No. 782,772. PATENTED FEB. 14, 1905.

E. BIVERT.

LOADER.

APPLICATION FILED SEPT. 16, 1902.

3 SHEETS—SHEET 1.

Fig. 1.

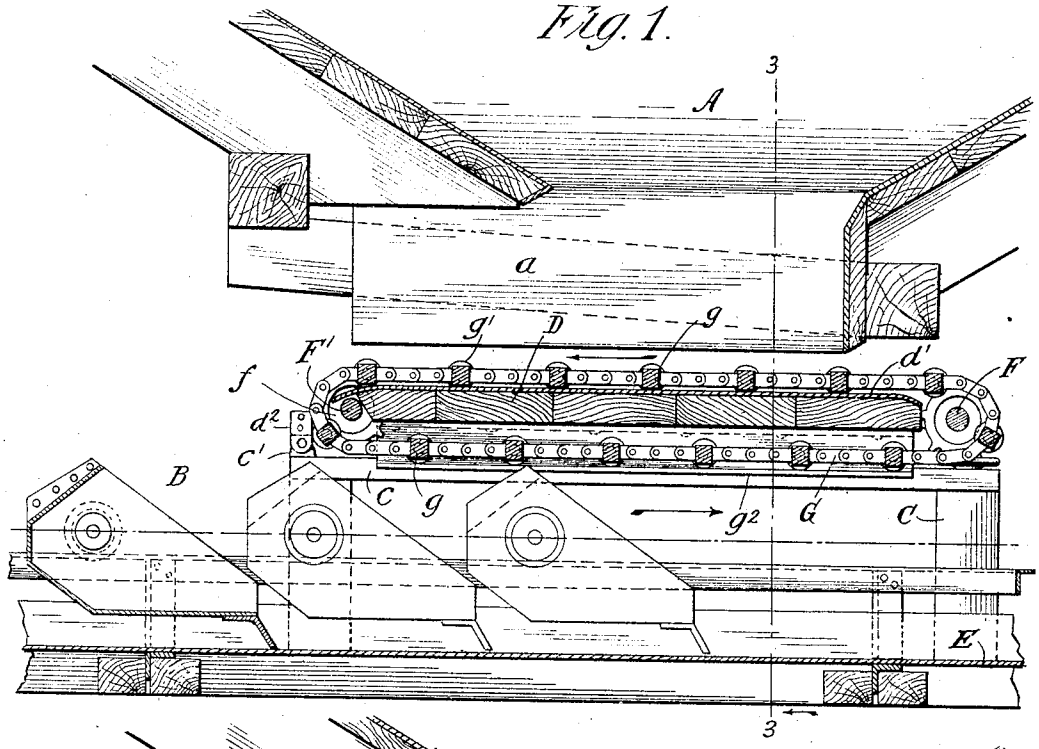
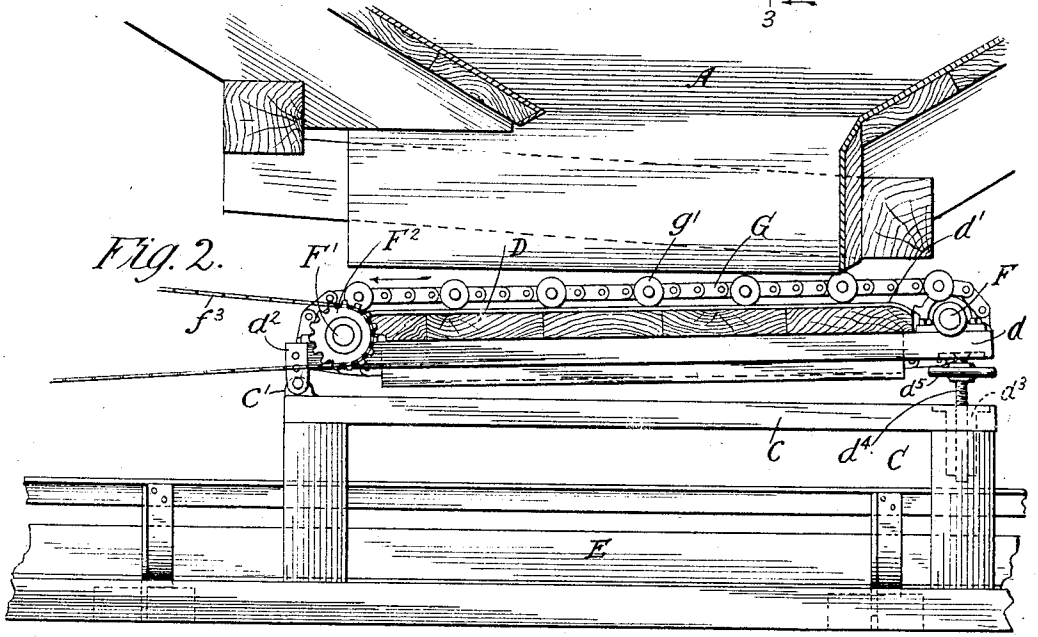


