No. 851,888. PATENTED APR. 30, 1907.

C. C. JACOBS.

BUCKET FOR EXCAVATING MACHINES.

APPLICATION FILED JAN. 2, 1906.

2 SHEETS—SHEET 1.

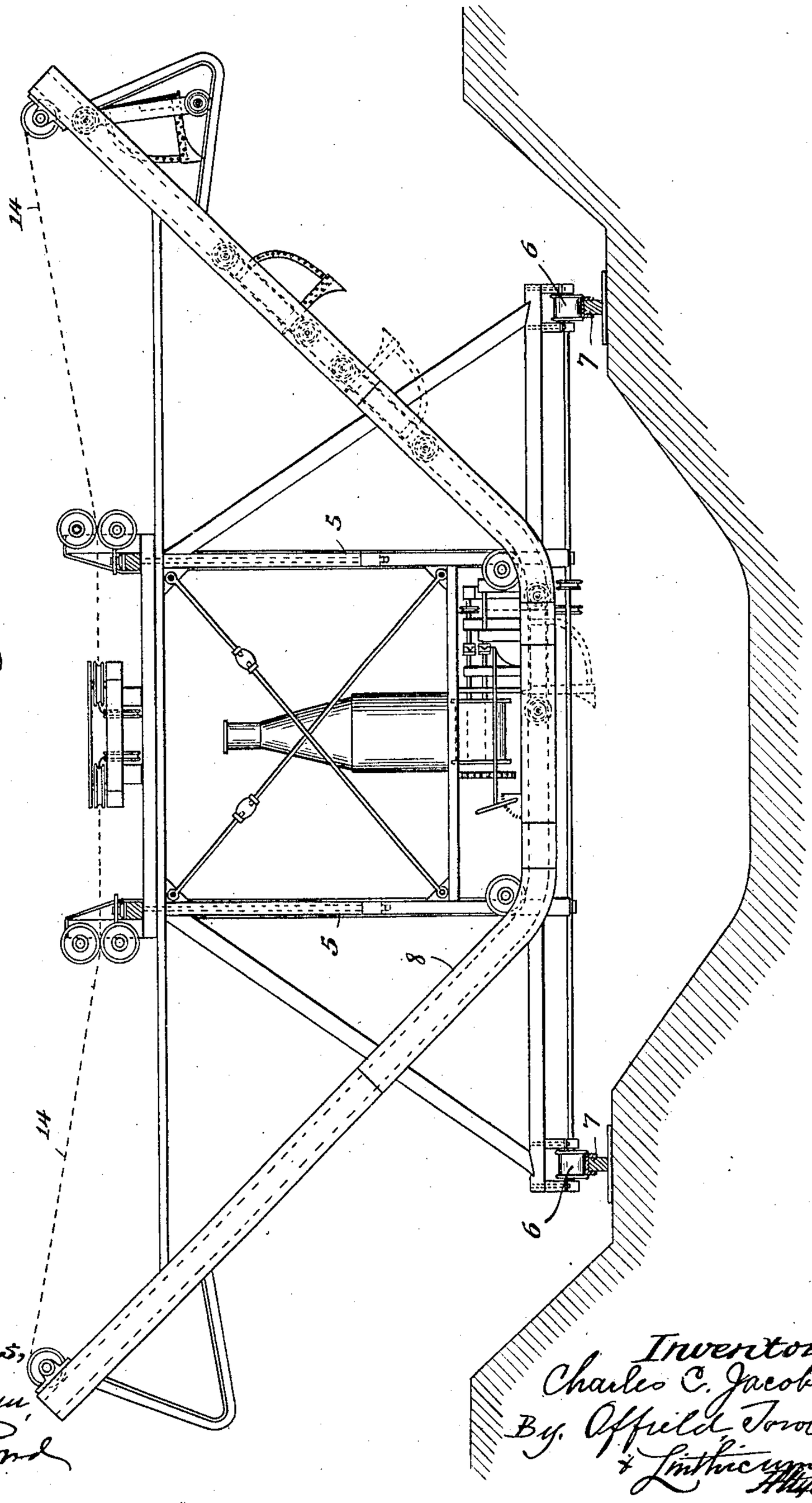


Fig. 1.

Witnesses,
F. D. Mann.
D. N. Ford

Inventor,
Charles C. Jacobs,
By Offield Towle
& Linthicum
Attys.

