portion thereof is provided with a series of perforations 39, (see Fig. 5,) which adapts the free and easy intake of the seed and grain to properly discharge the same onto the central portion of the fan rotating below the said shell. Without the use of such perforations there might be a tendency to clog the seed and grain in the shell, although such perforations may be obviated if it is so desired.

The manner of driving the shaft 12 and imparting motion therefrom to the shafts 15 and 16 is by means of a sprocket-gear 40 on the shaft 19, connected by a sprocket-chain 41 with a sprocket-wheel 42 on the shaft 12. The shaft 12 also carries a sprocket-wheel 43, connecting sprockets 44 on the shaft 15 and 45 on the shaft 16 by means of a sprocket-chain 46.

To insure a uniform rotation of the shaft 24, which carries the scattering-wheel, I have provided a second shaft 47, being similar to the shaft 24, and the same is mounted to turn in the bearings 25 and 26. The said bearings are slotted, as at 48, to adapt the shaft to have slidable movement therein, and upon said shaft is carried a friction-pinion 49, frictionally driven by a gear-wheel 50 on the shaft 19, which said gear is similar to the one shown at 22 and is adapted to have yielding contact with the pinion 49. The pinions 23 and 49 are provided with tapered portions 51, which have contact with the bevel-faces of the gears 22 and 50, and the pinions are further provided with the circular coacting portions 52, and by such contact of the pinions the drive between the gear 22 and 23, assisted by the drive 50 for rotating the pinion 23, it will be seen that the shaft 24 will be uniformly driven and slipping of the pinion on the gear entirely obviated. On the shafts 24 and 47 I have provided the collars 53, bearing between the upper ends of the pinions and the bearing 25 of the bracket 21, and these said collars are adapted to take the wear off the upper portions of the pinions and prevent any binding of the pinions with the bearing 25.

Attention is called to the manner of constructing the pinion 23 or the pinion 49, the same consisting of an elongated sleeve 54, having the flanged collar portion 55 and the said sleeve portion thereof provided with a spline 56.

57 indicates a series of leather or other suitable washers or rings, which are carried upon the sleeve portion 54 and are turned down, so as to give the pinion the shape as shown in the figures, and the said leather washers or rings are suitably held on the said sleeve by means of a collar 58, which is slipped onto the lower end of the sleeve, and the end of the sleeve is expanded, as shown at 59 in Fig. 6, which locks the collar 58 and retains the washers or rings compactly on the sleeve, the spline formation on the sleeve preventing the turning thereon of the said washers or rings and insures that they turn therewith.

From the foregoing it is obvious that various changes may be made and details in the construction and arrangement resorted to without departing from the spirit and scope of the invention herein.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a device of the class described, the combination of a scattering-wheel provided with a series of blades and having an annular depression within the circle described by the inner ends of said blades, and an overlying feedway having portions projecting into the

annular depression of the said wheel, substantially as specified.

2. In a device of the class described, the combination of a scattering-wheel provided with a series of blades and having an annular depression within the circle described by the inner ends of the said blades, a feedway overlying the said wheel having a depending semicircular wall extending into the depression of the said wheel, and a portion of the said wall having a deflecting portion, substantially as specified.

3. In a device of the class described, a scattering-wheel having an annular tapered portion, a series of blades extending radially from the outer circle of the tapered portion to the periphery of said wheel, and an overlying feedway disposed within the circle of the said tapered portion of the wheel, substantially as specified.

4. In a device of the class described, a scattering-wheel having an annular tapered portion, a series of blades extending radially from the outer circle of the said tapered portion, that portion of the scattering-wheel supporting the blades being lower than that portion of the wheel described by the outer circle of the tapered portion thereof, and a feedway overlying the tapered portion of the wheel, substantially as specified.

5. In a device of the class described, a scattering-wheel provided with a central tapered body portion, a depressed annular ring in the plate encircling said tapered portion, a series of blades on said plate extending radially from the peripheral edge thereof to a point adjacent to the annular depression, the body of the plate supporting the blades being lower than that portion of the wall described by the outer circle of the tapered portion thereof, and a feedway overlying said tapered portion with portions depending into the annular depression, and the said feedway provided with a deflecting portion, substantially as specified.

6. In a device of the class described, the combination with a casing supporting seed-feeding devices, a scattering-fan revolvably carried beneath the casing, and a semicircular shell supported by the casing and overlying the said fan, the said shell provided with a seed-opening and having a deflecting portion, substantially for the purposes specified.

7. In a device of the class described, the combination of a casing supporting seed-feeding devices, a fan revolvably supported beneath said casing having a series of radial blades and a depressed annular ring in the body thereof within the circle described by the inner ends of the said blades, and a semicircular casing adjustably supported by the casing and overlying the said fan, and having a depending wall extending into the annular

depression of the fan, substantially for the purposes specified.

8. In a device of the class described, the combination of a casing supporting seed-feeding devices, a fan revolubly supported beneath the casing having a central tapered body portion and an annular depression in the body thereof, blades extending radially from the depression in the fan to the peripheral edge thereof, a casing adjustably supported by the first-mentioned casing and overlying the said fan, the said casing having a depending semicircular wall, the lower edge of which extends into the annular depression of the fan, and the said semicircular wall being provided with an outwardly and forwardly flared portion serving as a deflector, and with a series of perforations, substantially for the purposes specified.

9. In an end-gate seeding-machine, the combination of a wagon-bed, an end-gate for supporting seeding devices, and means for detachably supporting said end-gate against the rear end of the wagon, consisting of threaded rods passed through the end-gate engaged by nuts, and the opposite ends of the said threaded rods having inturned hooked portions adapted to engage cleats secured to the outside of said wagon-bed, substantially for the purposes specified.

10. In a device of the class described, the combination of a casing supporting seed-feeding devices, a fan-shaft, a fan carried by said shaft and disposed beneath the casing, a driving-shaft, a friction-wheel on the driving-shaft, a friction-pinion on the fan-shaft yieldingly engaged by said driving-wheel, the friction-pinion consisting of a sleeve, suitable rings carried by said sleeve and compactly held thereon by means of a collar secured on one end of the sleeve, the said sleeve being flared outwardly to engage the collar for the purpose of locking the rings in

position on the said sleeve, all substantially for the purposes herein described.

11. In a device of the class described, the combination of a casing supporting grain-feeding devices, and also grass-seed-feeding devices and the said casing provided with a depending spout forming a mixer for the grass and grain seed, a scattering-fan revolubly mounted beneath the spout of said casing, means for actuating said fan, a seed-delivery shell supported by the lower end of aforesaid spout, overlying the said fan and provided with a seed-opening communicating with the spout, the said shell formed with an outwardly-flared and depending semicircular wall provided on one side with a seed-deflecting portion, substantially for the purposes specified.

12. In a device of the class described, the combination with a casing supporting seed-feeding devices, a scattering-fan revolubly carried beneath the casing, and a semicircular shell supported by the casing and overlying the fan, the said shell provided with a seed-opening also a series of perforations in its upper wall and having a deflecting portion, substantially for the purpose specified.

13. In a device of the class described, the combination with a casing supporting seed-feeding devices, a scattering-fan revolubly carried beneath the casing, a semicircular shell having a seed-opening and a series of perforations in its upper wall, adjustably supported by the casing, and said shell having a vertical deflecting portion, substantially for the purpose specified.

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

EMIL F. MOLCK.

Witnesses:

CHAS. W. LA PORTE,
ROBT. N. McCORMICK.