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 3

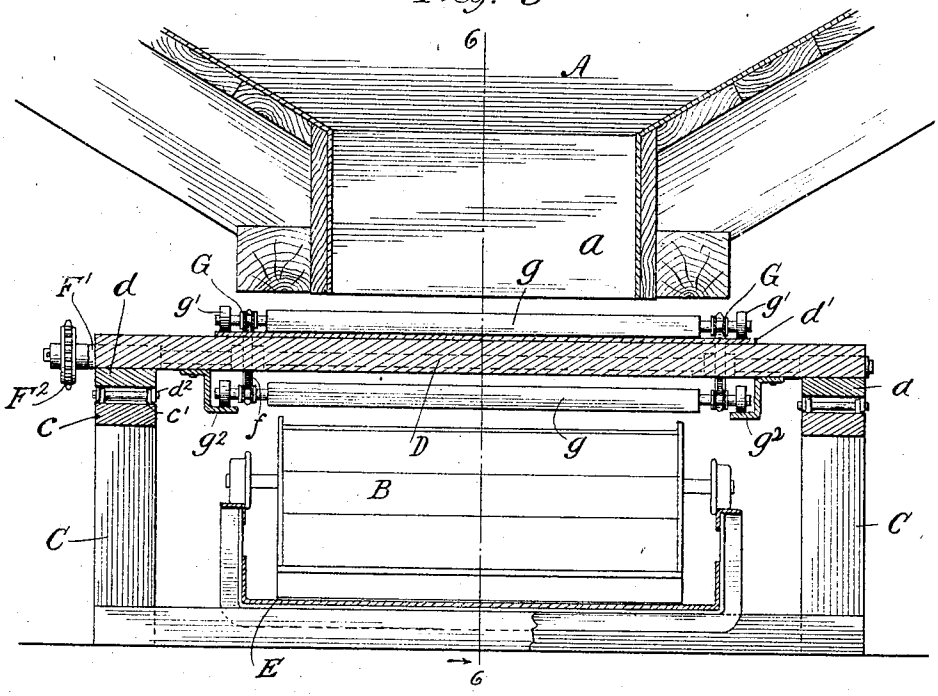


Fig. 4.

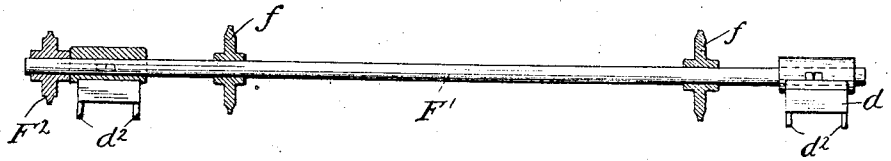
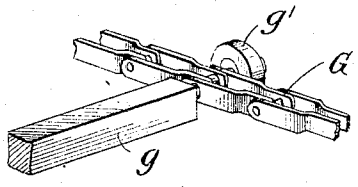


Fig. 5.



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APPLICATION FILED SEPT. 16, 1902.