No. 851,888. PATENTED APR. 30, 1907.

C. C. JACOBS.

BUCKET FOR EXCAVATING MACHINES.

APPLICATION FILED JAN. 2, 1906.

2 SHEETS—SHEET 2.

Fig. 2.

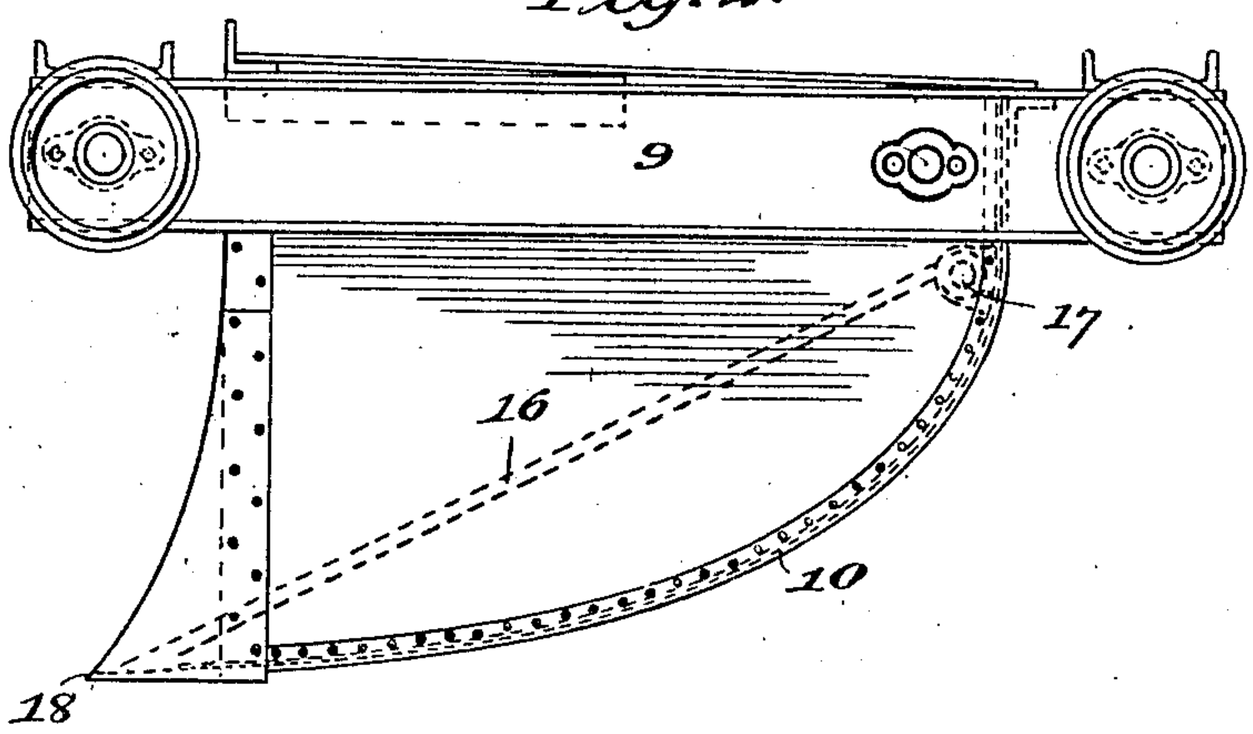
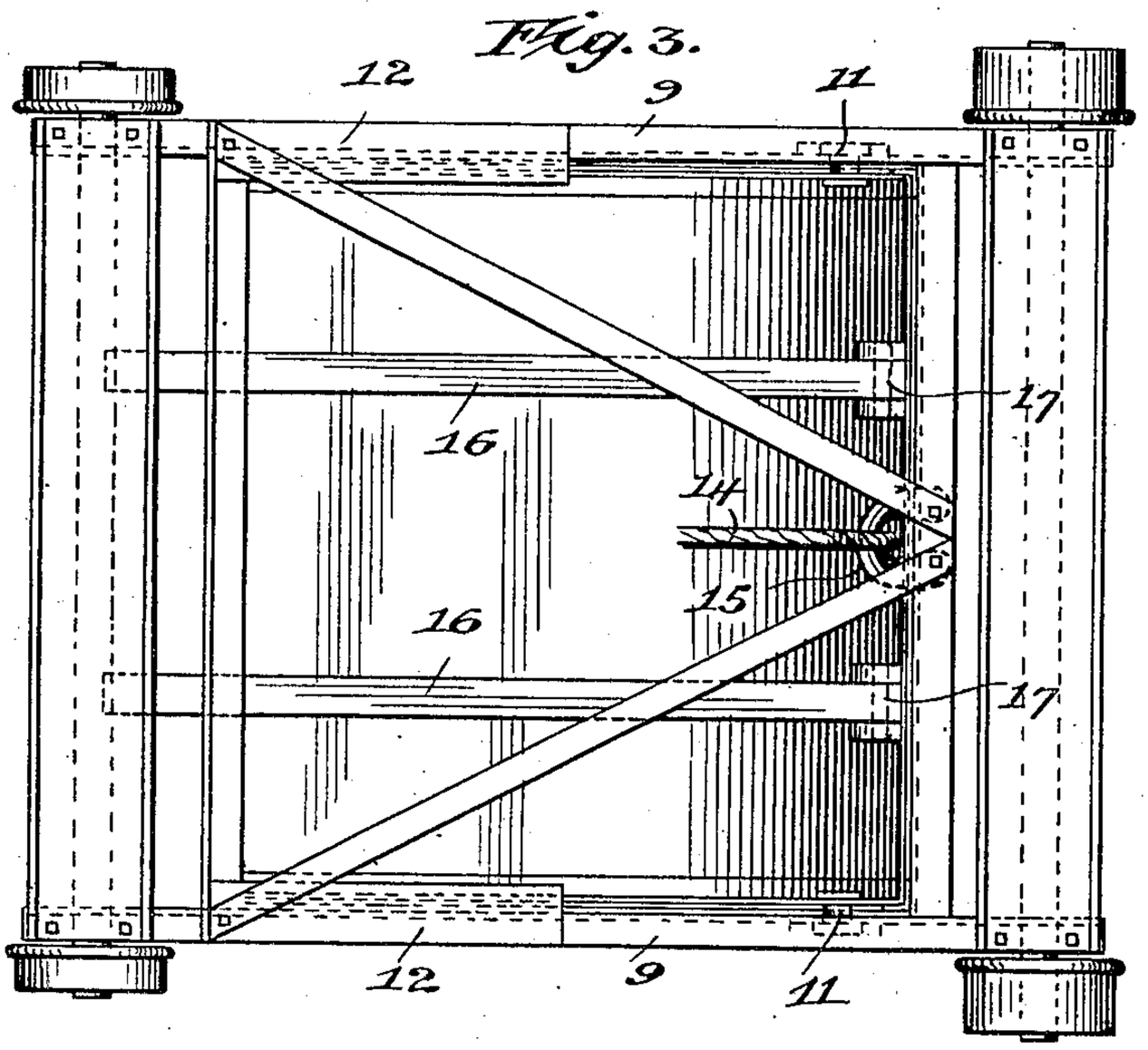


