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(54) 发明名称: 一种全滚动摩擦链板托轮给料机

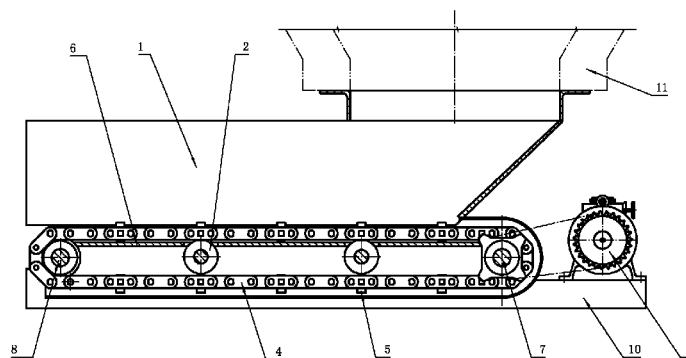


图 1

(57) Abstract: A fully rolling frictional chained plate carrier wheel material feeder. Scraping plate chains (4) surround a wheel-guarding material-guiding support plate (6), a driving gear sprocket (7), supporting chained plate wheels (2), and a redirection gear sprocket (8) to be engaged on the driving gear sprocket (7) and the redirection gear sprocket (8). The scraping plate chains (4), material scraping plates (5), and the wheel-guarding material-guiding support plate (6) are separated by gaps. The material scraping plates (5) are provided between two scraping plate chains (4). The outer surface of the supporting chained plate wheels (2) is higher than the upper surface of the wheel-guarding material-guiding support plate (6). The scraping plate chains (4) and the material scraping plates (5) revolve around the supporting chained plate wheels (2) and drive the rotation of the supporting chained plate wheels (2). No sliding friction is produced between the scraping plate chains (4), the material scraping plates (5), and the supporting chained plate wheels (2). Moreover, no friction is produced between the scraping plate chains (4), the material scraping plates (5), and the wheel-guarding material-guiding support plate (6). The supporting chained plate wheels (2) roll and rotatively support the scraping plate chains (4) and the material scraping plates (5) to convey materials. This implements fully rolling frictional material conveyance and material loading for a scraping plate feeder, the supporting chained plate wheels (2) are installed to reduce the power of a driver, and, sliding friction and loss are prevented between

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scraping plates and the wheel-guarding material-guiding support plate (6), thus significantly reducing noise and increasing service life.

(57) 摘要：一种全滚动摩擦链板托轮给料机，刮板链（4）环绕护轮导料托板（6）、驱动齿轮滚筒（7）、托链板轮（2）及改向齿轮滚筒（8）扣合在驱动齿轮滚筒（7）及改向齿轮滚筒（8）上，刮板链（4）、刮料板（5）与护轮导料托板（6）之间设有间隙，两刮板链（4）之间设置刮料板（5），托链板轮（2）外表面高出护轮导料托板（6）上端面，刮板链（4）、刮料板（5）旋转至托链板轮（2）带动托链板轮（5）旋转，刮板链（4）、刮料板（5）与托链板轮（2）不产生滑动摩擦，且刮板链（4）、刮料板（5）与护轮导料托板（6）不产生摩擦，托链板轮（2）滚动旋转支撑刮板链（4）、刮料板（5）输送物料，实现刮板给料机全滚动摩擦输料装料，安装托链板轮（2）降低驱动器的功率，免除刮板与护轮导料托板（6）滑动摩擦损耗，大幅降低噪音，提高了使用寿命。

Fully Rolling Friction Chain Plate Carrier Wheel material feeder

Technical Field

The invention belongs to a mechanical field, in particular to a fully rolling friction
5 chain plate carrier wheel feeder.

Background

At present, all the material feeders in use have complex structure, high
manufacturing cost and poor performance. For example, the old chain belt material
10 feeder is composed of multiple armor pieces that are connected by multiple threading
strips, and steel shafts that thread rows of multiple armor pieces are connected by
multiple chains from two sides of the rows of armor pieces. There is leakage of material
between the armor pieces. Even if a leak-proof strip is set between the armor pieces,
the leak-proof strip is easy to fall off to often cause leakage. The return material at the
15 gap between the armor pieces is serious. The use of multiple chains has complex
structure, high manufacturing cost, complex process of manufacturing and threading
the armor pieces, serious material waste and low production efficiency. Although the
structure of a chain plate feeder is simple and the wear parts are few in the feeding
process, its material scraping plate and retainer plate have sliding friction. Because the
20 length of the material feeder is more than a few meters, the material scraping plate and
the retainer plate are long distance sliding friction, which causes great friction
resistance, high energy consumption, a lot of wear and tear, and loud noise. When the
old scraper material feeder is used to transfer thousands of tons of coal, the materials
at a bin opening is piled up at the tail of a scraper conveyor, which makes the material
25 scraping plate and a scraping support plate convey materials with sliding friction under
a high pressure of the bin and the piling up materials, causing serious mutual wear.
Especially when the material feeder is restarted with heavy load after shutdown, a
driving motor is often overloaded and burned due to large sliding friction resistance
and overstocked material pile, resulting in short service life of the whole machine.
30 Because the return material carried at two sides, higher than the retainer plate, of the
material scraping plate is very serious, and the chain of the chain plate material feeder
is provided inside a guiding groove, the materials enter into the gap of the chain to
produce the return material. The chain plate material feeder is mainly used for a coal

system. Because coal mining uses a lot of water to reduce dust and the water content of the washed coal is greater, the coal sludge water flowing from the periphery of the retainer plate of the chain plate material feeder causes serious pollution and waste. In order to solve the problems of material leakage, coal sludge water leakage and return material, the lower part of the frame of the old chain belt material feeder and the chain plate material feeder is added with a return material collector, which increases the height of the whole machine and adds a complicated operation component of cleaning return coal. The old return material collector is equipped with a separate power drive mechanism, which is complex in structure, large in volume and weight, and occupies large space on site, resulting in large investment costs of site infrastructure and equipment. Because the power drive mechanism is provided separately, the return material collector is started only after a large amount of return coal is piled up on site. Due to the solidification and compaction of coal sludge, the return material collector is broken, and the motor is burnt out and cannot work, which delays production, and increases equipment input, manufacturing cost and maintenance cost, but has a poor use effect, thus further causing the waste of manpower and material resources. In order to solve the above problems, through decades of manufacture and research, the invention puts forward a fully rolling friction chain plate carrier wheel material feeder.

Summary

The invention is implemented by the following technical solutions.

A fully rolling friction chain plate carrier wheel material feeder includes: a guiding groove, a support chain plate wheel, a support chain plate wheel supporter, a scraper chain, a material scraping plate, a wheel-guarding material-guiding support plate, a driving gear roller, a redirecting gear roller, a driver and a frame. The guiding groove is connected with a bin opening. A lower part of the guiding groove is fastened to the frame. The guiding groove is connected with the frame fixedly or movably. The wheel-guarding material-guiding support plate is arranged at the lower part of the guiding groove and is supported by the frame, or is hooked up to the guiding groove. The material scraping plate is arranged between two scraper chains. The support chain plate wheel supporter includes a link support chain plate wheel track. The link support chain plate wheel track is arranged on the wheel-guarding material-guiding support plate or is integrated with the wheel-guarding material-guiding support plate. The support chain plate wheels include a link support chain plate wheel, a scraper support

chain plate wheel or a frame support chain plate wheel. The scraper chain includes a shaft threading link or a shaft roller link. The shaft threading link is composed of a chain connecting plate and a chain threading shaft, and the shaft roller link includes the chain connecting plate, the chain threading shaft and a chain roller. A width of the support chain plate wheel is less than a distance between two chain connecting plates, and the support chain plate wheel supports the chain roller. Or a width of the support chain plate wheel is greater than a distance between two chain connecting plates, and the support chain plate wheel supports the chain connecting plate. When the link support chain plate wheel is used, the link support chain plate wheel is arranged on the chain threading shaft. The link support chain plate wheel is separately arranged or is integrated with a chain roller. The wheel-guarding material-guiding support plate is provided with the link support chain plate wheel track. A width of the link support chain plate wheel track is less than a distance between two chain connecting plates. A height of the link support chain plate wheel track makes the link support chain plate wheel lift the material scraping plate, so that a gap forms between the material scraping plate and the wheel-guarding material-guiding support plate, and the scraper chain and the material scraping plate run to scrape and load materials under the rolling support of the link support chain plate wheel. There is no sliding friction produced between the material scraping plate and the wheel-guarding material-guiding support plate. Or when the scraper support chain plate wheel is used, the scraper support chain plate wheel is arranged on the material scraping plate, and the material scraping plate runs to scrape and load materials under the rolling support of the scraper support chain plate wheel. There is no sliding friction produced between the material scraping plate and the wheel-guarding material-guiding support plate. Or when the frame support chain plate wheel is used, the frame support chain plate wheel is arranged between the driving gear roller and the redirecting gear roller. A position, corresponding to the frame support chain plate wheel, of the support chain plate wheel supporter is supported by the frame. The support chain plate wheel supporter is connected with the frame separately or integrally. The driving gear roller and the redirecting gear roller are arranged in front of and behind the wheel-guarding material-guiding support plate. The scraper chain is buckled on the driving gear roller and the redirecting gear roller surrounding the wheel-guarding material-guiding support plate, the driving gear roller, the frame support chain plate wheel and the redirecting gear roller. The scraper chain and the wheel-guarding material-guiding support plate are separated by a gap. The

material scraping plate and the wheel-guarding material-guiding support plate are separated by a gap. An outer surface of the frame support chain plate wheel is higher than an upper end face of the wheel-guarding material-guiding support plate. The support chain plate wheel supporter is provided with a support chain plate wheel bearing or a support chain plate wheel shaft. When the support chain plate wheel supporter is provided with the support chain plate wheel bearing, the frame support chain plate wheel is provided with the support chain plate wheel shaft. The support chain plate wheel bearing supports the support chain plate wheel shaft to rotate. The frame support chain plate wheel is arranged near a bottom surface of an upper chain of the scraper chain. The scraper chain and the material scraping plate are supported by the frame support chain plate wheel. The scraper chain, the material scraping plate and the wheel-guarding material-guiding support plate are separated by gaps. The driver drives the driving gear roller to rotate. The scraper chain drives the redirecting gear roller to rotate. The driving gear roller drives the scraper chain and the material scrapping plate to rotate. The scraper chain and the material scrapping plate rotate to the frame support chain plate wheel and drive the frame support chain plate wheel to rotate. There is no sliding friction produced between the scraper chain, the material scraping plate and the frame support chain plate wheel, and there is no friction produced between the scraper chain and the wheel-guarding material-guiding support plate, between the material scraping plate and the wheel-guarding material-guiding support plate. The frame support chain plate wheel rolls and rotates to support the scraper chain and the material scraping plate to convey materials. Or when the support chain plate wheel supporter is provided with the support chain plate wheel shaft, the frame support chain plate wheel includes the support chain plate wheel bearing, and the support chain plate wheel bearing is buckled and sleeved on the support chain plate wheel shaft. The scraper chain and the material scraping plate rotate to the frame support chain plate wheel and drive the frame support chain plate wheel to rotate. There is no sliding friction produced between the scraper chain, the material scraping plate and the frame support chain plate wheel, and there is no friction produced between the scraper chain and the wheel-guarding material-guiding support plate, between the material scraping plate and the wheel-guarding material-guiding support plate. The frame support chain plate wheel rolls and rotates to support the scraper chain and the material scraping plate to convey materials, which realizes fully rolling frictional material conveyance and material loading of the scraper feeder. The frame

support chain plate wheel and the support chain plate wheel bearing are connected separately or integrally. The wheel-guarding material-guiding support plate is a straight plate, or the part, near the frame support chain plate wheel, of the wheel-guarding material-guiding support plate is provided with a support chain plate wheel groove. The frame support chain plate wheel extends out from the support chain plate wheel groove to lift the scraper chain and the material scraping plate. A lower part of the guiding groove near the scraper chain is set as a flat plate or the lower part of the guiding groove near the scraper chain is provided with a protective scraper chain and a protective chain plate wheel baffle for the support chain plate wheel. When the protective chain plate wheel baffle is used, a width of the protective chain plate wheel baffle is greater than a width from an inner wall of the guiding groove to the support chain plate wheel groove. The protective chain plate wheel baffle prevents materials from entering the support chain plate wheel groove and flowing to a lower part of the wheel-guarding material-guiding support plate. The power of the driver is reduced by using the support chain plate wheel, and the sliding friction loss between the scraper and the wheel-guarding material-guiding support plate is avoided, so that the material scraping plate runs to feed materials without noise and has long service life.

The support chain plate wheel shaft includes a half shaft or a through shaft. The support chain plate wheel is positioned with the support chain plate wheel shaft by means of a shaft shoulder, a spacer sleeve, a retainer ring, a baffle, a bolt, a pressing cover and/or a locating pin. The through shaft positions the support chain plate wheels on two ends to prevent the support chain plate wheels from tilting under heavy pressure.

The frame includes a return material cleaning hopper and a lower chain falling material cleaning chain guide. The scraper chain rotates to an upper part of a wheel-guarding retainer plate, which is called an upper scraper chain. The scraper chain rotates to a lower part of the wheel-guarding retainer plate, which is called a lower scraper chain. The return material cleaning hopper is arranged at the frame near the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding retainer plate, and has a distance away from the scraper chain and the material scraping plate. The lower chain falling material cleaning chain guide includes a pressing wheel chain guide or a catching groove chain guide. The lower chain falling material cleaning chain guide is arranged on the return material cleaning hopper or on the frame or on the support chain plate wheel supporter. The pressing wheel chain

guide includes a pressing-down chain wheel chain guide or a support upper chain pressing-down chain wheel. When the pressing-down chain wheel chain guide is used, the pressing-down chain wheel chain guide and the support chain plate wheel are arranged separately, and the pressing-down chain wheel chain guide presses a lower chain of the scraper chain. When the support upper chain pressing-down chain wheel is used, the support upper chain pressing-down chain wheel and the support chain plate wheel are arranged separately or integrally. When the support upper chain pressing-down chain wheel and the support chain plate wheel are arranged integrally, an upper surface of the support upper chain pressing-down chain wheel supports the scraper chain and the material scraping plate on an upper part of the wheel-guarding material-guiding support plate, and a lower surface of the support upper chain pressing-down chain wheel is arranged on an upper part of a lower scraper chain and the material scraping plate to limit the lower scraper chain and the material scraping plate, so the lower scraper chain and the material scraping plate are limited by the support upper chain pressing-down chain wheel. When the catching groove chain guide is used, the catching groove chain guide is arranged on the frame or on the return material cleaning hopper. The catching groove chain guide is buckled on the scraper chain and there is a gap between the catching groove chain guide and the scraper chain, so as to limit the scraper chain to bounce. The lower chain falling material cleaning chain guide limits the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate, so that the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate scrape the return coal and falling coal and other materials in the return material cleaning hopper onto the wheel-guarding material-guiding support plate, and scrape the return coal and falling coal and other materials in the return material cleaning hopper to a loading and unloading port for transferring.

The frame or the return material cleaning hopper includes a lower material cleaner. The lower material cleaner is arranged on the upper part of the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate, and is supported by the frame or the return material cleaning hopper. The lower material cleaner is arranged near the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate and near a tail, so as to prevent material jamming between the scraper

chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate and the driving gear roller at the tail or the redirecting gear roller at the tail.

