

No. 769,126.

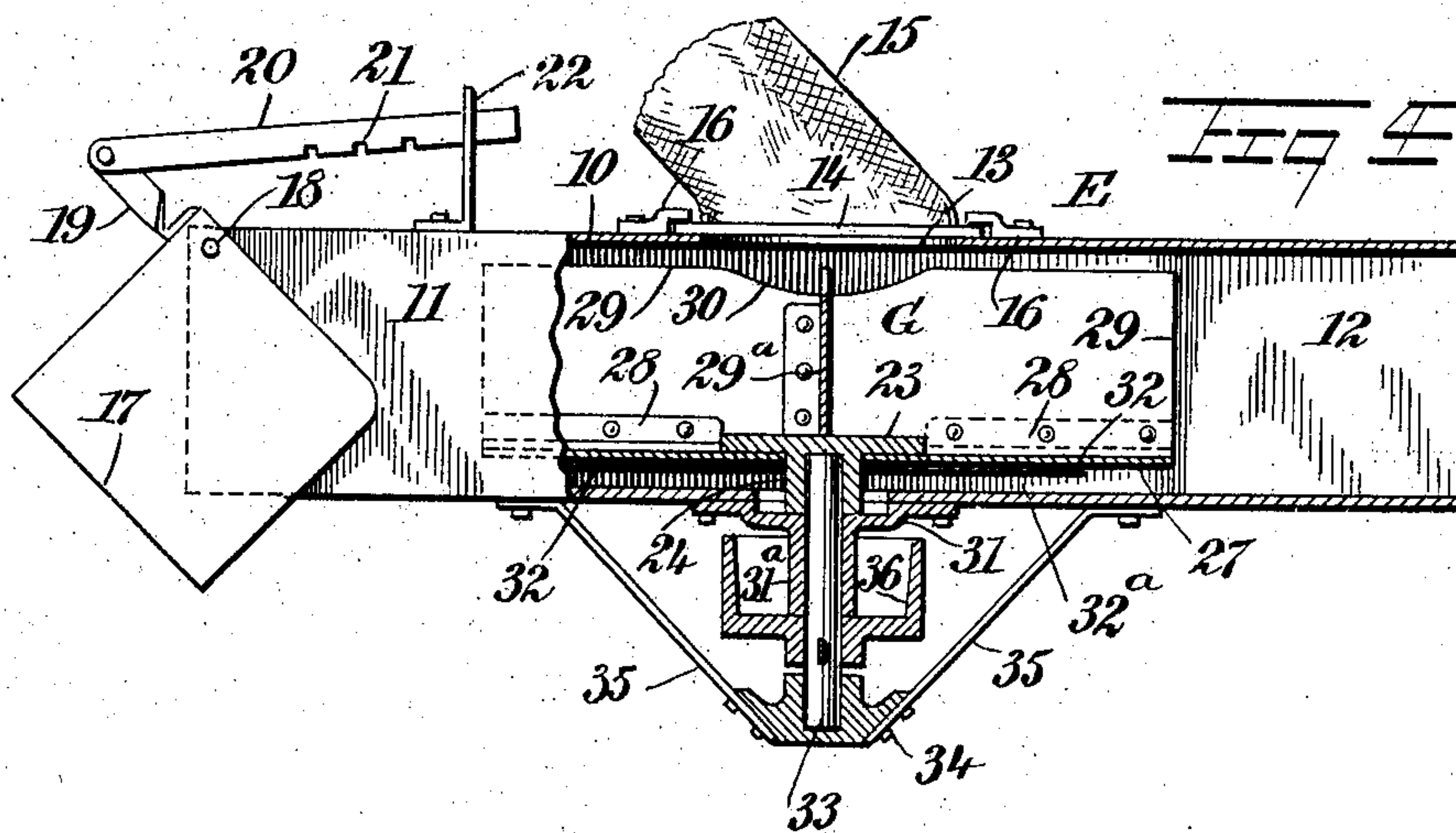