Fig. 3.



Witnesses,
F. D. Mann,
S. N. Pond

Inventor;
Charles C. Jacobs,
By Offield, Towler & Linthicum
Atty's.

UNITED STATES PATENT OFFICE.

CHARLES C. JACOBS, OF AMBOY, ILLINOIS, ASSIGNOR TO JACOBS STEEL EXCAVATOR COMPANY, OF AMBOY, ILLINOIS, A CORPORATION OF ILLINOIS.

BUCKET FOR EXCAVATING-MACHINES.

No. 851,888. Specification of Letters Patent. Patented April 30, 1907.

Application filed January 2, 1906. Serial No. 294,203.

To all whom it may concern:

Be it known that I, CHARLES C. JACOBS, a citizen of the United States, residing at Amboy, in the county of Lee and State of Illinois, have invented certain new and useful Improvements in Buckets for Excavating-Machines, of which the following is a specification.

This invention relates to buckets or scoops of that type employed in excavating-machines wherein the buckets are mounted on a conveyer and provided with suitable guides which cause the buckets in their travel to cut into the earth and scoop up a load, the latter being discharged at one or both sides of the machine by suitably tilting or inverting the loaded bucket.

It has been found in practice that, by reason of the damp or sticky character of the material operated upon, a considerable portion of the load tends to adhere to the bottom of the bucket in the discharging operation, thus causing the buckets to operate at considerably less than their maximum efficiency.