The return material cleaning hopper includes a left side plate, a right side plate and a material cleaning base plate. The left side plate includes a left vertical side plate and a left inclined side plate, and the right side plate includes a right vertical side plate and a right inclined side plate. The left vertical side plate and the right vertical side plate are arranged vertical to the material cleaning base plate. The left inclined side plate and the right inclined side plate are arranged inclined to the material cleaning base plate. The left inclined side plate guides the return coal, the coal sludge and other materials at a left side into the material cleaning base plate, and the right inclined side plate guides the return coal, the coal sludge and other materials at a right side into the material cleaning base plate, which is convenient for the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate to scrape the return coal, the falling coal and other materials onto the wheel-guarding material-guiding support plate for transferring.

The return material cleaning hopper is arranged on a lower part of the fully rolling friction chain plate carrier wheel material feeder, and holds a falling coal, a falling coal sludge and the return coal on the fully rolling friction chain plate carrier wheel material feeder, which is convenient for the lower material scraping plate to scrape the return coal and the falling coal onto the wheel-guarding material-guiding support plate. A tail of the return material cleaning hopper is higher than the part, near a loading and unloading port, of the return material cleaning hopper relative to the ground, so as to make the coal sludge flow into the loading and unloading port for the next conveyance. Or the return material cleaning hopper is provided with a water guide groove of material cleaning hopper. The water guide groove of material cleaning hopper guides the coal sludge into a sewage disposal facility or into a coal sludge collecting container to ensure a clean and environmental friendly site.

The left side plate and/or the right side plate is higher than the lower chain falling material cleaning chain guide and the material scraping plate to prevent the materials from spilling from the left side plate and/or the right side plate.

A tail of the return material cleaning hopper is provided with a curved tail drop guide. The curved tail drop guide is arranged at a return part of scraper chain facing toward an unloading port; the curved tail drop guide is supported by the return material

cleaning hopper or the frame. The curved tail drop guide is connected with the frame movably or integrally. An arc of the curved tail drop guide is not less than an arc of an arc surface of the scraper chain moving upward along the driving gear roller or the redirecting gear roller. A curved material guide channel is formed between the curved
5 tail drop guide and a surface of the driving gear roller or a surface of the redirecting gear roller. The curved material guide channel is beneficial for the scraper chain to drive the material scraping plate to scrape the coal and other materials in the return material cleaning hopper to the wheel-guarding retainer plate. A height of the curved tail drop guide is higher than the material scraping plate on the driving gear roller and
10 the redirecting gear roller, so as to prevent the material scraping plate from piling up the materials at the tail to spill. When the curved tail drop guide is connected with the frame movably, the frame is provided with a connecting tail material guide component, and correspondingly, the curved tail drop guide is provided with a material guide connecting frame component. The connecting tail material guide component is
15 connected with the material guide connecting frame component movably. When two-way feeding is needed, the material guide connecting frame component is removed from the connecting tail material guide component, and the driver drives the scraper chain to reverse, so as to realize reverse feeding.

The curved tail drop guide includes a fixed curved tail drop guide or a detachable
20 curved tail drop guide. When the detachable curved tail drop guide is used, the detachable curved tail drop guide includes an upper curved tail drop guide and a lower curved tail drop guide. The upper curved tail drop guide is movably docked to the lower curved tail drop guide. When the curved tail drop guide is blocked or needs to be repaired, the upper curved tail drop guide is removed, which facilitates maintenance
25 and observation.

The return material cleaning hopper includes a self-slip inclined base plate. An opening at an inclined angle of the self-slip inclined base plate faces toward an
unloading port. The inclined angle is not less than the self-slip stacking angle of materials, so that the materials flow to the unloading port along the self-slip inclined
30 base plate. Or the return material cleaning hopper includes a base plate the front section of which folds downward; a section, close to the unloading port, of the base plate the front part of which folds downward is a front self-slip inclined base plate, and a section close to the tail is a rear flat base plate. The front self-slip inclined base plate makes the materials on the section close to the unloading port slide along the front

self-slip inclined base plate into a next conveying mechanism. The rear flat base plate scrapes the materials close to the tail from the lower material scraping plate to the wheel-guarding material-guiding support plate to be conveyed to the unloading port. The base plate the front part of which folds downward reduces a height of the whole machine and reduces a load of scraping the return material.

The support chain plate wheel includes a gear support chain plate wheel or a roller support chain plate wheel. The support chain plate wheel includes a rubber support chain plate wheel, a polyurethane support chain plate wheel, a nylon support chain plate wheel, a steel support chain plate wheel, an alloy support chain plate wheel, a cast iron support chain plate wheel, a plastic steel support chain plate wheel, an aluminum support chain plate wheel, a porcelain support chain plate wheel or a plastic support chain plate wheel. The use of the rubber support chain plate wheel, the polyurethane support chain plate wheel, the nylon support chain plate wheel, the plastic steel support chain plate wheel and the plastic support chain plate wheel improves the wear resistance of the support chain plate wheel, further reduces the feeding noise, optimizes the site environment, and prolongs the service life.

The return material cleaning hopper or the frame is provided with a support lower chain track. The support lower chain track matches with a roller sleeve of the lower scraper chain. A width of the support lower chain track is less than a distance between two chain connecting plates of the lower scraper chain. The roller sleeve of the lower scraper chain rolls along the support lower chain track, which reduces the friction resistance, and reduces the wear between the support lower chain track and the lower scraper chain.

Some embodiments of the invention have the following beneficial effects.

1. The guiding groove is connected with the bin opening; the lower part of the guiding groove is fastened to the frame; the guiding groove is connected with the frame fixedly or movably; the wheel-guarding material-guiding support plate is arranged at the lower part of the guiding groove and is supported by the frame, or is hooked up to the guiding groove; the material scraping plate is arranged between two scraper chains; when the link support chain plate wheel is used, the link support chain plate wheel is arranged on the chain threading shaft; the link support chain plate wheel is separately arranged or is integrated with a chain roller; the wheel-guarding material-guiding support plate is provided with the link support chain plate wheel track; the width of the link support chain plate wheel track is less than the distance between the two

chain connecting plates; a height of the link support chain plate wheel track makes the link support chain plate wheel lift the material scraping plate, so that a gap forms between the material scraping plate and the wheel-guarding material-guiding support plate, and the scraper chain and the material scraping plate run to scrape and load materials under the rolling support of the link support chain plate wheel; there is no sliding friction produced between the material scraping plate and the wheel-guarding material-guiding support plate; or when the scraper support chain plate wheel is used, the scraper support chain plate wheel is arranged on the material scraping plate, and the material scraping plate runs to scrape and load materials under the rolling support of the scraper support chain plate wheel; there is no sliding friction produced between the material scraping plate and the wheel-guarding material-guiding support plate; or when the frame support chain plate wheel is used, the frame support chain plate wheel is arranged between the driving gear roller and the redirecting gear roller; the position, corresponding to the frame support chain plate wheel, of the support chain plate wheel supporter is supported by the frame; the driving gear roller and the redirecting gear roller are arranged in front of and behind the wheel-guarding material-guiding support plate; the scraper chain is fastened on the driving gear roller and the redirecting gear roller surrounding the wheel-guarding material-guiding support plate, the driving gear roller, the frame support chain plate wheel and the redirecting gear roller; the scraper chain, the material scraping plate and the wheel-guarding material-guiding support plate are separated by gaps; the outer surface of the frame support chain plate wheel is higher than the upper end face of the wheel-guarding material-guiding support plate; the support chain plate wheel supporter is provided with a support chain plate wheel bearing or a support chain plate wheel shaft; when the support chain plate wheel supporter is provided with the support chain plate wheel bearing, the frame support chain plate wheel is provided with the support chain plate wheel shaft; the support chain plate wheel bearing supports the support chain plate wheel shaft to rotate; the frame support chain plate wheel is arranged near the bottom surface of the upper chain of the scraper chain; the scraper chain and the material scraping plate are supported by the frame support chain plate wheel; the scraper chain, the material scraping plate and the wheel-guarding material-guiding support plate are separated by gaps; the driver drives the driving gear roller to rotate; the scraper chain drives the redirecting gear roller to rotate; the driving gear roller drives the scraper chain and the material scraping plate to rotate; the scraper chain and the material scraping plate rotate to

the frame support chain plate wheel and drive the frame support chain plate wheel to rotate; there are no sliding friction produced between the scraper chain and the frame support chain plate wheel, between the material scraping plate and the frame support chain plate wheel, and there is no friction produced between the scraper chain, the material scraping plate and the wheel-guarding material-guiding support plate; the frame support chain plate wheel rolls and rotates to support the scraper chain and the material scraping plate to convey materials; or when the support chain plate wheel supporter is provided with the support chain plate wheel shaft, the support chain plate wheel bearing is buckled and sleeved on the support chain plate wheel shaft, and the scraper chain and the material scraping plate rotate to the frame support chain plate wheel and drive the frame support chain plate wheel to rotate; there is no sliding friction produced between the scraper chain, the material scraping plate and the frame support chain plate wheel, and there is no friction produced between the scraper chain, the material scraping plate and the wheel-guarding material-guiding support plate; the frame support chain plate wheel rolls and rotates to support the scraper chain and the material scraping plate to convey materials; in this way, fully rolling frictional material conveyance and material loading of the scraper material feeder is implemented, and the frame support chain plate wheel extends out from the support chain plate wheel groove to lift the scraper chain and the material scraping plate; when the protective chain plate wheel baffle is used, the width of the protective chain plate wheel baffle is greater than the width from the inner wall of the guiding groove to the support chain plate wheel groove; the protective chain plate wheel baffle prevents materials from entering the support chain plate wheel groove and flowing to the lower part of the wheel-guarding material-guiding support plate, which avoids the sliding friction loss between the material scraping plate and the wheel-guarding material-guiding support plate; the support chain plate wheel avoids the sliding friction loss between the material scraping plate and the wheel-guarding material-guiding support plate, reduces the power of the driver, makes the material scraping plate feed materials without noise, thus greatly reducing the noise; more than one set of support chain plate wheel are arranged symmetrically, so that the material scraping plate does not produce the sliding friction with the retainer plate when running on the retainer plate with a length of several meters to dozens of meters, thus completely changing the structure principle of sliding friction between the scraper chain, the material scraping plate and the scraping support plate, changing the sliding friction into the rolling friction, greatly reducing the running

friction resistance, and reducing the energy consumption by more than 50 percent; the material scraping plate basically has no wear and tear, the maintenance amount is small, manpower and material resources and time are saved, the rolling friction noise is low, the feeding amount is large and the efficiency is high, and the service life of the whole machine is greatly prolonged; when the material feeder of the invention is used to transfer thousands of tons of coal, the sliding friction structure of the material scraping plate and the scraping support plate is changed, and faults, for example, the chain is broken or the motor is burnt, will not occur, and the faults are caused by bulk accumulation of materials that makes the material scraping plate and the scraping support plate convey the materials with the sliding friction under a high pressure of the bin and the piling up materials; especially when the material feeder is restarted with heavy load after shutdown, because there is no sliding friction between the material scraping plate and the wheel-guarding material-guiding support plate, the material scraping plate is supported by the support chain plate wheel to scrape and feed materials with the sliding friction, and the motor will not be burnt due to overload when the material feeder is started or conveys materials, thus avoiding the occurrence of serious accident on site, greatly improving the feeding efficiency and greatly prolonging the service life of the whole machine.

2. The support chain plate wheel is positioned with the support chain plate wheel shaft by means of the shaft shoulder, the spacer sleeve, the retainer ring, the baffle, the bolt, the pressing cover and/or the locating pin; the through shaft positions the support chain plate wheels on two ends to prevent the support chain plate wheels from tilting under heavy pressure, thus prolonging the service life of the support chain plate wheel and improving the stability of the whole machine.

3. With the help of running power and components of the main conveyed material, the material scraping plate of a return material cleaning scraper conveyor and the material scraping plate of the main conveyed material are the same part, which automatically cleans the return material and the falling material while conveying the materials; in this way, the problems of the old return material cleaner that because the power is set separately, the return material collector is started only after a large amount of return coal is piled up on site, and due to the solidification and compaction of coal sludge, the return material collector is broken, and the motor is burnt out and cannot work, which delays production are thoroughly solved.

4. The return material cleaning hopper is arranged at the frame near the scraper

chain and the material scraping plate that rotate to the lower part of the wheel-guarding retainer plate, and has a distance away from the scraper chain and the material scraping plate; the lower chain falling material cleaning chain guide is arranged on the return material cleaning hopper or on the frame or on the support chain plate wheel supporter; when the pressing-down chain wheel chain guide is used, the pressing-down chain wheel chain guide and the support chain plate wheel are arranged separately, and the pressing-down chain wheel chain guide presses the lower chain of the scraper chain; when the support upper chain pressing-down chain wheel is used and the support upper chain pressing-down chain wheel and the support chain plate wheel are arranged integrally, the upper surface of the support upper chain pressing-down chain wheel supports the scraper chain and the material scraping plate on the upper part of the wheel-guarding material-guiding support plate, and the lower surface of the support upper chain pressing-down chain wheel is arranged on the upper part of the lower scraper chain and the material scraping plate to limit the lower scraper chain and the material scraping plate, so the lower scraper chain and the material scraping plate are limited by the support upper chain pressing-down chain wheel; the support upper chain pressing-down chain wheel is multi-purpose, that is, the support upper chain pressing-down chain wheel supports the upper scraper chain so that it does not sag, presses down the lower scraper chain so that it does not bounce, and tensions the scraper chain so that there is no sliding friction between the scraper chain and any component, so the support upper chain pressing-down chain wheel has advantages of many functions and few parts, no need to maintain and making the whole machine run stably with a long service life; when the catching groove chain guide is used, the catching groove chain guide is arranged on the frame or on the return material cleaning hopper; the catching groove chain guide is buckled on the scraper chain and there is a gap between it and the scraper chain, so as to limit the scraper chain to bounce; the lower chain falling material cleaning chain guide limits the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate, so that the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate scrape the return coal and falling coal and other materials in the return material cleaning hopper onto the wheel-guarding material-guiding support plate, and scrape the return coal and falling coal and other materials in the return material cleaning hopper to the loading and unloading port for transferring, thus truly realizing

clean feeding and loading without noise and pollution, making sure that the fully rolling friction chain plate carrier wheel feeder has no return coal, throughly changing the defects of the old scraper material feeder of environmental pollution and material waste caused by carrying the return coal, preventing the materials from piling and hardening on the lower part of the fully rolling friction chain plate carrier wheel feeder to cause the scraper chain and the material scraping plate to be locked by the hardened material pile, and avoiding the occurrence of production accidents caused by the breaking of the scraper chain; the fully rolling friction chain plate carrier wheel feeder of the invention changes the complex structural components of the conveying chain plate device and the return material cleaning device of the original scrapper material feeder to only using a main machine conveying chain plate, a lower material cleaning hopper and the lower chain drop feed chain guide to complete the process of transferring materials and cleaning the return material and falling material; in this way, the complex structures of driving parts, power parts and support parts of the return material collector known to inventors are removed, and the structure is compact and simple; a scraper chain is multi-purpose, and there are less wearing parts, thus greatly reducing the manufacturing cost, reducing the volume of the original chain plate material feeder with a coal cleaning device; the invention occupies less space, has high material cleaning strength, throughly solves the problems of the chain plate material feeder used for transferring for many years, such as large water content, large transfer quantity, serious scattering of the return coal on site, and environment pollution and resource waster caused by coal sludge spilling everywhere, reduces equipment input and maintenance cost, saves manpower, material resources, installation and maintenance time, and ensures energy saving, environmental protection and efficient production on site.