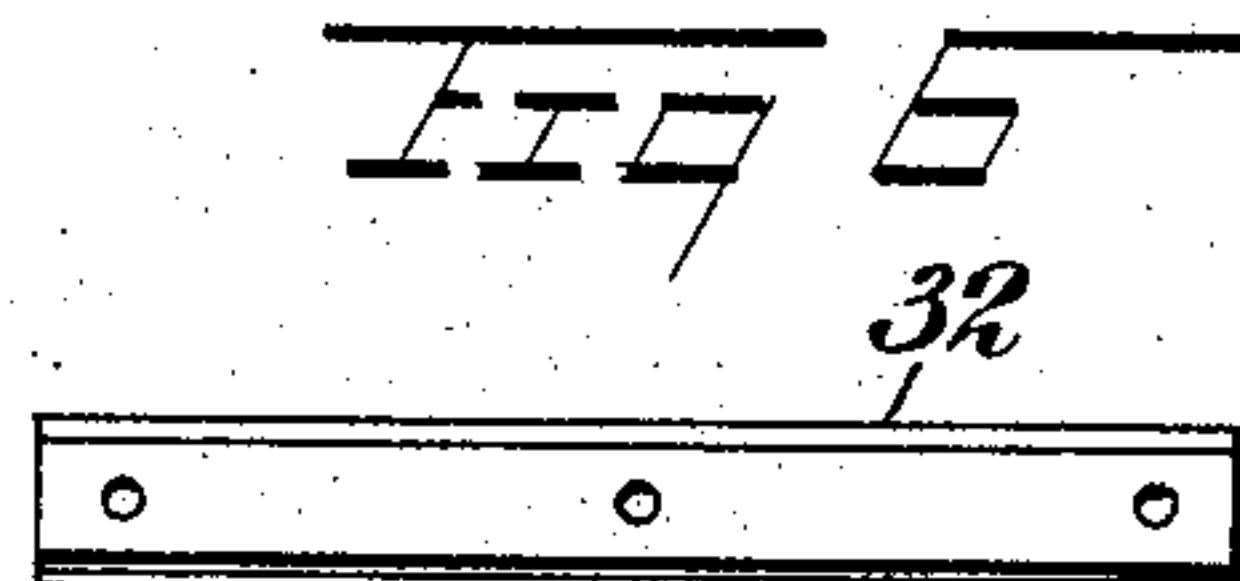
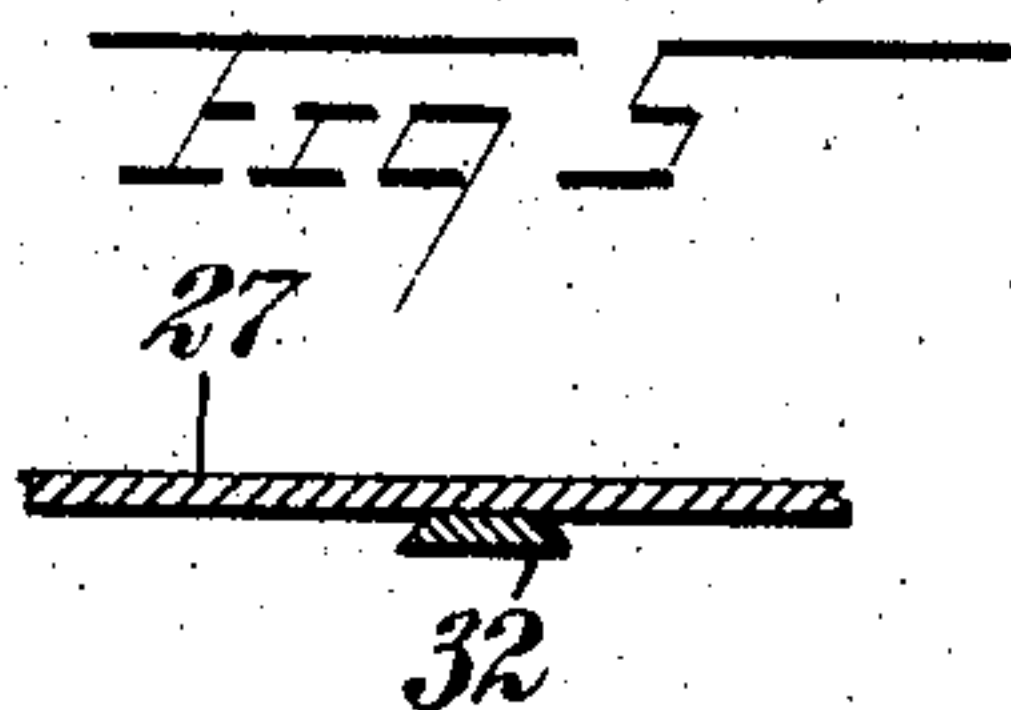