3 SHEETS—SHEET 3.

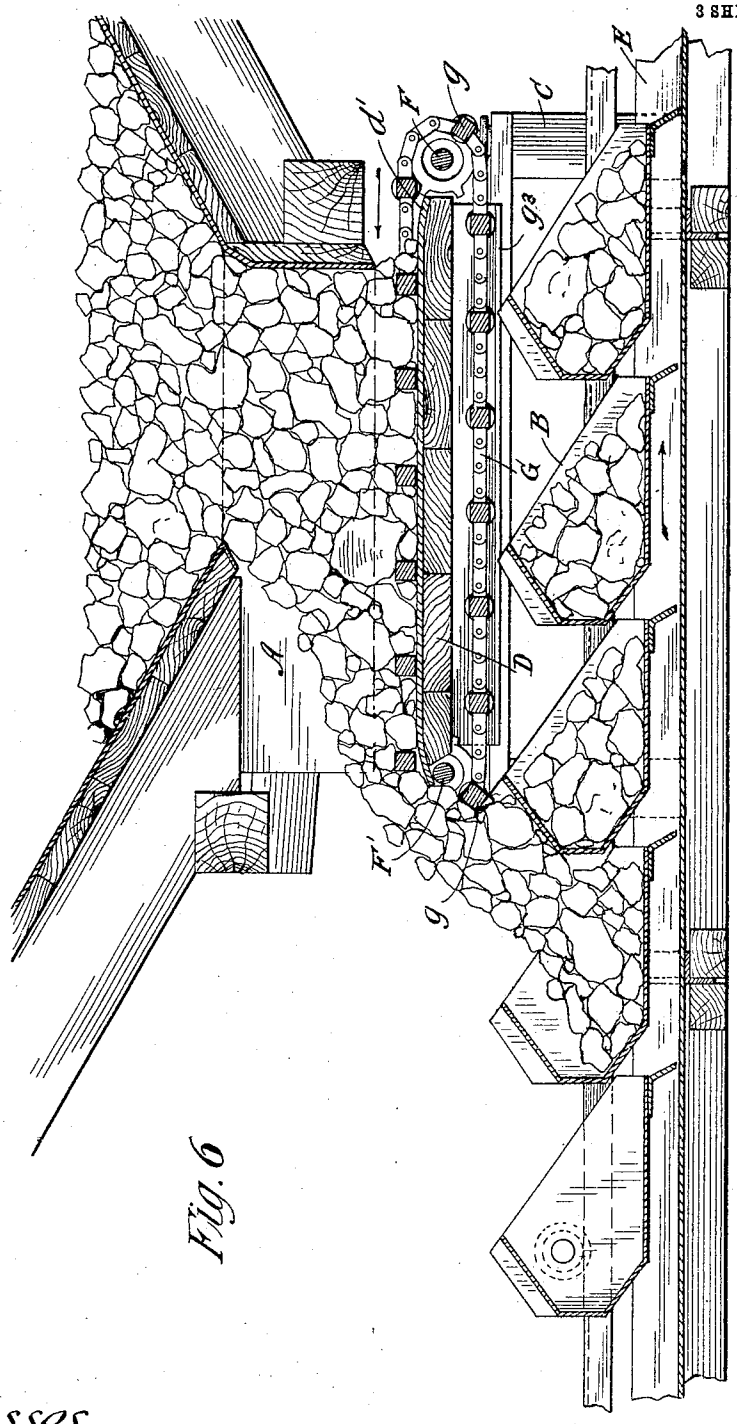


Fig. 6

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No. 782,772. Patented February 14, 1905.

UNITED STATES PATENT OFFICE.

EUGENE BIVERT, OF CHICAGO, ILLINOIS.

LOADER.

SPECIFICATION forming part of Letters Patent No. 782,772, dated February 14, 1905.

Application filed September 16, 1902. Serial No. 123,596.