5. The lower material cleaner is arranged on the upper part of the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate, and is supported by the frame or the return material cleaning hopper; the lower material cleaner is arranged near the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate and near the tail, so as to prevent material jamming between the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate and the driving gear roller at the tail or the redirecting gear roller at the tail; pushing the material to the material scraping plate is

convenient for the material scraping plate to scrape the return coal onto the wheel-guarding material-guiding support plate, which prevents the failures that the material scraping plate is locked and the broken caused by material jamming at the tail, greatly reduces drive resistance of the scraper chain, prolongs the service life of the power parts and the drive parts, and saves energy and protects environment.

6. The left vertical side plate and the right vertical side plate are arranged vertical to the material cleaning base plate; the left inclined side plate and the right inclined side plate are arranged inclined to the material cleaning base plate; the left inclined side plate guides the return coal and the coal sludge at the left side into the material cleaning base plate, and the right inclined side plate guides the return coal and the coal sludge at the right side into the material cleaning base plate, which is convenient for the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate to scrape the return coal and the falling coal onto the wheel-guarding material-guiding support plate for transferring; the structure is simple and practical, and the effect is good.

7. The return material cleaning hopper is arranged on the lower part of the fully rolling friction chain plate carrier wheel material feeder, and holds the falling coal, the falling coal sludge and the return coal on the fully rolling friction chain plate carrier wheel material feeder, which is convenient for the lower material scraping plate to scrape the return coal and the falling coal onto the wheel-guarding material-guiding support plate; the tail of the return material cleaning hopper is higher than the part, near the loading and unloading port, of the return material cleaning hopper relative to the ground, so as to make the coal sludge flow into the loading and unloading port for the next conveyance; or the return material cleaning hopper is provided with a water guide groove of material cleaning hopper; the water guide groove of material cleaning hopper guides the coal sludge into a sewage disposal facility or into a coal sludge collecting container, thus ensuring a clean and environmental friendly site, thus improving the efficiency of waste recovery.

8. The left side plate and/or the right side plate is higher than the lower chain falling material cleaning chain guide and the material scraping plate to prevent the materials from spilling from the left side plate and/or the right side plate, thus ensuring no pollution, no waste and high efficiency in all directions.

9. The curved tail drop guide is arranged at a return part of scraper chain facing toward the unloading port; the curved tail drop guide is supported by the return material

cleaning hopper or the frame; the arc of the curved tail drop guide is not less than the arc of an arc surface of the scraper chain moving upward along the driving gear roller or the redirecting gear roller; a curved material guide channel is formed between the curved tail drop guide and the surface of the driving gear roller or the surface of the redirecting gear roller; the curved material guide channel is beneficial for the scraper chain to drive the material scraping plate to scrape the coal and other materials in the return material cleaning hopper to the wheel-guarding retainer plate; the height of the curved tail drop guide is higher than the material scraping plate on the driving gear roller and the redirecting gear roller, so as to prevent the material scraping plate from piling up the materials at the tail to spill; when the curved tail drop guide is connected with the frame movably, the frame is provided with a connecting tail material guide component which is connected with the material guide connecting frame component movably; when two-way feeding is needed, the material guide connecting frame component is removed from the connecting tail material guide component, and the driver drives the scraper chain to reverse, so as to realize reverse feeding, thus scraping the return material from the tail to a material falling opening smoothly, ensuring that the site is clean and pollution-free, avoiding the waste of materials, and saving manpower and material resources and time.

10. When the detachable curved tail drop guide is used, the upper curved tail drop guide is movably docked to the lower curved tail drop guide, and when the curved tail drop guide is blocked or needs to be repaired, the upper curved tail drop guide is removed, which facilitates maintenance and observation; so, it is simple and fast to remove, the maintenance efficiency is high, structural configurations and functions are complete, details are perfect, and the use effect is good.

11. The opening at the inclined angle of the self-slip inclined base plate faces toward the unloading port, and the inclined angle is not less than the self-slip stacking angle of materials, so that the materials flow to the unloading port along the self-slip inclined base plate; the section, close to the unloading port, of the base plate the front part of which folds downward is a front self-slip inclined base plate, and the section close to the tail is a rear flat base plate; the front self-slip inclined base plate makes the materials on the section close to the unloading port slide along the front self-slip inclined base plate into the next conveying mechanism; the rear flat base plate scrapes the materials close to the tail from the lower material scraping plate to the wheel-guarding material-guiding support plate to be conveyed to the unloading port; the base

plate the front part of which folds downward reduces the height of the whole machine and guides the return material into the unloading opening by using the characteristic of material slipping on the inclined base plate, thus reducing the load of scraping the return material, reducing the power consumption of scraping the return material, and improving the efficiency of conveying materials.

12. The rubber support chain plate wheel, the polyurethane support chain plate wheel, the nylon support chain plate wheel, the plastic steel support chain plate wheel and the plastic support chain plate wheel are used, thus improving the wear resistance of the support chain plate wheel, further reducing the feeding noise, optimizing the site environment, and prolonging the service life.

13. The roller sleeve of the lower scraper chain rolls along the support lower chain track, thus reducing the frictional resistance and the wear between the support lower chain track and the lower scraper chain.

Brief Description of the Drawings

Fig. 1 is a front view of a fully rolling friction chain plate carrier wheel material feeder in embodiment 1.

Fig. 2 is a left section view of a fully rolling friction chain plate carrier wheel material feeder in embodiment 1.

Fig. 3 is a left section view of a fully rolling friction chain plate carrier wheel material feeder in embodiment 2.

Fig. 4 is a front view of a fully rolling friction chain plate carrier wheel material feeder in embodiment 3.

Fig. 5 is a front view of a fully rolling friction chain plate carrier wheel material feeder in embodiment 4.

Fig. 6 is a left section view of a fully rolling friction chain plate carrier wheel material feeder in embodiment 5.

Fig. 7 is a front view of a fully rolling friction chain plate carrier wheel material feeder in embodiment 6.

Fig. 8 is a partial schematic diagram of a fully rolling friction chain plate carrier wheel material feeder in embodiment 7.

Fig. 9 is a left view of a fully rolling friction chain plate carrier wheel material feeder in embodiment 7.

Fig. 10 is a front view of a fully rolling friction chain plate carrier wheel material

feeder in embodiment 8.

Fig. 11 is a left view of a fully rolling friction chain plate carrier wheel material feeder in embodiment 9.

Fig. 12 is a front view of a fully rolling friction chain plate carrier wheel material
5 feeder in embodiment 10.

Fig. 13 is a front view of a fully rolling friction chain plate carrier wheel material feeder in embodiment 11.

Fig. 14 is a front view of a fully rolling friction chain plate carrier wheel material feeder in embodiment 12.

10 Fig. 15 is a left section view of a fully rolling friction chain plate carrier wheel material feeder in embodiment 12.

Fig. 16 is a left section view of a fully rolling friction chain plate carrier wheel material feeder in embodiment 13.

Fig. 17 is a partial schematic diagram of a fully rolling friction chain plate carrier
15 wheel material feeder in embodiment 14.

Fig. 18 is a left section view of a fully rolling friction chain plate carrier wheel material feeder in embodiment 15.

Fig. 19 is a partial schematic diagram of a fully rolling friction chain plate carrier wheel material feeder in embodiment 16.

20 Fig. 20 is a partial schematic diagram of a fully rolling friction chain plate carrier wheel material feeder in embodiment 17.

Fig. 21 is a partial schematic diagram of a fully rolling friction chain plate carrier wheel material feeder in embodiment 18.

Fig. 22 is a partial schematic diagram of a fully rolling friction chain plate carrier
25 wheel material feeder in embodiment 19.

In the accompanying drawings: 1-guiding groove; 2-support chain plate wheel; 2.1-frame support chain plate wheel; 3-support chain plate wheel supporter; 4-scraper chain; 5-material scraping plate; 6-wheel-guarding material-guiding support plate; 7-driving gear roller; 8-redirecting gear roller; 9-driver; 10-frame; 11-bin opening; 12-support chain plate wheel shaft; 13-support chain plate wheel bearing; 14-protective chain plate wheel baffle; 15-wheel-guarding material-guiding support plate; 16-return material cleaning hopper; 17-lower chain drop feed chain guide; 18-upper scraper chain; 19-lower scraper chain; 20-pressing wheel chain guide; 21-pressing-down chain wheel chain guide; 22-support upper chain pressing-down chain wheel; 23-catching
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groove chain guide; 24-lower material cleaner; 25-left side plate; 26-right side plate; 27-material cleaning base plate; 28-left vertical side plate; 29-left inclined side plate; 30-right vertical side plate; 31-right inclined side plate; 32-curved tail drop guide; 33-water guide groove of material cleaning hopper; 34-self-slip inclined base plate; 35-
5 base plate the front part of which folds downward; 36-front self-slip inclined base plate; 37-rear flat base plate; 38-link support chain plate wheel; 39-shaft roller link; 40-chain connecting plate; 41-chain threading shaft; 42-chain roller; 43-link support chain plate wheel track; 44-connecting tail material guide component ; 45-material guide connecting frame component; 46-scrapper support chain plate wheel; 47-detachable
10 curved tail drop guide; 48-upper curved tail drop guide; 49-lower curved tail drop guide; 50-support lower chain track; 51-roller sleeve; 52-shaft shoulder; 53-bolt; 54-retainer ring; 55-spacer sleeve; 56-locating pin; and 57-pressing cover.

Detailed Description of the Embodiments

15 Embodiment 1

As shown in Fig. 1 and Fig. 2, a fully rolling friction chain plate carrier wheel material feeder includes: a guiding groove 1, a support chain plate wheel 2, a support chain plate wheel supporter 3, a scraper chain 4, a material scraping plate 5, a wheel-guarding material-guiding support plate 6, a driving gear roller 7, a redirecting gear
20 roller 8, a driver 9 and a frame 10. The guiding groove 1 is connected with a bin opening 11. A lower part of the guiding groove 1 is fastened to the frame 10. The guiding groove 1 is connected with the frame 10 fixedly or movably. The support chain plate wheel 2 includes a frame support chain plate wheel 2.1. The frame support chain plate wheel 2.1 is disposed between the driving gear roller 7 and the redirecting gear roller 8. The
25 position, corresponding to the frame support chain plate wheel 2.1, of the support chain plate wheel supporter 3 is supported by the frame 10. The wheel-guarding material-guiding support plate 6 is arranged at the lower part of the guiding groove 1 and is supported by the frame 10, or is hooked up to the guiding groove 1. The driving gear roller 7 and the redirecting gear roller 8 are arranged in front of and behind the wheel-
30 guarding material-guiding support plate 6. The scraper chain 4 is fastened on the driving gear roller 7 and the redirecting gear roller 8 surrounding the wheel-guarding material-guiding support plate 6, the driving gear roller 7, the frame support chain plate wheel 2.1 and the redirecting gear roller 8. The scraper chain 4, the material scraping plate 5 and the wheel-guarding material-guiding support plate 6 are separated by gaps.

The material scraping plate 5 is arranged between two scraper chains 4. An outer surface of the frame support chain plate wheel 2.1 is higher than an upper end face of the wheel-guarding material-guiding support plate 6. The support chain plate wheel supporter is provided with a support chain plate wheel bearing 13, and the frame support chain plate wheel 2.1 is provided with a support chain plate wheel shaft 12. The support chain plate wheel bearing 13 supports the support chain plate wheel shaft 12 to rotate. The frame support chain plate wheel 2.1 is arranged near a bottom surface of an upper chain of the scraper chain 4. The scraper chain 4 and the material scraping plate 5 are supported by the frame support chain plate wheel 2.1. The scraper chain 4, the material scraping plate 5 and the wheel-guarding material-guiding support plate 6 are provided by gaps. The driver 9 drives the driving gear roller 7 to rotate. The scraper chain 4 drives the redirecting gear roller 8 to rotate. The driving gear roller 7 drives the scraper chain 4 and the material scraping plate 5 to rotate. The scraper chain 4 and the material scraping plate 5 rotate to the frame support chain plate wheel 2.1 and drive the frame support chain plate wheel 2.1 to rotate. There is no sliding friction produced between the scraper chain 4 and the frame support chain plate wheel 2.1 and between the material scraping plate 5 and the frame support chain plate wheel 2.1 , and there is no friction produced between the scraper chain 4, the material scraping plate 5 and the wheel-guarding material-guiding support plate 6. The frame support chain plate wheel 2.1 rolls and rotates to support the scraper chain 4 and the material scraping plate 5 to convey materials. The part, near the frame support chain plate wheel 2.1, of the wheel-guarding material-guiding support plate 6 is provided with a support chain plate wheel 2.1 groove. The frame support chain plate wheel 2.1 extends out from the support chain plate wheel 2.1 groove to lift the scraper chain 4 and the material scraping plate 5. The lower part of the guiding groove 1 near the scraper chain 4 is provided with a protective scraper chain 4 and a protective chain plate wheel baffle 14 of the support chain plate wheel 2.1. The width of the protective chain plate wheel baffle 14 is greater than a width from an inner wall of the guiding groove 1 to the support chain plate wheel 2.1 groove. The protective chain plate wheel baffle 14 prevents materials from entering the support chain plate wheel 2.1 groove and flowing to the lower part of the wheel-guarding material-guiding support plate 6. The power of the driver 9 is reduced by installing the support chain plate wheel 2.1, and the sliding friction loss between the scraper and the wheel-guarding material-guiding support plate 6 is avoided, so that the scraper runs to feed materials without

noise and has long service life.

The support chain plate wheel 2 includes a gear support chain plate wheel or a roller support chain plate wheel. The support chain plate wheel 2 may be a rubber support chain plate wheel, a polyurethane support chain plate wheel, a nylon support chain plate wheel, a steel support chain plate wheel, an alloy support chain plate wheel, a cast iron support chain plate wheel, a plastic steel support chain plate wheel, an aluminum support chain plate wheel, a porcelain support chain plate wheel and a plastic support chain plate wheel.

A width of the support chain plate wheel 2 is less than a distance between two chain connecting plates. The support chain plate wheel supports the chain roller, or the width of the support chain plate wheel is greater than the distance between two chain connecting plates. The support chain plate wheel supports the chain connecting plate.

Embodiment 2

As shown in Fig. 3, the support chain plate wheel supporter is provided with the support chain plate wheel shaft 12. The frame support chain plate wheel 2.1 includes a support chain plate wheel bearing 13. The support chain plate wheel bearing 13 is buckled and sleeved on the support chain plate wheel shaft 12. The scraper chain 4 and the material scraping plate 5 rotate to the frame support chain plate wheel 2.1 and drive the support chain plate wheel 2.1 to rotate. There is no sliding friction produced between the scraper chain 4, the material scraping plate 5 and the frame support chain plate wheel 2.1, and there is no friction produced between the scraper chain 4, the material scraping plate 5 and the wheel-guarding material-guiding support plate 6. The frame support chain plate wheel 2.1 rolls and rotates to support the scraper chain 4 and the material scraping plate 5 to convey materials. In this way, fully rolling frictional material conveyance and material loading of the scraper material feeder is implemented. The wheel-guarding material-guiding support plate 15 is a straight plate. A lower position, near the scraper chain 4, of the guiding groove 1 is a flat plate. Installing the support chain plate wheel 2.1 reduces the power of the driver 9, avoids the sliding friction loss between the scraper and the wheel-guarding material-guiding support plate 6, greatly reduces the noise and prolongs the service life.