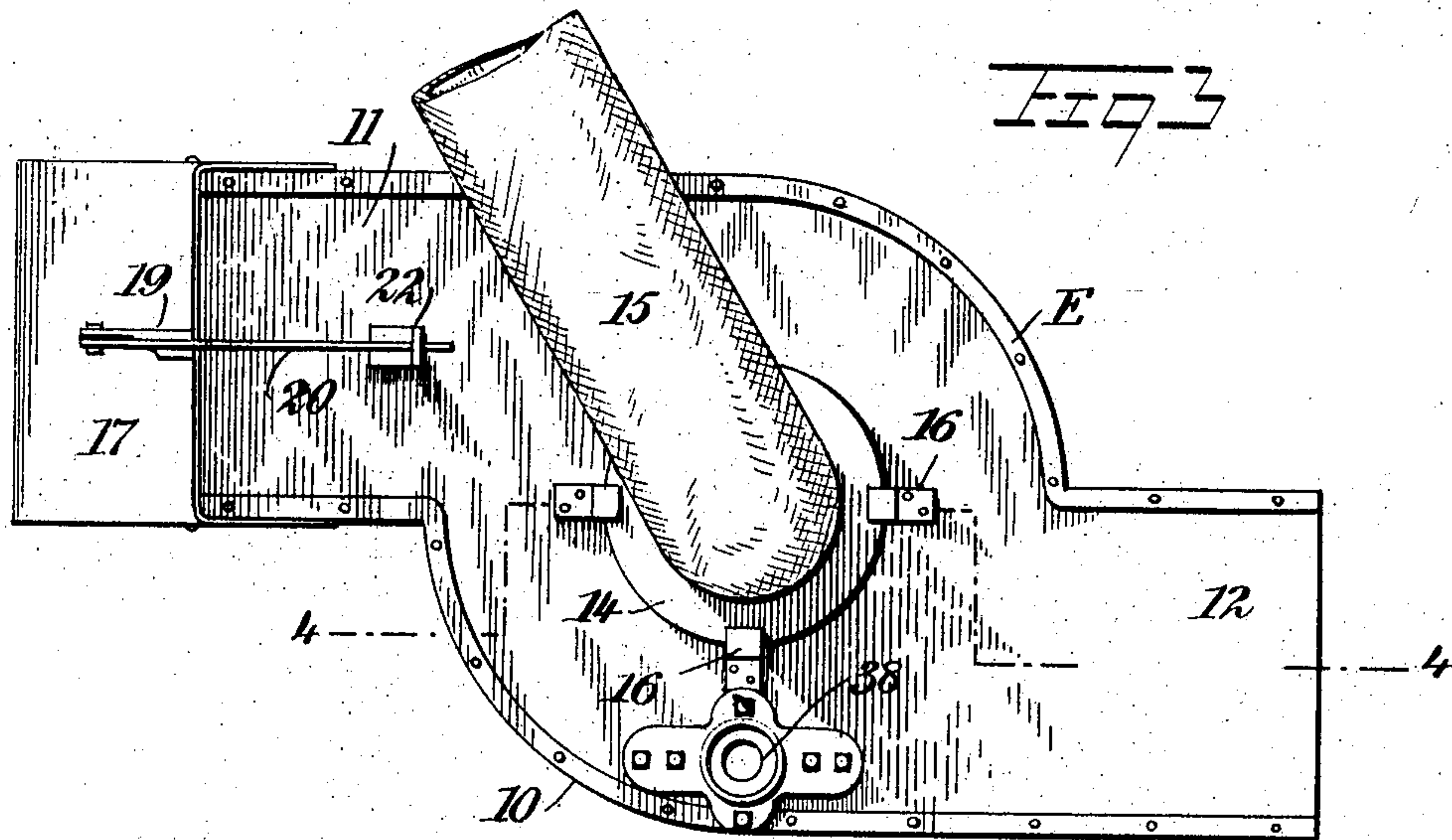
PATENTED AUG. 30, 1904.