The object of this invention is to provide a construction in which this objection shall be obviated, and the clean and thorough discharge of the load, when the bucket is inverted, insured; and to this end the invention consists substantially of one or more load-disintegrating strips or tongues pivotally mounted in the bucket and so disposed as to break up and loosen the material operated upon as it is received by the bucket in the scooping operation, as well as to more or less agitate the material when the bucket is inverted, both operations contributing to the freedom and thoroughness of the discharge of the material from the inverted bucket.

For the sake of convenience I have herein illustrated my improved bucket as applied to an excavating machine such as is shown in Letters Patent No. 794,410, granted to me July 11, 1905, but it will be readily understood that the subject-matter of the present invention is capable of universal application to excavating machines employing excavating buckets of the general type herein shown.

Referring to the drawings, wherein I have shown the preferred mechanical embodiment of the invention,—Figure 1 is an elevational view of an excavating machine having my improved bucket applied thereto; Fig. 2 is a side elevational view of a single bucket and the trunk by which it is carried; and Fig. 3 is a top plan view of Fig. 2.

Referring to the drawings, 5 designates as an entirety the main frame of an excavating machine mounted on wheels 6 running on rails 7, whereby the machine is moved bodily along its field of operation.

8 designates, as an entirety, a guide mounted on and transversely of the main excavator frame, with capacity for vertical adjustment therein; said guide conforming to the outline contour of the ditch or trench to be dug, and forming a rigid track on which are mounted a series of rectangular trucks 9 carrying the buckets or scoops 10. The bucket 10 is pivotally connected near its rear end at 11 to the sides of the truck, and the forward end portions of the sides of the bucket have laterally projecting flanges 12 overlying the upper edges of the sides of the truck, whereby the forward cutting edge of the bucket is held to its work under the pull of the excavating cable.

In the machine herein shown two buckets are employed disposed back to back and having adjacent axles of their respective trucks connected by a link 13, one of said buckets cutting in one direction of travel of the excavating cable 14, and the other bucket cutting during the opposite travel of said excavating cable; the adjacent ends of the cable being connected to clevises 15 secured to the rear edges of the buckets.

For a more particular description of the machine, reference may be had to the Letters Patent hereinabove referred to.

Considering now that feature wherein my present improvement resides, 16 designates each of a pair of cleaner bars or tongues consisting of metal strips that are pivoted at 17 to the rear wall of the bucket and overlie the latter, the free ends of said bars extending substantially to the forward cutting edge of the bucket indicated at 18. These cleaner bars are preferably straight and sufficiently stiff or rigid to withstand the impact of the load as it is taken on by the bucket; and serve the principal function of breaking up and more or less disintegrating the material which latter is frequently of a sticky and cohesive nature, such as damp clay. This breaking up of the material as it is received causes it to lie more lightly in the bucket and decreases its tendency to adhere to the inner

walls of the bucket. The consequence of this is that when the bucket is inverted in the discharging operation, as shown at the right in Fig. 1, the dirt or other material discharges freely from the bucket, leaving the latter in a comparatively clean and empty condition. As the bucket is overturned in the discharging operation, the cleaner bars swing or oscillate on their pivots with the falling of the load, in this operation also facilitating the dislodgment of the load from the walls of the bucket and its clean discharge.

From the foregoing it will be seen that the action of the cleaners is entirely automatic and that the cleaners thus do not interfere to any appreciable extent with the load-carrying capacity of the buckets. I have found this device particularly useful when operating upon damp and sticky earths which, while comparatively easy to take up and remove through the agency of buckets or scoops such as herein shown and described, are difficult of discharge even under a complete inversion of the bucket.

I claim:

1. The combination with an excavating bucket, of means carried thereby adapted to break up the material received by said bucket to facilitate its discharge therefrom, substantially as described.

2. The combination with an excavating bucket, of one or more cleaners in the form of a rod or bar pivotally mounted above the bottom of the bucket, substantially as described.

3. The combination with an excavating bucket having a forward cutting edge, of one or more cleaner bars pivotally connected to the rear wall of the bucket and overlying the bottom of the latter, substantially as described.

4. The combination with an excavating bucket having a forward cutting edge, of one or more cleaner bars pivotally connected to the rear wall of the bucket and extending substantially to the cutting edge, substantially as described.

CHARLES C. JACOBS.

Witnesses:
W. A. GREEN,
P. M. JAMES.