The rest are the same as embodiment 1.

Embodiment 3

As shown in Fig. 4, the frame 10 includes a return material cleaning hopper 16 and a lower chain falling material cleaning chain guide 17. The scraper chain 4 rotates

to an upper part of a wheel-guarding retainer plate, which is called an upper scraper chain 18. The scraper chain 4 rotates to a lower part of the wheel-guarding retainer plate, which is called a lower scraper chain 19. The return material cleaning hopper 16 is arranged at the frame 10 near the scraper chain 4 and the material scraping plate 5 that rotate to the lower part of the wheel-guarding retainer plate 6, and has a distance away from the scraper chain 4 and the material scraping plate 5. The lower chain falling material cleaning chain guide 17 includes a pressing wheel chain guide 20. The lower chain falling material cleaning chain guide 17 is arranged on the return material cleaning hopper 16 or on the frame 10 or on the support chain plate wheel supporter 3. The pressing wheel chain guide 20 includes a pressing-down chain wheel chain guide 21. The pressing-down chain wheel chain guide 21 and the support chain plate wheel 2.1 are arranged separately. The pressing-down chain wheel chain guide 21 presses a lower chain of the scraper chain 4. The lower chain falling material cleaning chain guide limits the scraper chain 4 and the material scraping plate 5 that rotate to the lower part of the wheel-guarding material-guiding support plate 6, so that the scraper chain 4 and the material scraping plate 5 that rotate to the lower part of the wheel-guarding material-guiding support plate 6 scrape the return coal and falling coal and other materials in the return material cleaning hopper 16 onto the wheel-guarding material-guiding support plate 6, and scrape the return coal and falling coal and other materials in the return material cleaning hopper 16 to a loading and unloading port for transferring.

The rest are the same as embodiment 1.

Embodiment 4

As shown in Fig. 5, the frame 10 includes a return material cleaning hopper 16 and a lower chain falling material cleaning chain guide 17. The scraper chain 4 rotates to an upper part of a wheel-guarding retainer plate, which is called an upper scraper chain 18. The scraper chain 4 rotates to a lower part of the wheel-guarding retainer plate, which is called a lower scraper chain 19. The return material cleaning hopper 16 is arranged at the frame 10 near the scraper chain 4 and the material scraping plate 5 that rotate to the lower part of the wheel-guarding retainer plate 6 and the material scraping plate, and has a distance away from the scraper chain 4 and the material scraping plate 5. The lower chain falling material cleaning chain guide 17 includes a pressing wheel chain guide 20. The lower chain falling material cleaning chain guide 17 is arranged on the return material cleaning hopper 16 or on the frame 10 or on the

support chain plate wheel supporter 3. The pressing wheel chain guide 20 includes a support upper chain pressing-down chain wheel 22. The support upper chain pressing-down chain wheel 22 and the frame support chain plate wheel 2.1 are arranged separately or integrally. When the support upper chain pressing-down chain wheel 22 and the frame support chain plate wheel 2.1 are arranged integrally, an upper surface of the support upper chain pressing-down chain wheel 22 supports the scraper chain 4 and the material scraping plate 5 on an upper part of the wheel-guarding material-guiding support plate 6. A lower surface of the support upper chain pressing-down chain wheel 22 is arranged on an upper part of the lower scraper chain 19 and the material scraping plate 5 to limit the lower scraper chain 19 and the material scraping plate 5, so the lower scraper chain 19 and the material scraping plate 5 are limited by the support upper chain pressing-down chain wheel 22. The lower chain drop feed chain guide 17 limits the scraper chain 4 and the material scraping plate 5 that rotate to the lower part of the wheel-guarding material-guiding support plate 6, so that the scraper chain 4 and the material scraping plate 5 that rotate to the lower part of the wheel-guarding material-guiding support plate 6 scrape the return coal and the falling coal in the return material cleaning hopper 16 onto the wheel-guarding material-guiding support plate 6, and scrape the return coal and the falling coal in the return material cleaning hopper 16 to the loading and unloading port for transferring.

The rest are the same as embodiment 1.

Embodiment 5

As shown in Fig. 6, the frame 10 includes the return material cleaning hopper 16 and the lower chain falling material cleaning chain guide 17. The scraper chain 4 rotates to an upper part of the wheel-guarding retainer plate, which is called the upper scraper chain 18. The scraper chain 4 rotates to a lower part of the wheel-guarding retainer plate, which is called the lower scraper chain 19. The return material cleaning hopper 16 is arranged at the frame 10 near the scraper chain 4 and the material scraping plate 5 that rotate to the lower part of the wheel-guarding retainer plate 6, and has a distance away from the scraper chain 4 and the material scraping plate 5. The lower chain falling material cleaning chain guide 17 includes a catching groove chain guide 23. The catching groove chain guide 23 is arranged on the frame 10 or on the return material cleaning hopper 16. The catching groove chain guide 23 is fastened to the scraper chain 4 and there is a gap between them, so as to limit the scraper chain 4 to bounce. The lower chain falling material cleaning chain guide 17 limits the scraper

chain 4 and the material scraping plate 5 that rotate to the lower part of the wheel-guarding material-guiding support plate 6, so that the scraper chain 4 and the material scraping plate 5 that rotate to the lower part of the wheel-guarding material-guiding support plate 6 scrape the return coal and falling coal and other materials in the return material cleaning hopper 16 onto the wheel-guarding material-guiding support plate 6, and scrape the return coal and falling coal and other materials in the return material cleaning hopper 16 to a loading and unloading port for transferring.

The rest are the same as embodiment 1.

Embodiment 6

As shown in Fig. 7, a fully rolling friction chain plate carrier wheel material feeder is provided. The frame 10 or the return material cleaning hopper 16 includes a lower material cleaner 24. The lower material cleaner 24 is arranged on an upper part of the scraper chain 4 and the material scraping plate 5 that rotate to a lower part of the wheel-guarding material-guiding support plate 6, and is supported by the frame 10 or the return material cleaning hopper 16. The lower material cleaner 24 is arranged near the scraper chain 4 and the material scraping plate 5 that rotate to the lower part of the wheel-guarding material-guiding support plate 6 and near the tail, so as to prevent material jamming between the scraper chain 4 and the material scraping plate 5 that rotate to the lower part of the wheel-guarding material-guiding support plate 6 and the driving gear roller 7 at the tail or the redirecting gear roller 8 at the tail.

The rest are the same as embodiment 1.

Embodiment 7

As shown in Fig. 8 and Fig. 9, the return material cleaning hopper 16 includes a left side plate 25, a right side plate 26 and a material cleaning base plate 27. The left side plate 25 includes a left vertical side plate 28 and a left inclined side plate 29, and the right side plate 26 includes a right vertical side plate 30 and a right inclined side plate 31. The left vertical side plate 28 and the right vertical side plate 30 are arranged vertical to the material cleaning base plate 27. The left inclined side plate 29 and the right inclined side plate 31 are arranged inclined to the material cleaning base plate 27. The left inclined side plate 29 guides the return coal and the coal sludge at the left side into the material cleaning base plate 27, and the right inclined side plate 31 guides the return coal and the coal sludge at the right side into the material cleaning base plate 27, which is convenient for the scraper chain 4 and the material scraping plate 5 that rotate to the lower part of the wheel-guarding material-guiding support plate 6 to

scrape the return coal and the falling coal onto the wheel-guarding material-guiding support plate 6 for transferring.

The left side plate 25 and/or the right side plate 26 is higher than the lower chain falling material cleaning chain guide 17 and the material scraping plate 5 to prevent the materials from spilling from the left side plate 25 and/or the right side plate 26.

The tail of the return material cleaning hopper 16 is provided with a curved tail drop guide 32. The curved tail drop guide 32 is arranged at a return part of scraper chain 4 facing toward an unloading port. The arc of the curved tail drop guide 32 is not less than the arc of an arc surface of the scraper chain 4 moving upward along the driving gear roller 7 or the redirecting gear roller 8. A curved material guide channel is formed between the curved tail drop guide 32 and a surface of the driving gear roller 7 or a surface of the redirecting gear roller 8. The curved material guide channel is beneficial for the scraper chain 4 to drive the material scraping plate to scrape the coal in the return material cleaning hopper 16 to the wheel-guarding retainer plate 6. A height of the curved tail drop guide 32 is higher than the material scraping plate 5 on the driving gear roller 7 and the redirecting gear roller 8, so as to prevent the material scraping plate 5 from piling up the materials at the tail to spill.

The rest are the same as embodiment 1.

Embodiment 8

As shown in Fig. 10, the return material cleaning hopper 16 is arranged at a lower part of the fully rolling friction chain plate carrier wheel material feeder, and holds the falling coal, the falling coal sludge and the return coal on the fully rolling friction chain plate carrier wheel material feeder, which is convenient for the lower material scraping plate 5 to scrape the return coal and the falling coal onto the wheel-guarding material-guiding support plate 6. A tail of the return material cleaning hopper 16 is higher than the part, near the loading and unloading port, of the return material cleaning hopper 16 relative to the ground, so as to make the coal sludge flow into the loading and unloading port for the next conveyance.

The rest are the same as embodiment 1.

Embodiment 9

As shown in Fig. 11, the return material cleaning hopper 16 is provided with a water guide groove of material cleaning hopper 33. The water guide groove of material cleaning hopper 33 guides the coal sludge into a sewage disposal facility or into a coal sludge collecting container, which ensures a clean and environmental friendly site.

The rest are the same as embodiment 8.

Embodiment 10

As shown in Fig. 12, the return material cleaning hopper 16 includes a self-slip inclined base plate 34. An opening at an inclined angle of the self-slip inclined base plate 34 faces toward an unloading port, and the inclined angle is not less than the self-slip stacking angle of materials, so that the materials flow to the unloading port along the self-slip inclined base plate 34.

The rest are the same as embodiment 1.

Embodiment 11

As shown in Fig. 13, the return material cleaning hopper 16 includes a base plate the front section of which folds downward 35. The section, close to the unloading port, of the base plate the front part of which folds downward 35 is a front self-slip inclined base plate 36, and the section close to the tail is a rear flat base plate 37. The front self-slip inclined base plate 36 makes the materials on the section close to the unloading port slide along the front self-slip inclined base plate 36 into the next conveying mechanism. The rear flat base plate 37 scrapes the materials close to the tail from the lower material scraping plate 5 to the wheel-guarding material-guiding support plate 6 to be conveyed to the unloading port. The base plate the front part of which folds downward 35 reduces a height of the whole machine and reduces the load of scraping the return material.

The rest are the same as embodiment 1.

Embodiment 12

As shown in Fig. 14 and Fig. 15, the support chain plate wheel 2 includes a link support chain plate wheel 38. The scraper chain 4 includes a shaft roller link 39. The shaft roller link 39 includes the chain connecting plate 40, the chain threading shaft 41 and a chain roller 42. The link support chain plate wheel 38 is arranged on the chain threading shaft 41. The link support chain plate wheel 38 is separately arranged or is integrated with the chain roller 42. The wheel-guarding material-guiding support plate 6 is provided with a link support chain plate wheel track 43. The link support chain plate wheel track 43 is arranged on the wheel-guarding material-guiding support plate 6 and is integrated with the wheel-guarding material-guiding support plate 6. A width of the link support chain plate wheel track 43 is less than a distance between two chain connecting plates 40. A height of the link support chain plate wheel track 43 makes the link support chain plate wheel 38 lift the material scraping plate 5, so that a gap forms

between the material scraping plate 5 and the wheel-guarding material-guiding support plate 6, and the scraper chain 4 and the material scraping plate 5 run to scrape and load materials under a rolling support of the link support chain plate wheel 38. There is no sliding friction produced between the material scraping plate 5 and the wheel-guarding material-guiding support plate 6.

The tail of the return material cleaning hopper 16 is provided with a curved tail drop guide 32. The curved tail drop guide 32 is arranged at a return part of scraper chain 4 facing toward an unloading port. The curved tail drop guide 32 is supported by the frame 10 or by the return material cleaning hopper 16. The curved tail drop guide 32 is connected with the frame 10 movably or integrally. When the curved tail drop guide 32 is connected with the frame 10 movably, the frame 10 is provided with a connecting tail material guide component 44, and correspondingly, the curved tail drop guide 32 is provided with a material guide connecting frame component 45. The connecting tail material guide component 44 is connected with the material guide connecting frame component 45 movably. When two-way feeding is needed, the material guide connecting frame component 45 is removed from the connecting tail material guide component 44, and the driver 9 drives the scraper chain 4 to reverse, so as to realize reverse feeding.

The rest are the same as embodiment 1.

Embodiment 13

As shown in Fig. 16, the support chain plate wheel 2 includes a scraper support chain plate wheel 46. When the scraper support chain plate wheel 46 is used, the scraper support chain plate wheel 46 is arranged on the material scraping plate 5, and the material scraping plate 5 runs to scrape and load materials under the rolling support of the scraper support chain plate wheel 46. There is no sliding friction produced between the material scraping plate 5 and the wheel-guarding material-guiding support plate 6.

The rest are the same as embodiment 1.

Embodiment 14

As shown in Fig. 17, the curved tail drop guide 32 includes a fixed curved tail drop guide or a detachable curved tail drop guide 47. When the detachable curved tail drop guide 47 is used, the detachable curved tail drop guide 47 includes an upper curved tail drop guide 48 and a lower curved tail drop guide 49. The upper curved tail drop guide 48 is movably docked to the lower curved tail drop guide 49. When the curved

tail drop guide 32 is blocked or needs to be repaired, the upper curved tail drop guide 48 is removed, which facilitates maintenance and observation.

The rest are the same as embodiment 1.

Embodiment 15

5 As shown in Fig. 18, the return material cleaning hopper 16 is provided with a support lower chain track 50. The support lower chain track 50 may also be arranged on the frame 10, and matches with a roller sleeve 51 of the lower scraper chain 19. A width of the support lower chain track 50 is less than a distance between two chain connecting plates of the lower scraper chain 19. The roller sleeve 51 of the lower
10 scraper chain 19 rolls along the support lower chain track 50, which reduces the friction resistance, and reduces the wear between the support lower chain track 50 and the lower scraper chain 19.

The rest are the same as embodiment 1.

Embodiment 16

15 As shown in Fig. 19, the support chain plate wheel shaft 12 is a half shaft or a through shaft. The support chain plate wheel 2 is positioned with the support chain plate wheel shaft 12 by means of a shaft shoulder 52, a bolt 53 and a retainer ring 54 to prevent the support chain plate wheel 2 from moving.

The rest are the same as embodiment 1.

20 Embodiment 17

As shown in Fig. 20, the support chain plate wheel shaft 12 is a through shaft. The support chain plate wheel 2 is positioned with the support chain plate wheel shaft 12 through a shaft shoulder 52 and a spacer sleeve 55. The through shaft positions the support chain plate wheels 2 on two ends to prevent the support chain plate wheels 2
25 from tilting under heavy pressure.

A width of the support chain plate wheel 2 is less than a distance between two chain connecting plates 40. The support chain plate wheel 2 supports a chain roller 42.