E. L. & A. C. ADAMS.
APPARATUS FOR LOADING GRAIN CARS.

APPLICATION FILED JAN. 23, 1904.

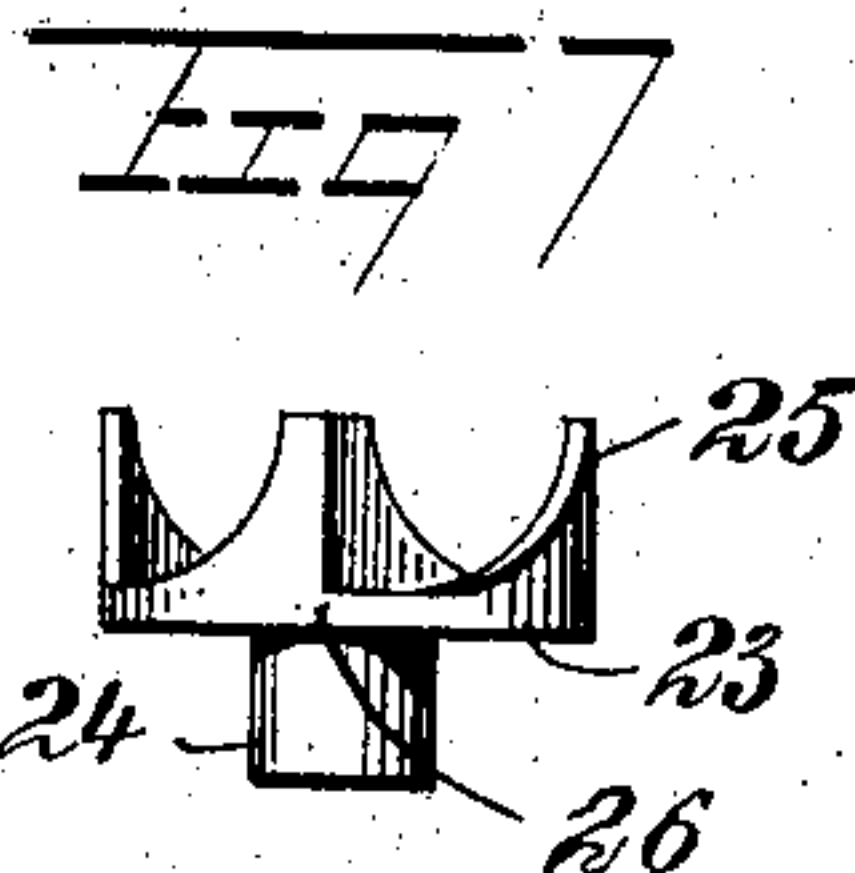
NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWIN L. ADAMS AND ANDY C. ADAMS, OF EDGAR, NEBRASKA,
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NEBRASKA.

APPARATUS FOR LOADING GRAIN-CARS.

SPECIFICATION forming part of Letters Patent No. 769,126, dated August 30, 1904.

Application filed January 23, 1904. Serial No. 190,404. (No model.)

To all whom it may concern:

Be it known that we, EDWIN L. ADAMS and ANDY C. ADAMS, citizens of the United States, and residents of Edgar, in the county of Clay and State of Nebraska, have invented a new and Improved Apparatus for Loading Grain-Cars, of which the following is a full, clear, and exact description.