To all whom it may concern:

Be it known that I, EUGENE BIVERT, a citizen of the Republic of France, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Loaders; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in loaders, and is shown embodied more particularly in a loader designed for delivering material, such as coal or the like, to a conveyer, and is shown embodied in relation with a pivoted bucket conveyer, for which I have executed application for Letters Patent of even date herewith.

Heretofore it has been found difficult to deliver material, such as coal, from a bin or bunker to a conveyer with such regularity as to insure uniform loading of the conveyer.

The object of the invention is to provide a loader whereby material may be delivered to receiving means uniformly and at any desired rate of speed.

With loaders of the class described it is important that the construction be such as to avoid possibility of clogging or overloading the conveyer and to permit the delivery to be regulated to suit different grades of the material.

The invention embraces many novel features; and it consists in the matters hereinafter described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a longitudinal vertical section of a device embodying my invention. Fig. 2 is a side elevation of the loader, with the rear edge of the table elevated and showing the bunker in section. Fig. 3 is a section taken on line 3 3 of Fig. 1. Fig. 4 is a detail of the driving-shaft. Fig. 5 is a fragmentary detail illustrating the means for actuating the feed. Fig. 6 is a section taken on line 6 6 of Fig. 3, illustrating the operation.

As shown in said drawings, A indicates a hopper-bottomed storage bin or bunker adapted to contain the material and provided with a chute a, opening downwardly upon and slightly to the rear of the center of the loader, from which the material is discharged to the conveyer B, herein shown as the pivoted bucket conveyer set forth in my application for United States Letters Patent for pivoted bucket conveyer executed of even date herewith. Said loader is supported above the conveyer on posts C, located at each end of the loader and on each side of the conveyer B and connected at their tops with longitudinal sills c, parallel with the conveyer B. A table (indicated as a whole by D) is supported on said sills in position to receive the material from the chute and is hinged to the rear ends of said sills. Adjusting means are provided on the front ends of the sills adapted to incline the table toward the point of delivery. Said table comprises longitudinal strips d, corresponding with the sills c and located above the same and decked with planks. The outer corners of the first and last planks are chamfered, and a covering of sheet metal d' is provided thereon, extending for the entire length of the table and to some distance on each side of the chute a and upon which material falls. At the rear end of each strip d is provided a casting or fitting d^2, having downwardly-depending knuckles adapted to engage on each side of the upwardly-extending knuckles c', secured on the sills and through which extends a pintle-bolt in a familiar manner forming the hinge. Said table is adapted to be tilted rearwardly on said hinges by means of jack-screws located under each front corner of the table and comprising the nut d^3, which is elongated and extends downwardly through the front end of each sill c and into the post C and indicated in dotted lines in Fig. 2. A threaded shaft d^4, provided with a hand-wheel or other convenient means for rotating the same, engages in each nut, and on the upper end of said shaft d^4 the front end of the strip d rests, a suitable plate being provided to afford a bearing for the end of said screw-shaft.

Journaled on the ends of the strips d and transversely of the table are the sprocket-shafts F and F'. Sprocket-wheels f are pro-

vided near each end of each shaft and laterally of the chute a, and sprocket-chains G are provided thereon, in which are journaled the cylindric ends of the lags g of the conveyer. Said lags, as shown, are angular bars, which on the upper lap of the conveyer fit closely to and are supported on the metallic covering of the delivery-table by rollers g', journaled on the outer ends of the lags beyond the chains. Ways g^2 are provided for the rollers on the under side of the table D, comprising, as shown, Z-bars, rigidly secured by riveting, bolting, or like means on the under sides of the table and providing inwardly-directed horizontal flanges, as shown in Fig. 3, on which said rollers travel. Power from any desired source may be used to drive the conveyer B and actuate the loader, as shown. A sprocket-wheel F^2 is provided on one end of the shaft F', and a sprocket-chain f^3 communicates power thereto and acts to move the lags longitudinally of the table and, as shown, oppositely from the direction of the conveyer B.