The rest are the same as embodiment 1.

Embodiment 18

30 As shown in Fig. 21, the support chain plate wheel shaft 12 is a through shaft. The support chain plate wheel 2 is positioned with the support chain plate wheel shaft 12 through a shaft shoulder 52 and a locating pin 56. The through shaft positions the support chain plate wheels 2 on two ends to prevent the support chain plate wheels 2 from tilting under heavy pressure.

A width of the support chain plate wheel 2 is greater than a distance between two chain connecting plates 40. The support chain plate wheel 2 supports the chain connecting plate 40.

The rest are the same as embodiment 1.

5 Embodiment 19

As shown in Fig. 22, the support chain plate wheel shaft 12 is a through shaft. The support chain plate wheel 2 is positioned with the support chain plate wheel shaft 12 through a spacer sleeve 55 and the pressing cover 57. The through shaft positions the support chain plate wheels 2 on two ends to prevent the support chain plate wheels 2
10 from tilting under heavy pressure.

The rest are the same as embodiment 1.

What is claimed is:

1. A fully rolling friction chain plate carrier wheel material feeder, comprising:
 - a guiding groove, a support chain plate wheel, a support chain plate wheel supporter, a scraper chain, a material scraping plate, a wheel-guarding material-guiding support plate, a driving gear roller, a redirecting gear roller, a driver and a frame; wherein
 - the guiding groove is connected with a bin opening;
 - a lower part of the guiding groove is fastened to the frame;
 - the guiding groove is connected with the frame fixedly or movably;
 - the wheel-guarding material-guiding support plate is arranged at the lower part of the guiding groove and is supported by the frame, or is hooked up to the guiding groove;
 - the material scraping plate is disposed between two scraper chains;
 - the support chain plate wheel supporter comprises a link support chain plate wheel track;
 - the link support chain plate wheel track is arranged on the wheel-guarding material-guiding support plate or is integrated with the wheel-guarding material-guiding support plate;
 - the support chain plate wheel comprise a link support chain plate wheel, a scraper support chain plate wheel or a frame support chain plate wheel;
 - the scraper chain comprises a shaft threading link or a shaft roller link;
 - the shaft threading link is composed of a chain connecting plate and a chain threading shaft, and the shaft roller link comprises a chain connecting plate, a chain threading shaft and a chain roller;
 - a width of the support chain plate wheel is less than a distance between two chain connecting plates, and the support chain plate wheel supports the chain roller, or a width of the support chain plate wheel is greater than a distance between two chain connecting plates, and the support chain plate wheel supports the chain connecting plate;
 - when the link support chain plate wheel is used, the link support chain plate wheel is arranged on the chain threading shaft;
 - the link support chain plate wheel is separately arranged or is integrated with a chain roller;
 - the wheel-guarding material-guiding support plate is provided with the link

support chain plate wheel track;

a width of the link support chain plate wheel track is less than a distance between two chain connecting plates;

a height of the link support chain plate wheel track makes the link support chain plate wheel lift the material scraping plate, so that a gap forms between the material scraping plate and the wheel-guarding material-guiding support plate, and the scraper chain and the material scraping plate run to scrape and load materials under a rolling support of the link support chain plate wheel, or when the scraper support chain plate wheel is used, the scraper support chain plate wheel is arranged on the material scraping plate, and the material scraping plate runs to scrape and load materials under a rolling support of the scraper support chain plate wheel, or when the frame support chain plate wheel is used, the frame support chain plate wheel is arranged between the driving gear roller and the redirecting gear roller;

a position, corresponding to the frame support chain plate wheel, of the support chain plate wheel supporter is supported by the frame;

the support chain plate wheel supporter is connected with the frame separately or integrally;

the driving gear roller and the redirecting gear roller are arranged in front and rear of the wheel-guarding material-guiding support plate;

the scraper chain is buckled on the driving gear roller and the redirecting gear roller surrounding the wheel-guarding material-guiding support plate, the driving gear roller, the frame support chain plate wheel and the redirecting gear roller;

an outer surface of the frame support chain plate wheel is higher than an upper end face of the wheel-guarding material-guiding support plate;

the support chain plate wheel supporter is provided with a support chain plate wheel bearing or a support chain plate wheel shaft;

when the support chain plate wheel supporter is provided with the support chain plate wheel bearing, the frame support chain plate wheel is provided with a support chain plate wheel shaft;

the support chain plate wheel bearing supports the support chain plate wheel shaft to rotate;

the frame support chain plate wheel is arranged near a bottom surface of an upper chain of the scraper chain;

the scraper chain and the material scraping plate are supported by the frame

support chain plate wheel;

the scraper chain and the wheel-guarding material-guiding support plate are separated by gaps, the material scraping plate and the wheel-guarding material-guiding support plate are separated by gaps;

the driver drives the driving gear roller to rotate;

the scraper chain drives the redirecting gear roller to rotate;

the driving gear roller drives the scraper chain and the material scrapping plate to rotate;

the scraper chain and the material scrapping plate rotate to the frame support chain plate wheel and drive the frame support chain plate wheel to rotate;

the frame support chain plate wheel rolls and rotates to support the scraper chain and the material scraping plate to convey materials, or when the support chain plate wheel supporter is provided with the support chain plate wheel shaft, the frame support chain plate wheel comprises a support chain plate wheel bearing, and the support chain plate wheel bearing is buckled and sleeved on the support chain plate wheel shaft;

the scraper chain and the material scraping plate rotate to the frame support chain plate wheel and drive the support chain plate wheel to rotate;

the support chain plate wheel rolls and rotates to support the scraper chain and the material scraping plate to convey materials, which realizes fully rolling frictional material conveyance and material loading of the scraper feeder;

the frame support chain plate wheel and the support chain plate wheel bearing are connected separately or integrally;

the wheel-guarding material-guiding support plate is a straight plate, or a part, near the frame support chain plate wheel, of the wheel-guarding material-guiding support plate is provided with a support chain plate wheel groove;

the frame support chain plate wheel extends out from the support chain plate wheel groove to lift the scraper chain and the material scraping plate;

the lower part of the guiding groove near the scraper chain is set as a flat plate or the lower part of the guiding groove near the scraper chain is provided with a protective scraper chain and a protective chain plate wheel baffle of the support chain plate wheel;

when the protective chain plate wheel baffle is used, a width of the protective chain plate wheel baffle is greater than a width from an inner wall of the guiding

groove to the support chain plate wheel groove;

the protective chain plate wheel baffle prevents materials from entering the support chain plate wheel groove and flowing to a lower part of the wheel-guarding material-guiding support plate; and

a power of the driver is reduced by using the support chain plate wheel, and a sliding friction loss between the material scraping plate and the wheel-guarding material-guiding support plate is avoided, so that the material scraping plate runs to feed materials without noise and has long service life.

2. The fully rolling friction chain plate carrier wheel material feeder as claimed in claim 1, wherein the support chain plate wheel shaft comprises a half shaft or a through shaft; the support chain plate wheel is positioned with the support chain plate wheel shaft by means of a shaft shoulder, a spacer sleeve, a retainer ring, a baffle, a bolt, a pressing cover and/or a locating pin; the through shaft positions the support chain plate wheels on two ends to prevent the support chain plate wheels from tilting under heavy pressure.

3. The fully rolling friction chain plate carrier wheel material feeder as claimed in claim 1, wherein the frame comprises a return material cleaning hopper and a lower chain falling material cleaning chain guide; the scraper chain rotates to an upper part of a wheel-guarding retainer plate, which is called an upper scraper chain; the scraper chain rotates to a lower part of the wheel-guarding retainer plate, which is called a lower scraper chain; the return material cleaning hopper is arranged at the frame and near the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding retainer plate, and has a distance away from the scraper chain and the material scraping plate; the lower chain falling material cleaning chain guide comprises a pressing wheel chain guide or a catching groove chain guide; the lower chain falling material cleaning chain guide is arranged on the return material cleaning hopper or on the frame or on the support chain plate wheel supporter; the pressing wheel chain guide comprises a pressing-down chain wheel chain guide or a support upper chain pressing-down chain wheel; when the pressing-down chain wheel chain guide is used, the pressing-down chain wheel chain guide and the support chain plate wheel are arranged separately, and the pressing-down chain wheel chain guide presses a lower chain of the scraper chain; when the support upper chain pressing-down chain wheel is used, the support upper chain pressing-down chain wheel and the support chain plate wheel are arranged

separately or integrally; when the support upper chain pressing-down chain wheel and the support chain plate wheel are arranged integrally, an upper surface of the support upper chain pressing-down chain wheel supports the scraper chain and the material scraping plate on an upper part of the wheel-guarding material-guiding support plate, and a lower surface of the support upper chain pressing-down chain wheel is arranged on an upper part of the lower scraper chain and the material scraping plate to limit the lower scraper chain and the material scraping plate, so the lower scraper chain and the material scraping plate are limited by the support upper chain pressing-down chain wheel; when the catching groove chain guide is used, the catching groove chain guide is arranged on the frame or on the return material cleaning hopper; the catching groove chain guide is buckled on the scraper chain and there is a gap between the catching groove chain guide and the scraper chain, so as to limit the scraper chain to bounce; the lower chain falling material cleaning chain guide limits the scraper chain and the material scraping plate that rotate to a lower part of the wheel-guarding material-guiding support plate, so that the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate scrape a return coal and falling coal and other materials in the return material cleaning hopper onto the wheel-guarding material-guiding support plate, and scrape the return coal and falling coal and other materials in the return material cleaning hopper to a loading and unloading port for transferring.

4. The fully rolling friction chain plate carrier wheel material feeder as claimed in claim 1 or 3, wherein the frame or the return material cleaning hopper comprises a lower material cleaner; the lower material cleaner is arranged on the upper part of the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate, and is supported by the frame or the return material cleaning hopper; the lower material cleaner is arranged near the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate and near a tail, so as to prevent material jamming between the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate and the driving gear roller at the tail or the redirecting gear roller at the tail.

5. The fully rolling friction chain plate carrier wheel material feeder as claimed in claim 3, wherein the return material cleaning hopper comprises a left side plate, a

right side plate and a material cleaning base plate; the left side plate comprises a left vertical side plate and a left inclined side plate, and the right side plate comprises a right vertical side plate and a right inclined side plate; the left vertical side plate and the right vertical side plate are arranged vertical to the material cleaning base plate; the left inclined side plate and the right inclined side plate are arranged inclined to the material cleaning base plate; the left inclined side plate guides the return coal and coal sludge at a left side into the material cleaning base plate, and the right inclined side plate guides the return coal and coal sludge at a right side into the material cleaning base plate, which is convenient for the scraper chain and the material scraping plate that rotate to the lower part of the wheel-guarding material-guiding support plate to scrape the return coal and the falling coal onto the wheel-guarding material-guiding support plate for transferring.

6. The fully rolling friction chain plate carrier wheel material feeder as claimed in claim 3, wherein the return material cleaning hopper is arranged on a lower part of the fully rolling friction chain plate carrier wheel material feeder, and holds a falling coal, a falling coal sludge and the return coal on the fully rolling friction chain plate carrier wheel material feeder, which is convenient for a lower material scraping plate to scrape the return coal and the falling coal onto the wheel-guarding material-guiding support plate; a tail of the return material cleaning hopper is higher than the part, near a loading and unloading port, of the return material cleaning hopper relative to the ground, so as to make the coal sludge flow into the loading and unloading port for a next conveyance; or the return material cleaning hopper is provided with a water guide groove of material cleaning hopper; the water guide groove of material cleaning hopper guides the coal sludge into a sewage disposal facility or into a coal sludge collecting container to ensure a clean and environmental friendly situation.

7. The fully rolling friction chain plate carrier wheel material feeder as claimed in claim 3, wherein a left side plate and/or a right side plate is higher than the lower chain falling material cleaning chain guide and the material scraping plate, to prevent the materials from spilling from the left side plate and/or the right side plate.

8. The fully rolling friction chain plate carrier wheel material feeder as claimed in claim 3, wherein a tail of the return material cleaning hopper is provided with a curved tail drop guide; the curved tail drop guide is arranged at a return part of the scraper chain facing toward an unloading port; the curved tail drop guide is supported by the return material cleaning hopper or the frame; the curved tail drop guide is connected

with the frame movably or integrally; an arc of the curved tail drop guide is not less than an arc of an arc surface of the scraper chain moving upward along the driving gear roller or the redirecting gear roller; a curved material guide channel is formed between the curved tail drop guide and a surface of the driving gear roller or a surface of the redirecting gear roller; the curved material guide channel is beneficial for the scraper chain to drive the material scraping plate to scrape the coal and other materials in the return material cleaning hopper to the wheel-guarding retainer plate; a height of the curved tail drop guide is higher than the material scraping plate on the driving gear roller and the redirecting gear roller, so as to prevent the material scraping plate from piling up the materials at a tail to spill; when the curved tail drop guide is connected with the frame movably, the frame is provided with a connecting tail material guide component, and correspondingly, the curved tail drop guide is provided with a material guide connecting frame component; the connecting tail material guide component is connected with the material guide connecting frame component movably; when two-way feeding is needed, the material guide connecting frame component is removed from the connecting tail material guide component, and the driver drives the scraper chain to reverse, so as to realize reverse feeding.

9. The fully rolling friction chain plate carrier wheel material feeder as claimed in claim 8, wherein the curved tail drop guide comprises a fixed curved tail drop guide or a detachable curved tail drop guide; when the detachable curved tail drop guide is used, the detachable curved tail drop guide comprises an upper curved tail drop guide and a lower curved tail drop guide; the upper curved tail drop guide is movably docked to the lower curved tail drop guide; when the curved tail drop guide is blocked or needs to be repaired, the upper curved tail drop guide is removed, which facilitates maintenance and observation.

10. The fully rolling friction chain plate carrier wheel material feeder as claimed in claim 3, wherein the return material cleaning hopper comprises a self-slip inclined base plate; an opening at an inclined angle of the self-slip inclined base plate faces toward an unloading port; the inclined angle is not less than a self-slip stacking angle of materials, so that the materials flow to the unloading port along the self-slip inclined base plate; or the return material cleaning hopper comprises a base plate the front section of which folds downward; a section, close to an unloading port, of the base plate the front part of which folds downward is a front self-slip inclined base plate, and a section close to the tail is a rear flat base plate; the front self-slip inclined

base plate makes the materials on the section close to the unloading port slide along the front self-slip inclined base plate into a next conveying mechanism; the rear flat base plate scrapes the materials close to the tail from the lower material scraping plate to the wheel-guarding material-guiding support plate to be conveyed to the unloading port; the base plate the front part of which folds downward reduces a height of the whole machine and reduces a load of scraping the return material.

11. The fully rolling friction chain plate carrier wheel material feeder as claimed in claim 1, wherein the support chain plate wheel comprises a gear support chain plate wheel or a roller support chain plate wheel; the support chain plate wheel comprises a rubber support chain plate wheel, a polyurethane support chain plate wheel, a nylon support chain plate wheel, a steel support chain plate wheel, an alloy support chain plate wheel, a cast iron support chain plate wheel, a plastic steel support chain plate wheel, an aluminum support chain plate wheel, a porcelain support chain plate wheel or a plastic support chain plate wheel.