The purpose of our invention is to provide a simple, durable, and economic form of apparatus especially adapted for loading grain into cars and to so construct the supply-head of the apparatus that the grain can be directed to any desired point in a car, so as to produce an automatic leveling of the grain and obviating the usual manual labor required for such purpose.

A further purpose of the invention is to provide a combined distributing and feed wheel within the supply-head which will act to receive the grain and force the same out in constant streams simultaneously at both ends of the supply-head, the said feed-wheel operating with the least possible amount of friction and so that any grain which may work its way beneath the feed-wheel will be thrown out with the burden of the grain at the delivery ends of the supply-head.

Another purpose of the invention is to provide a pivoted and folding support for the supply-head and a flexible tubular connection between said head and the source of grain-supply, enabling the apparatus to be quickly and conveniently introduced into a grain-car and withdrawn therefrom and likewise enabling the entire apparatus to be compactly folded adjacent to a receptacle containing the bulk of grain when the apparatus is not required for use.

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

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

Figure 1 is a transverse section through a grain-car and a side elevation of an apparatus

illustrated at work within the car. Fig. 2 is a plan view of the combined feed and distributing wheel. Fig. 3 is an enlarged plan view of the supply-head of the apparatus. Fig. 4 is a sectional side elevation of the supply-head, the section being taken substantially on the line 4 4 of Fig. 3. Fig. 5 is a detail section through a portion of the body of the feed and distributing wheel and a section through a clearance-bar connected therewith. Fig. 6 is a detail plan view of a clearance-bar, and Fig. 7 is a side elevation of the hub of the feed and distributing wheel.

A represents a portion of a grain-car, which may be of any desired type; B, an axle and wheels for the car; C, the tracks for the wheels, located on any suitable bed, and D a receptacle in which the grain is stored.

The apparatus consists mainly of a supply-head E and a support F, the latter being pivoted and constructed in sections to fold one section upon the other. The supply-head E, which is shown in enlarged views in Figs. 3 and 4, consists of a practically circular body-section 10, having outlets 11 and 12 at opposite sides. The shell of the head which has been described is hollow and within the body portion of the head a combined feed and distributing wheel G is mounted to rotate. At the upper central portion of the body 10 of the said supply-head E an opening 13 is made, and around this opening a flange 14 at the lower end of the flexible supply-pipe 15 is closely held on the body of the said supply-head by means of clamps 16, and the opposite end of the supply-pipe 15, as is indicated in Fig. 1, is connected with the source of grain-supply D at a point above the upper edge of the opening in the grain-car through which the said supply-head is introduced. A hood 17 is located at one or at both of the outlets for the said supply-head E, and, as shown at the left in Fig. 4, the hood when employed is provided with a pivot 18, connecting it with the upper outer side portion of an outlet-section of the said head, and at the upper outer portion of the hood an arm 19 is secured, extending outward and upward from the hood. A link 20 is pivoted to this arm, provided

with notches 21 in its lower edge, adapted to engage with a keeper or rack-bar 22, secured upon the upper face of the said supply-head, so that by adjusting a link 20 the hood 17, connected with this link, may be given any desired inclination, enabling the grain passing through the outlet thus protected to be directed either upward or downward at a greater or a less inclination, as may be found necessary to automatically level the grain in the car.

The combined feed and distributing wheel G is mounted to turn beneath the central portion of the inlet-opening 13 at the top of the supply-head E. In the construction of said combined feed and distributing wheel G a hub 23 is employed, having a sleeve 24 extending downward from its upper portion 26, which is solid and in the form of a disk, and from the marginal portion of the upper portion 26 of the hub teeth 25 extend in an upward direction, each tooth having one straight edge and an opposing concaved edge, as is clearly shown in Fig. 7.

The body of the wheel G consists of a disk or circular plate 27, having an opening therein to fit loosely around the sleeve 24 of the hub 23, so that the said body plate or disk 27 of the wheel extends beneath the top portion 26 of the hub, as is clearly shown in Fig. 4.