The operation is as follows: The storage-bin or bunker is located above and slightly in advance of the center of the table in position that material falling from said bunker through the chute a is delivered centrally on the table. The rear side of the chute a is open, and the rear end of the table extends beyond the chute a sufficient distance to prevent the material falling from said table. When it is desired to fill the buckets B, said buckets and conveyer and the loader are actuated, as shown, oppositely, though obviously they may both move in the same direction. The lags of the loader act to draw the material into the buckets, the inclination of the table and the rate at which the loader is driven determining the rate of delivery to the conveyer.

Obviously details of construction may be varied without departing from the principles of my invention.

I claim as my invention—

1. The combination with a bin or bunker, of an adjustably-inclined table beneath the same and adapted to receive material therefrom, a conveyer movable below the table and a carrier movable transversely of the table and acting to direct material therefrom into the conveyer.

2. The combination with a bin or bunker having a hopper-bottom, of an inclined table adapted to receive material therefrom, a carrier movable transversely of the table and acting to direct material therefrom into a conveyer located beneath the same and means for holding the table at the desired inclination.

3. In a device of the class described the combination with a supporting-frame, of a table hinged at one of its margins thereto, oppositely-disposed means acting to adjust and hold the table in an inclined position, a carrier movable on the top of the table comprising parallel chains, transverse lags connecting the same, and means for actuating said carrier across the top of the table and in the direction of the hinge thereon.

4. A loader of the class described comprising a table adapted to receive the material, means for inclining the top of the table in the direction of the flow of the material and a chain carrier movable on the face of the table and acting to draw the material therefrom.

5. The combination with a storage pocket or bunker, of a table beneath the same adapted to receive the contents thereof, a conveyer comprising a plurality of connected scoop-shaped buckets movable below the table, means for adjustably inclining the top of the table toward the conveyer and a carrier movable down the inclined face of the table and acting to draw the material therefrom into the conveyer-buckets.

6. In a device of the class described the combination with a supporting-frame, of a trough below the same, a conveyer movable therein, a table hinged at its rear margin on said frame, means for adjustably inclining the table rearwardly, a metallic covering on said table, a carrier comprising chain-connected transverse metallic lags movable down the inclined surface of the table and acting to draw material therefrom into the conveyer.

7. The combination with a horizontally-movable conveyer, of a storage pocket or bunker located above the same, a table located between the conveyer and the pocket, means for inclining said table toward the point of delivery to the conveyers and chain-connected transverse lags movable longitudinally of the top of the table acting to draw the material therefrom into the conveyers and a roller on each end of each lag and bearing on the table.

8. The combination with an inclinable table, of a metallic covering thereon, a shaft journaled transversely at each end of the table, sprocket-wheels thereon, chain belts engaged on said sprocket-wheels with one of the lags extending above the table and the other below the table, transverse angular metallic lags having cylindric ends journaled in said chains and a roller on each end of each lag adapted to support the same above the table, and ways secured below the table to receive said rollers.

9. In a device of the class described, the combination with a horizontal conveyer, of a pocket or bunker located above the same, a table intermediate of the conveyer and pocket and adapted to receive the material from the pocket and deliver the same to the conveyer, a carrier movable above and in alinement with the conveyer and longitudinally of the table, and means for regulating the rate of delivery of the conveyer comprising a screw-shaft and a complemental fixed nut engaged respectively upon the table and its supporting-frame and acting to vary the inclination of the table with respect to the point of discharge therefrom.

10. In a device of the class described the combination with a bunker of a supporting-frame beneath the same, a top hinged at one margin to one side of said frame, means adapted to incline the top with respect to said bunker, an endless flexible carrier on said top and a conveyer adapted to pass beneath the same and receive material therefrom.

11. The combination with a horizontally-movable conveyer, of a storage bin or bunker above the same, a table intermediate said conveyer and said bin having a plain upper face, sprocket-shafts journaled on the ends of said table and a chain conveyer carried thereon adapted to travel above said table.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

EUGENE BIVERT.

Witnesses:

WELLINGTON W. WITHENBURY,

A. C. ODELL.