12. The fully rolling friction chain plate carrier wheel material feeder as claimed in claim 3, wherein the return material cleaning hopper or the frame is provided with a support lower chain track; the support lower chain track matches with a roller sleeve of the lower scraper chain; a width of the support lower chain track is less than a distance between two chain connecting plates of the lower scraper chain; the roller sleeve of the lower scraper chain rolls along the support lower chain track, which changes a sliding friction between the scraper chain and the return material cleaning hopper, reduces a friction resistance, and reduces a mutual wear between the support lower chain track and the lower scraper chain, thus making a machine with a reduction in noise, reducing an energy consumption of sliding friction, reducing a thickness of the return material cleaning hopper, reducing a cost, and prolonging a service life of the return material cleaning hopper and the scraper chain.

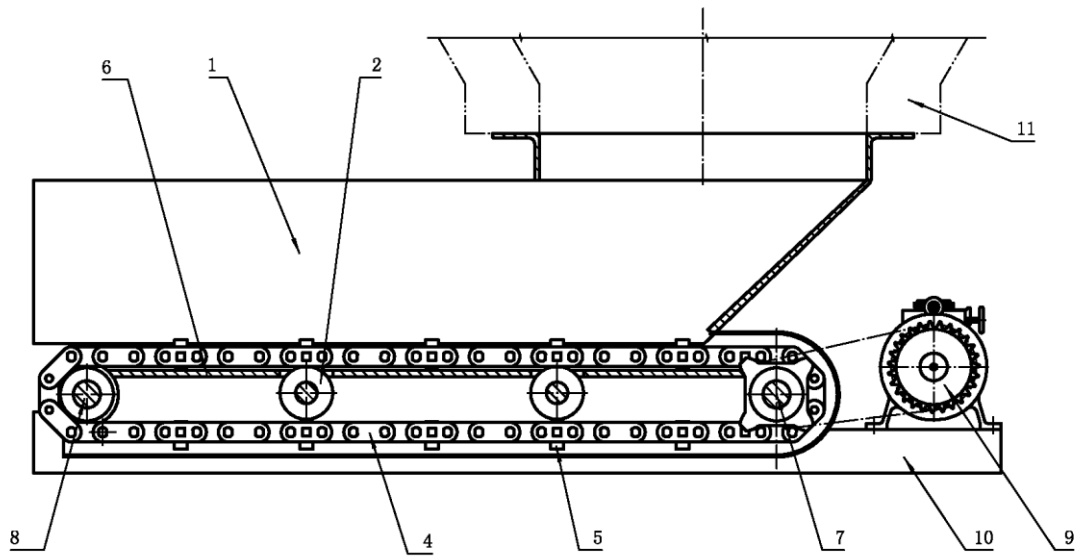


Fig. 1

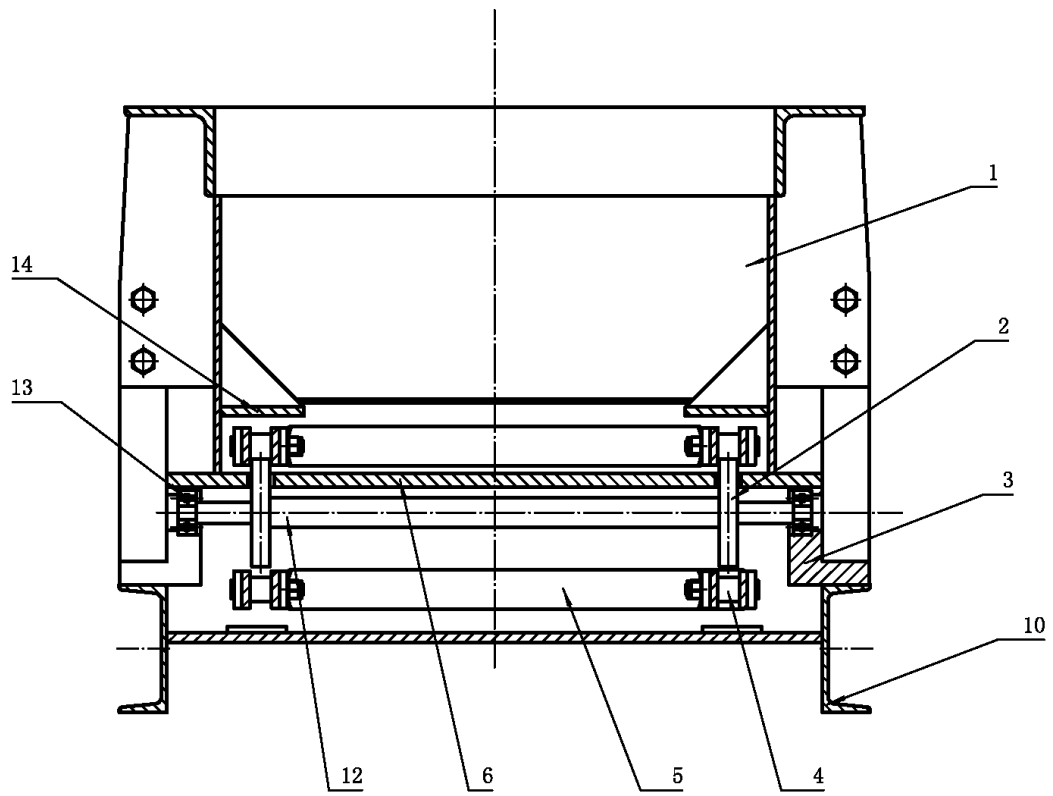


Fig. 2

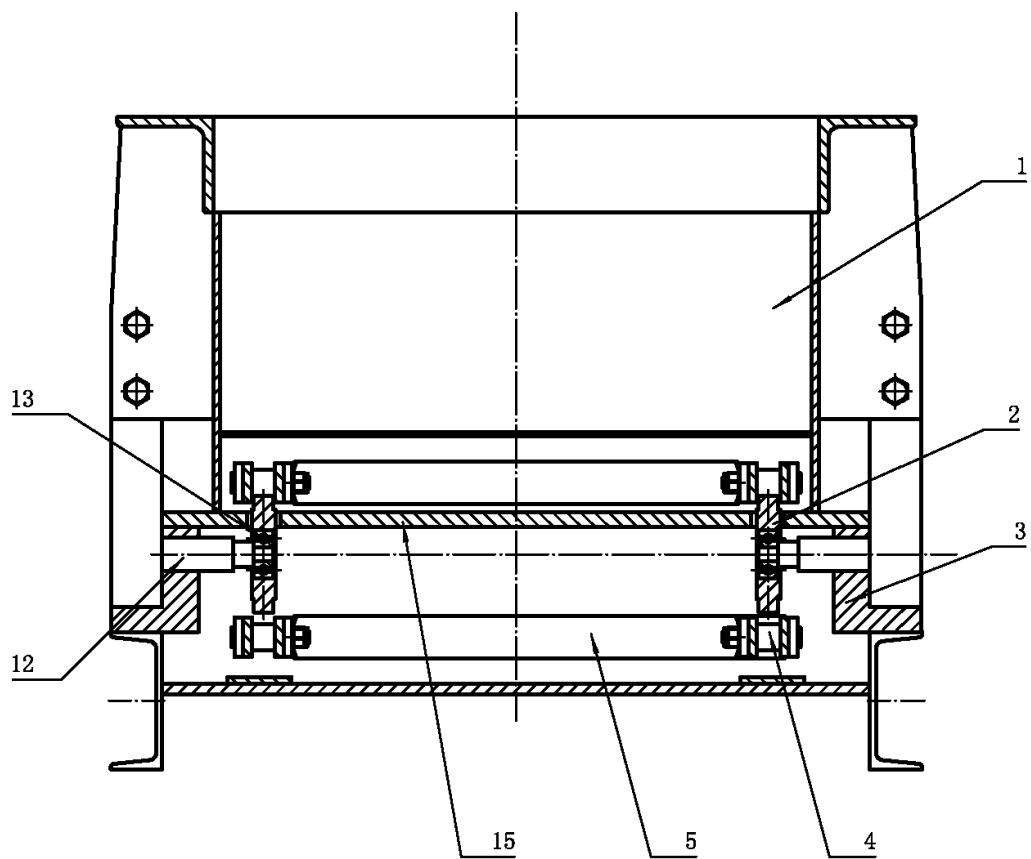


Fig. 3

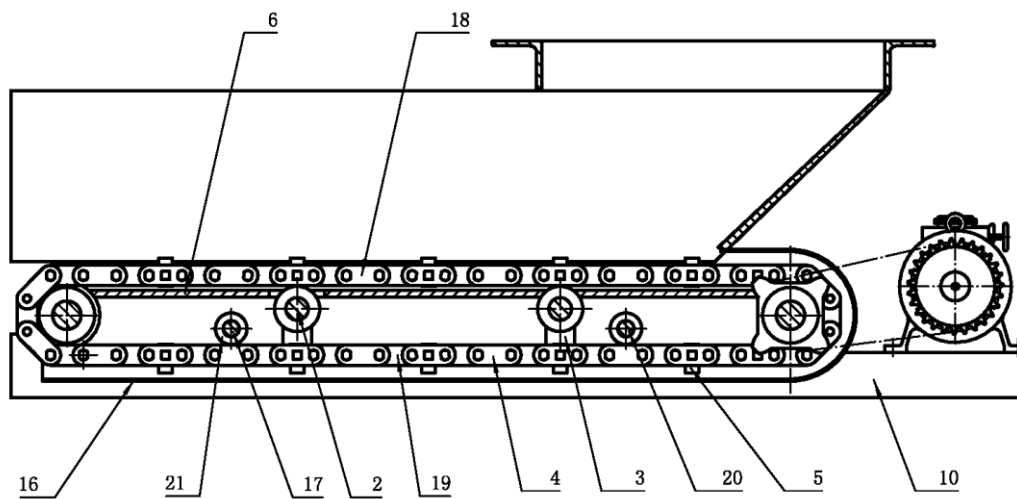


Fig. 4

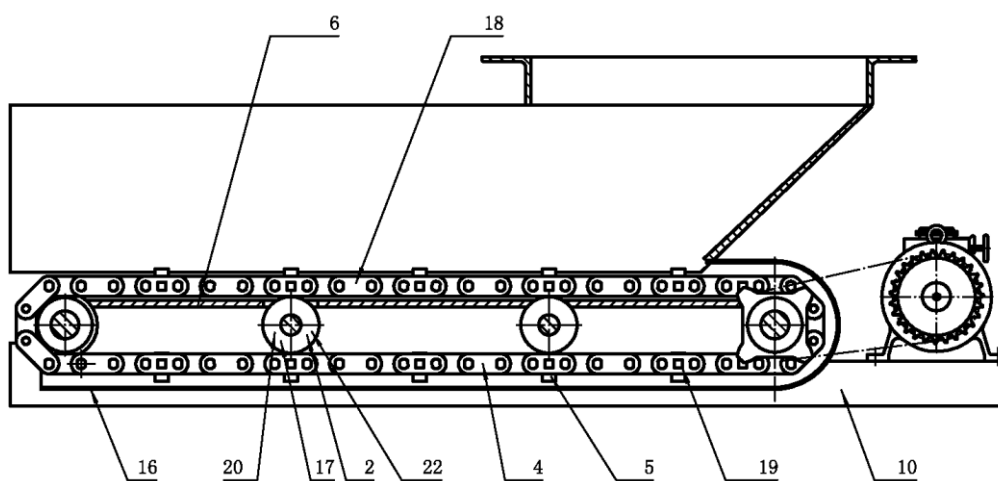


Fig. 5

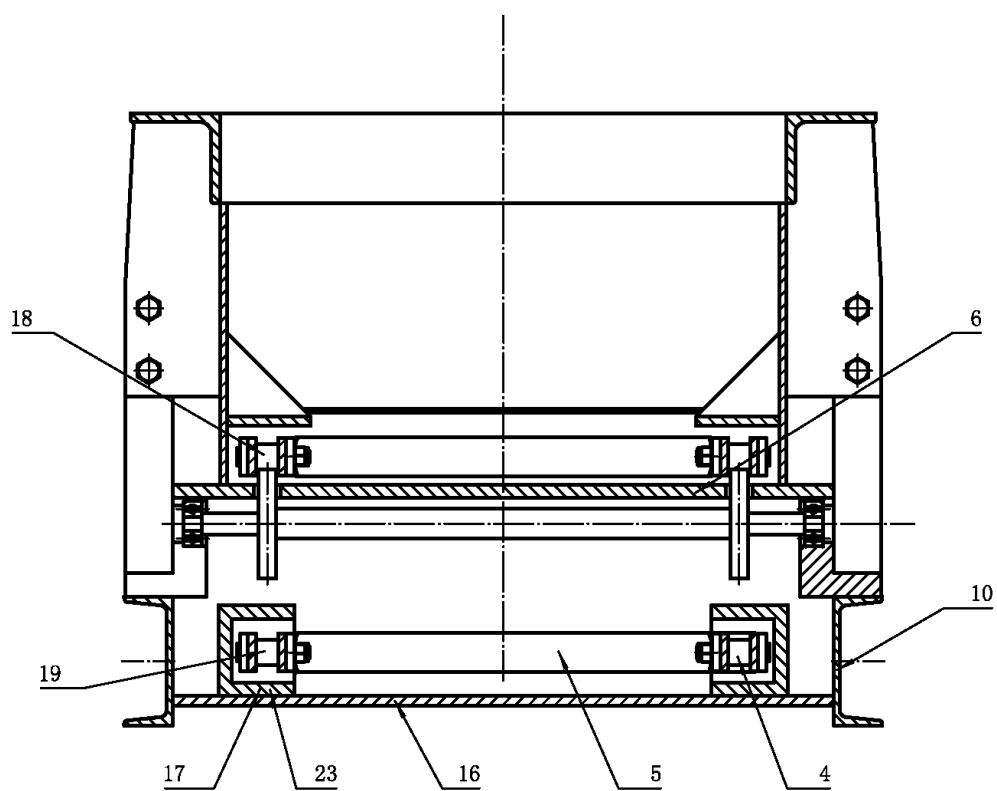


Fig. 6

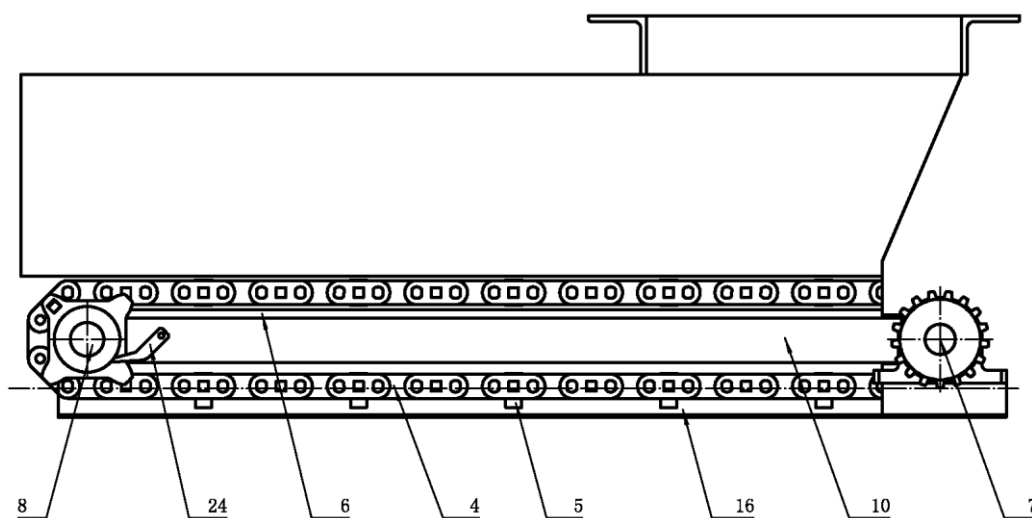


Fig. 7

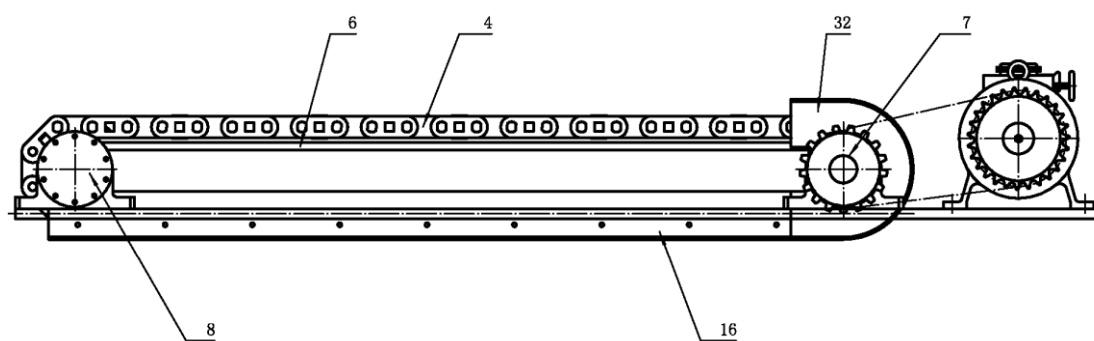


Fig. 8