At each quarter of the circle of the body-plate 27 of the wheel G a radial angle-iron 28 is secured in any suitable or approved manner. These angle-irons have bolted or otherwise secured thereto upwardly-extending blades 29 and 29^a, the blades 29 being at right angles to the blades 29^a. In fact, the two blades 29 and 29^a intersect centrally at the upper portion of the hub 23. These blades pass between the teeth 25, so that as the hub 23 is revolved the blades 29 and 29^a are carried around with the hub, carrying with them the body plate or disk 27. Preferably the blade 29 is in one piece, extending from side to side of the body plate or disk 27; but the blade 29^a is usually made in two sections, connected at their inner ends and opposite sides to the central portion of the blade 29, as clearly shown in Fig. 2.

Where the blades 29 and 29^a connect, concavities 30 are formed in the upper edges of the blades, as is shown in Fig. 4, to facilitate the distribution of the grain fed to the said wheel through the supply-pipe 15, as the blades 29 and 29^a divide the wheel into compartments and grain is received in each of the compartments thus formed. The sleeve 24 of the hub 23 extends downward within a central depression 31 in the bottom of the body 10 of the supply-head E, as is shown in Fig. 4, and from this depression, which is provided with an opening, a sleeve 31^a is downwardly carried, the bore of which registers with the opening in the depression 31. A space 32^a is preferably formed between the

bottom of the supply-head and the under face of the body-plate 27 of the wheel G, as is also shown in Fig. 4, in order that the said wheel may turn with the least possible amount of friction.

As the wheel revolves the grain located in the compartments of the wheel is carried by centrifugal force through the outlets 11 and 12 of the supply-head E in a continuous stream, as is illustrated in Fig. 1; but it may happen that some grain will lodge between the bottom of the wheel G and the bottom 10 of the supply-head E in the space 32^a and serve to clog the said wheel. In order to expel any grain thus finding lodgment in the space 32^a, clearance-bars 32 are secured to the under face of the body portion 27 of the wheel. The said clearance-bars are usually four in number, being located radially between the opposing members of the blades 29 and 29^a, as is shown by dotted lines in Fig. 2.

In Figs. 5 and 6 the clearance-bars are shown more in detail, in which it will be observed that each clearance-bar is dovetail shape in cross-section, being narrowest at the top and widest at the bottom. As the wheel G revolves the fronts of the clearance-bars tend to discharge the air, while their back portions create practically a suction, so that the said clearance-bars will tend to lift the surplus grain, or the grain in the space 32^a, and force it to one or the other of the outlets for the supply-head.

A shaft 33 extends up into the sleeve 24 of the hub 23, being attached to the said sleeve 24, and this shaft extends downward through the sleeve 31^a of the body of the supply-head, and the lower end of the shaft 33 is mounted to turn in a bearing 34, supported by truss-bars 35 or their equivalents, which bars are attached to the bearing 34 and to the bottom of the supply-head E, as is shown in Figs. 1 and 5. A pulley 36 is secured to the shaft 33, and a suitable driving-belt 37 (shown in Fig. 1) is passed over this pulley and is carried to any suitable source of power.

At one side of the body 10 of the supply-head E sockets 38 are formed at the top and at the bottom of the head. These sockets are adapted to receive the outer ends of the upper members 39 and the lower members 40 of the pivotal support F for the said head, as is illustrated in Fig. 1. This support F is made, preferably, in two sections—an outer section *f* and an inner section *f'*. The inner section at the top and at the bottom is provided with pins 41 or their equivalents, and these pins enter suitable keepers 42, secured to the grain-receptacle D. Each section *f* and *f'* of the support is provided with suitable braces 43. The inner section *f'* of the support is preferably provided with a pivot-shaft 44 at its outer end, and the inner or opposing end of the section *f* of the said support is pivoted to this shaft, so that one section of the support

may fold upon the other and both sections may be folded close to the receptacle D.

In order that the two sections f and f' may be held rigidly in alinement with each other when the supply-head is in use, shoes or clips 45 and 46, preferably U-shaped in cross-section, are pivoted, for example, to the upper and lower members of the outer section f , as is also shown in Fig. 1. When the two sections of the support are to be held rigidly together, these clips 45 and 46 cover the points of connection between the two sections. Links 47 and 48 connect the shoes or clips 45 and 46 with a shifting-bar 49, the connection being at one end of the shifting-bar, and the opposite end of the shifting-bar is connected by links 50 with, for example, the upper portion of the outer section f of the support. When the shoes or clips 45 and 46 are in position to hold the sections f and f' together, the shifting-bar 49, as is shown in Fig. 1, has a thrust in direction of the receptacle D. When it is desired to fold one of the supports upon the other and to remove the supply-head from the car, the shifting-bar 49 is moved in direction of the outer end of the support, which movement will simultaneously carry the clips or shoes 45 and 46 out from their locking engagement with the members of the support. Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In an apparatus for loading grain-cars, a body-casing having outlets at opposite sides, adjustable hoods for the said outlets, a supply-pipe leading into the upper portion of the body-casing, a wheel provided with a disk-body mounted to revolve around the hub of the wheel, the said wheel being mounted to revolve in the body adjacent to the outlets, said wheel being also provided with upwardly-extending plates at angles to each other, dividing the said wheel into a number of compartments, open at the top to receive material from the supply-pipe, clearance-bars secured to the under face of the disk-body of the wheel, and a driving mechanism for the said wheel, as described.

2. In an apparatus for loading grain-cars, a body-casing having outlets at opposite sides, a supply-pipe leading into the body-casing at its center, a wheel mounted to revolve in the said body-casing beneath the supply-tube and adjacent to the outlets, the said wheel consisting of a hub, a disk-body mounted to revolve around the hub, teeth extending upward from the hub, blades extending upward from the body-disk of the wheel, passing across the toothed portion of the hub, and a driving mechanism for the said hub, which hub as it revolves imparts motion to the body-disk through the medium of the said blades, as specified.

3. In an apparatus for loading grain-cars, a body-casing having outlets at opposite sides,

a supply-pipe leading into the body-casing at its center, a wheel mounted to revolve in said body-casing beneath the supply-pipe and adjacent to the outlets, the said wheel consisting of a hub, a disk-body mounted to revolve around the hub, teeth extending upward from the hub, blades extending upward from the body-disk of the wheel, passing across the toothed portion of the hub, a driving mechanism for the said hub, which hub as it revolves imparts movement to the body-disk through the medium of the said blades, hoods adjustably located at the outlets for the body-casing, and clearance-bars secured to the under face of the body-disk of the wheel, for the purpose described.

4. In an apparatus for loading grain-cars, a body-casing, a support for the same, the body-casing being provided with outlets at opposite sides, a supply-pipe connected with the said body-casing at its upper portion, a wheel mounted to revolve in the body-casing below the supply-pipe and in close proximity to the outlets, the said wheel comprising a disk-body, means for revolving the said body, upwardly-extending blades crossing the disk-body, being located at angles to each other, and clearance-bars dovetail shape in cross-section, secured to the bottom portion of the body, for the purpose described.

5. In an apparatus for loading grain-cars, a body-casing having an outlet, a supply-pipe leading into the body-casing, a combined feed and distributing wheel mounted to revolve in the body-casing beneath the supply-pipe and adjacent to the said outlet, the said wheel being provided with a series of open partitions and the said supply-pipe being of a flexible material, and a support pivotally connected with said body-casing, which support is constructed in pivotally-connected sections, locking devices for the said sections, and a shifting device for the locking devices, as described.

6. In an apparatus for loading grain-cars, a support for said apparatus, comprising two pivotally-connected sections, one adapted for pivotal attachment to a fixed support and the other being adapted for pivotal attachment to the apparatus, the two sections being pivotally connected, shoes adapted to embrace the sections at their points of pivotal connection, a shifting device for the said shoes, and link connections between the shifting device and the shoes, the links being at angles to one another when the shoes are in locking position, as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

EDWIN L. ADAMS.
ANDY C. ADAMS.

Witnesses:

W. R. WARD,
J. W. JONES.