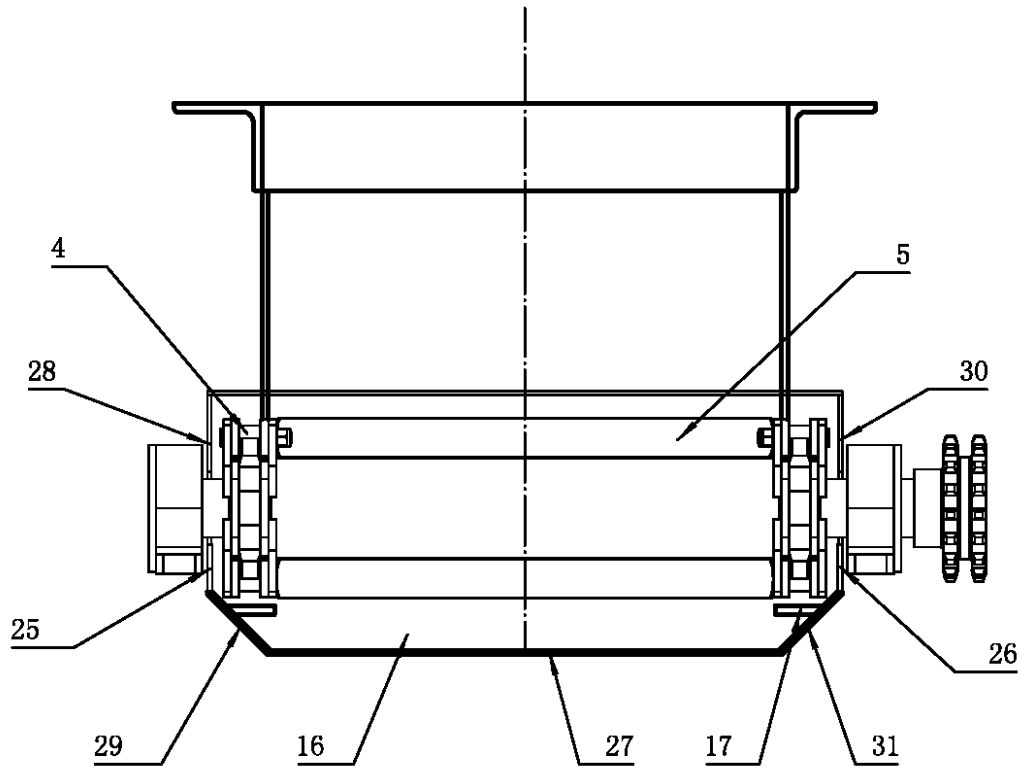


Fig. 9

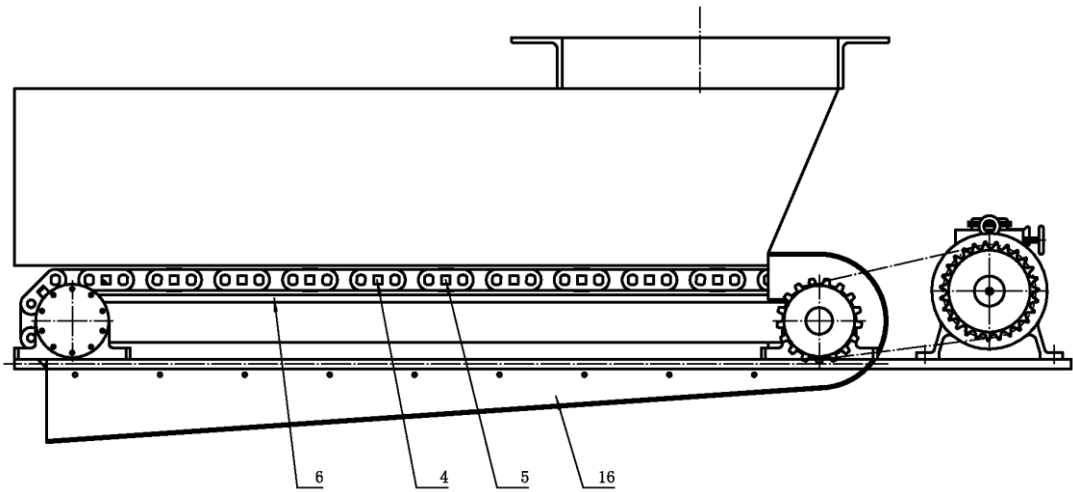


Fig. 10

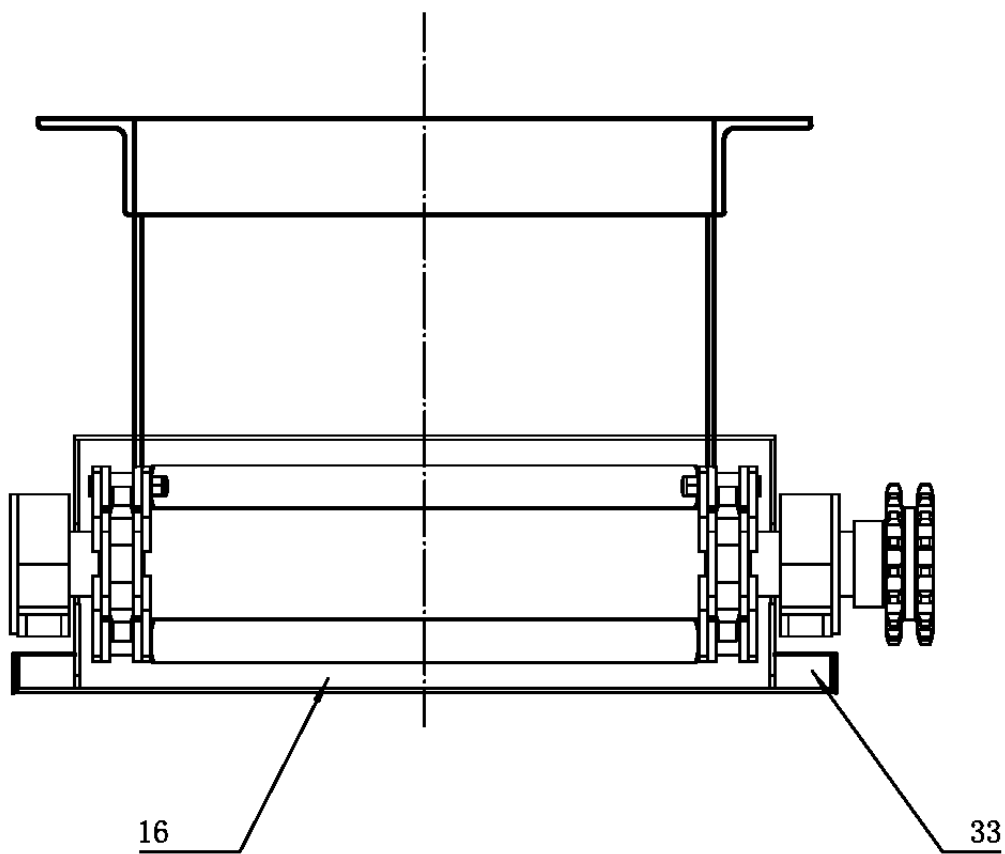


Fig. 11

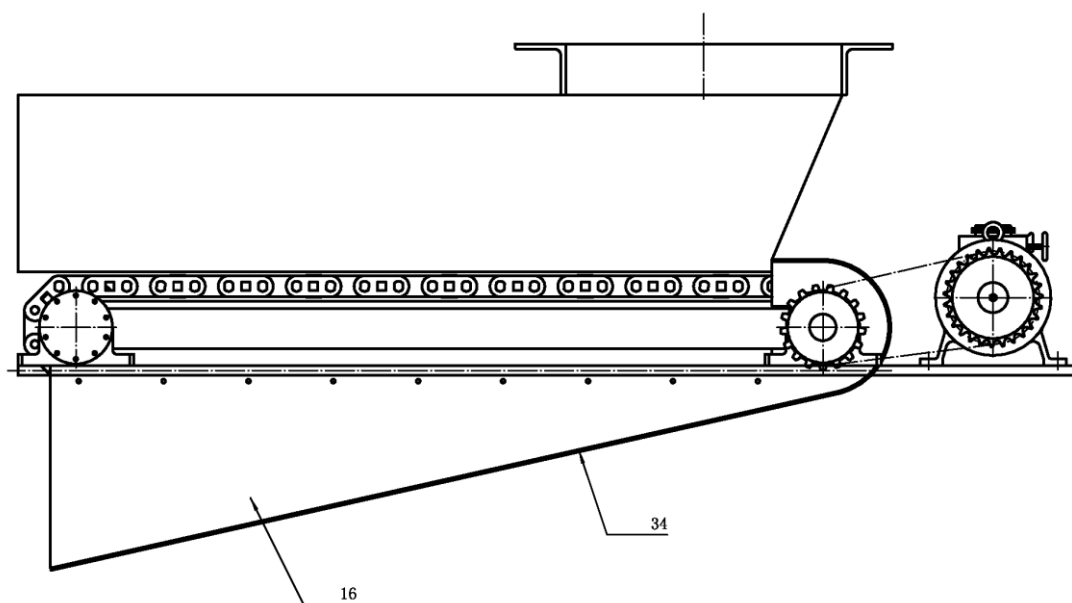


Fig. 12

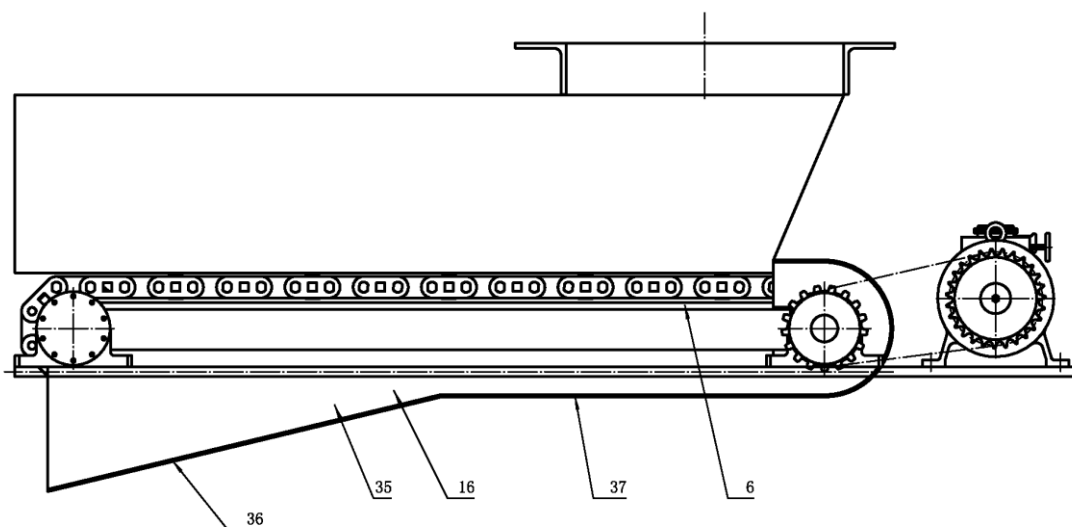


Fig. 13

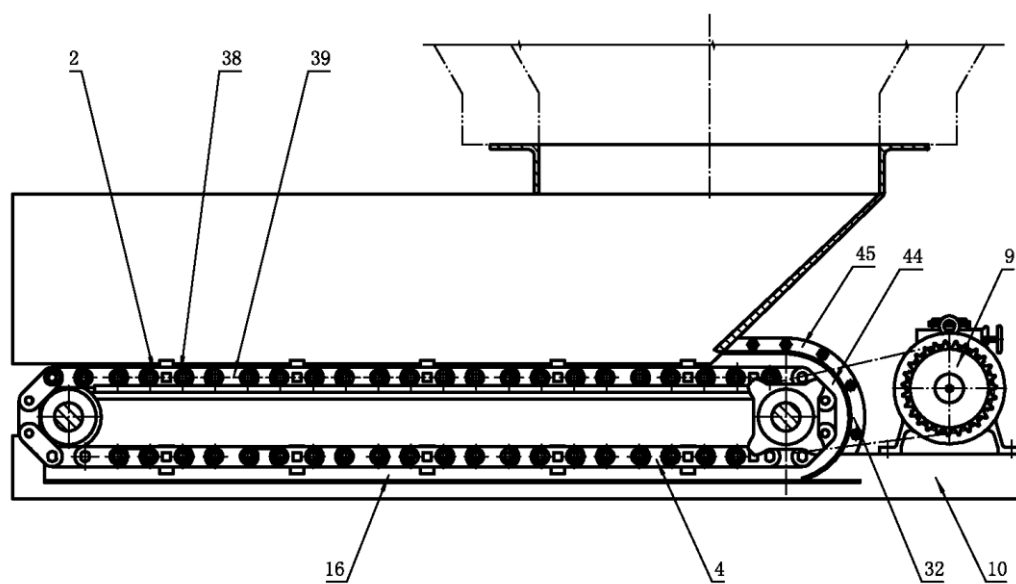


Fig. 14

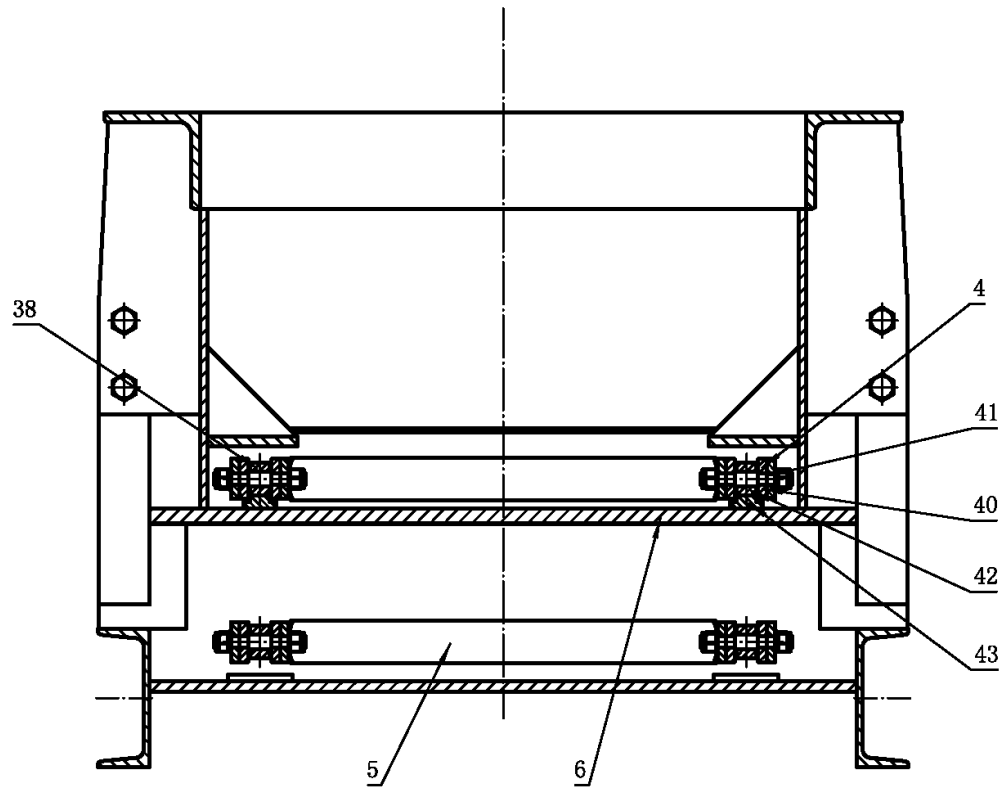


Fig. 15

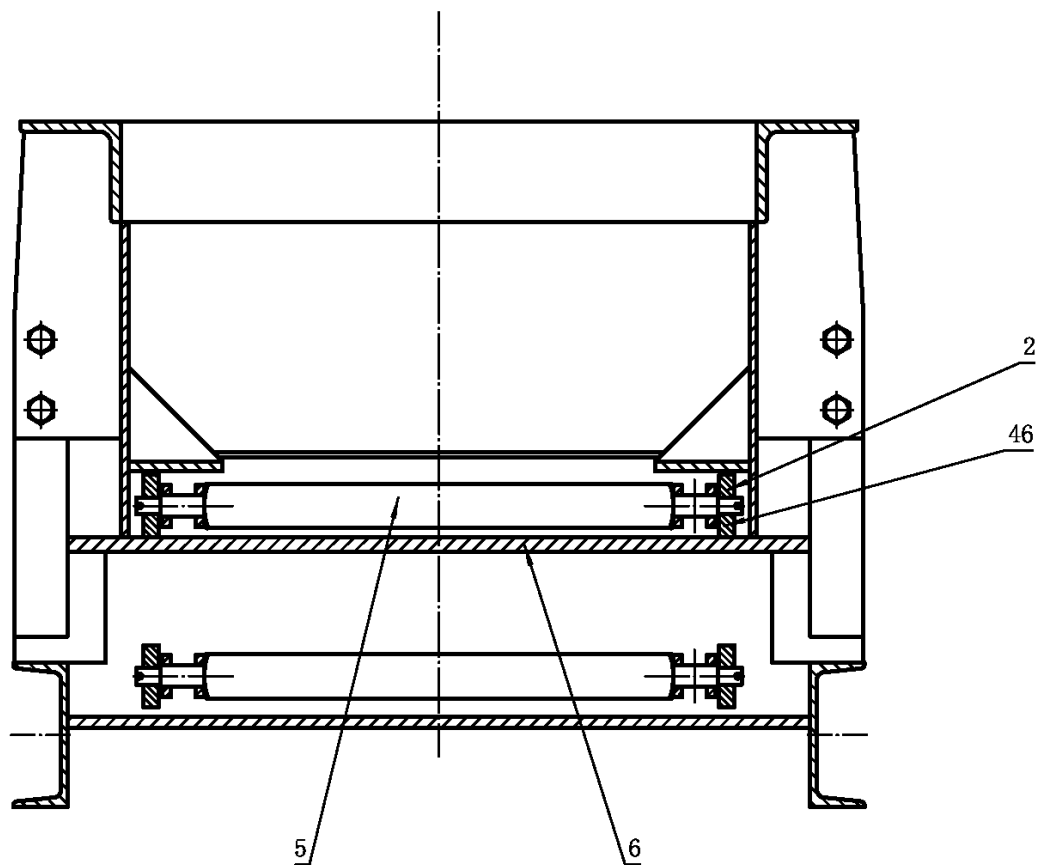


Fig. 16

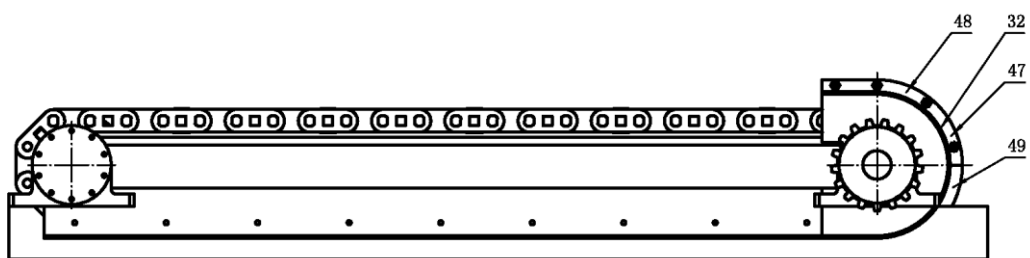


Fig. 17

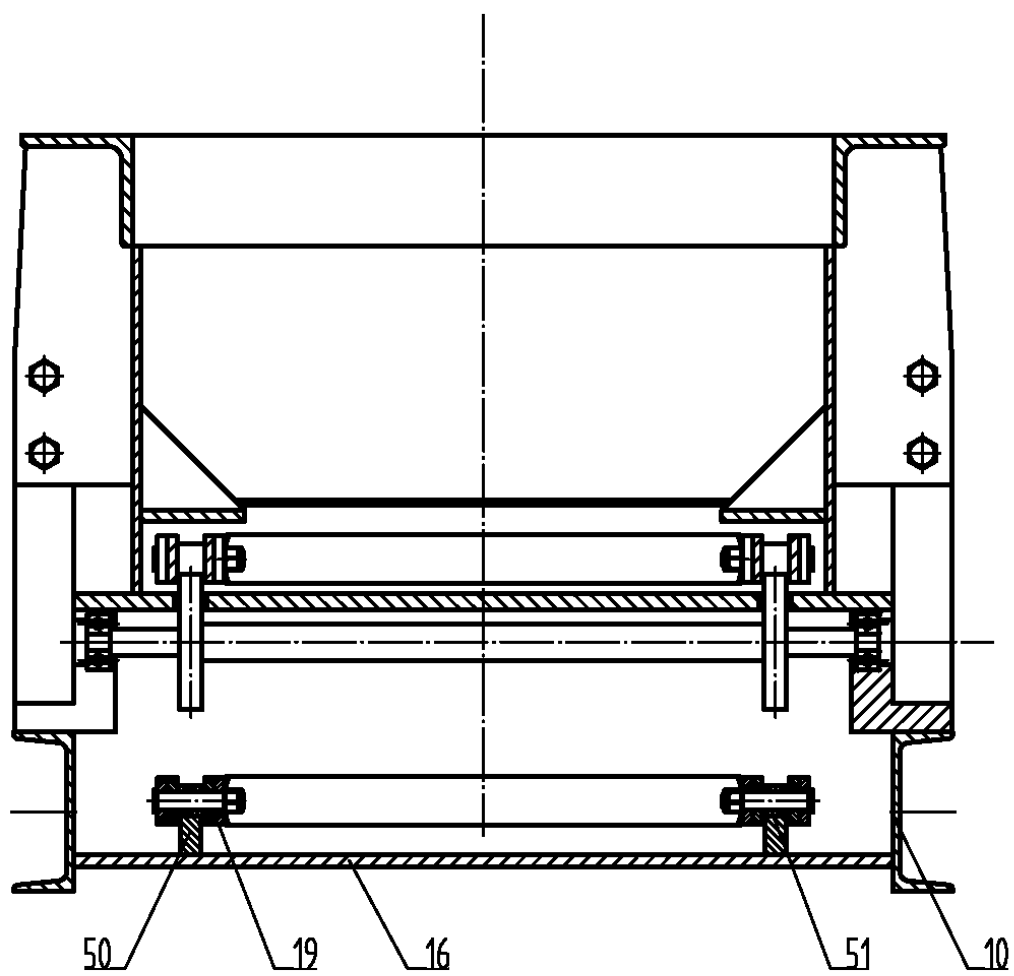


Fig. 18

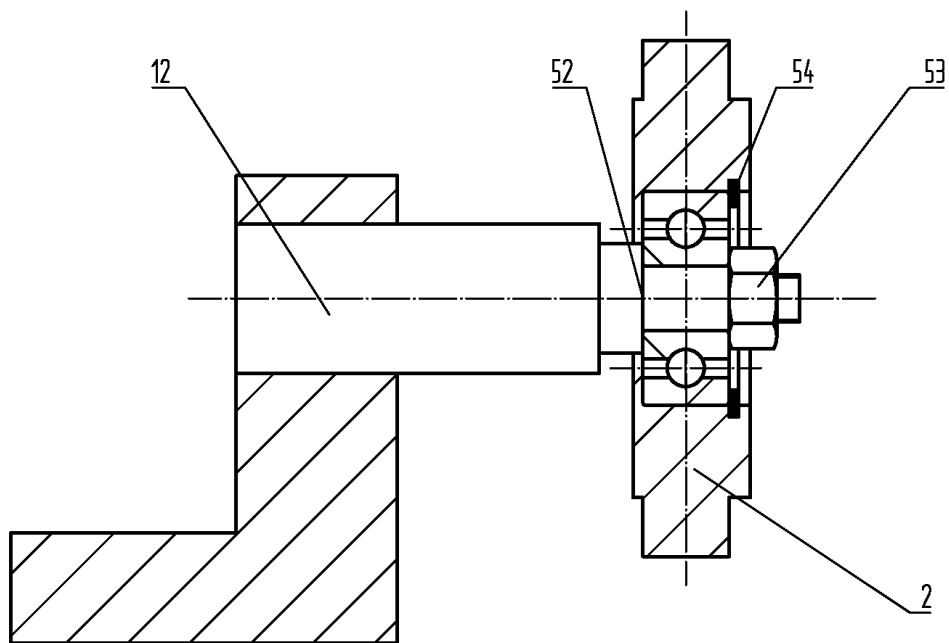


Fig. 19

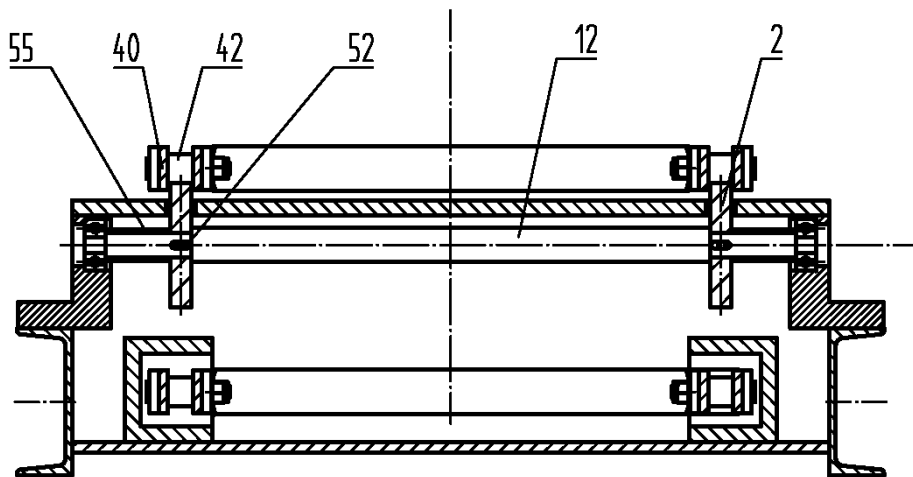


Fig. 20

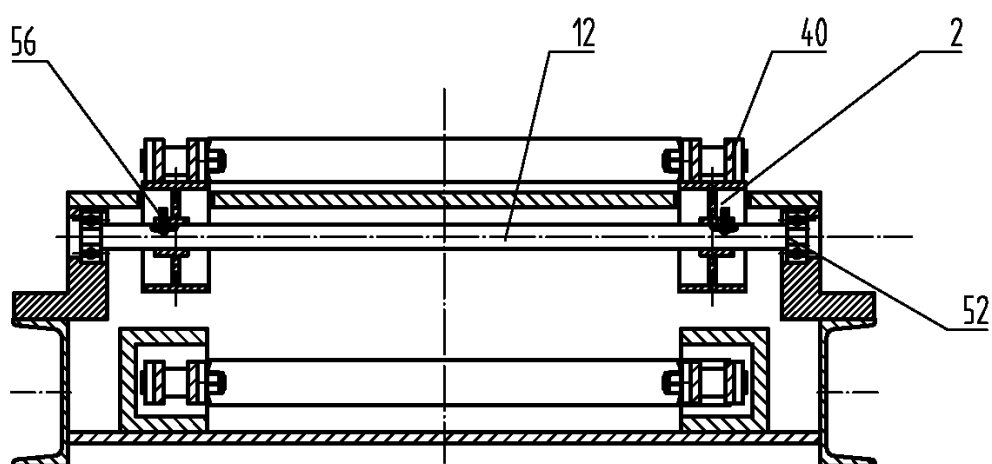


Fig. 21

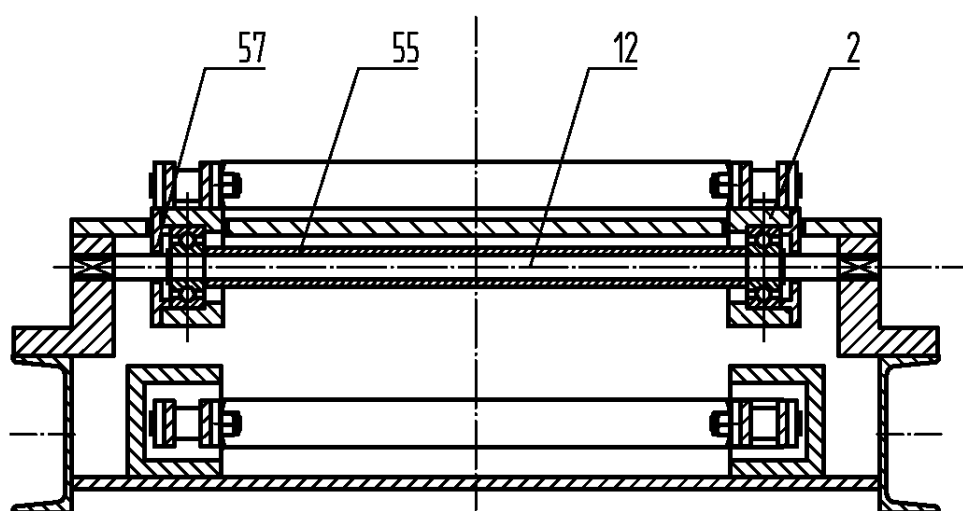


Fig. 22