

(No Model.)

2 Sheets—Sheet 1.

J. HOCKING.
SCRAPER.

No. 354,862.

Patented Dec. 21, 1886.

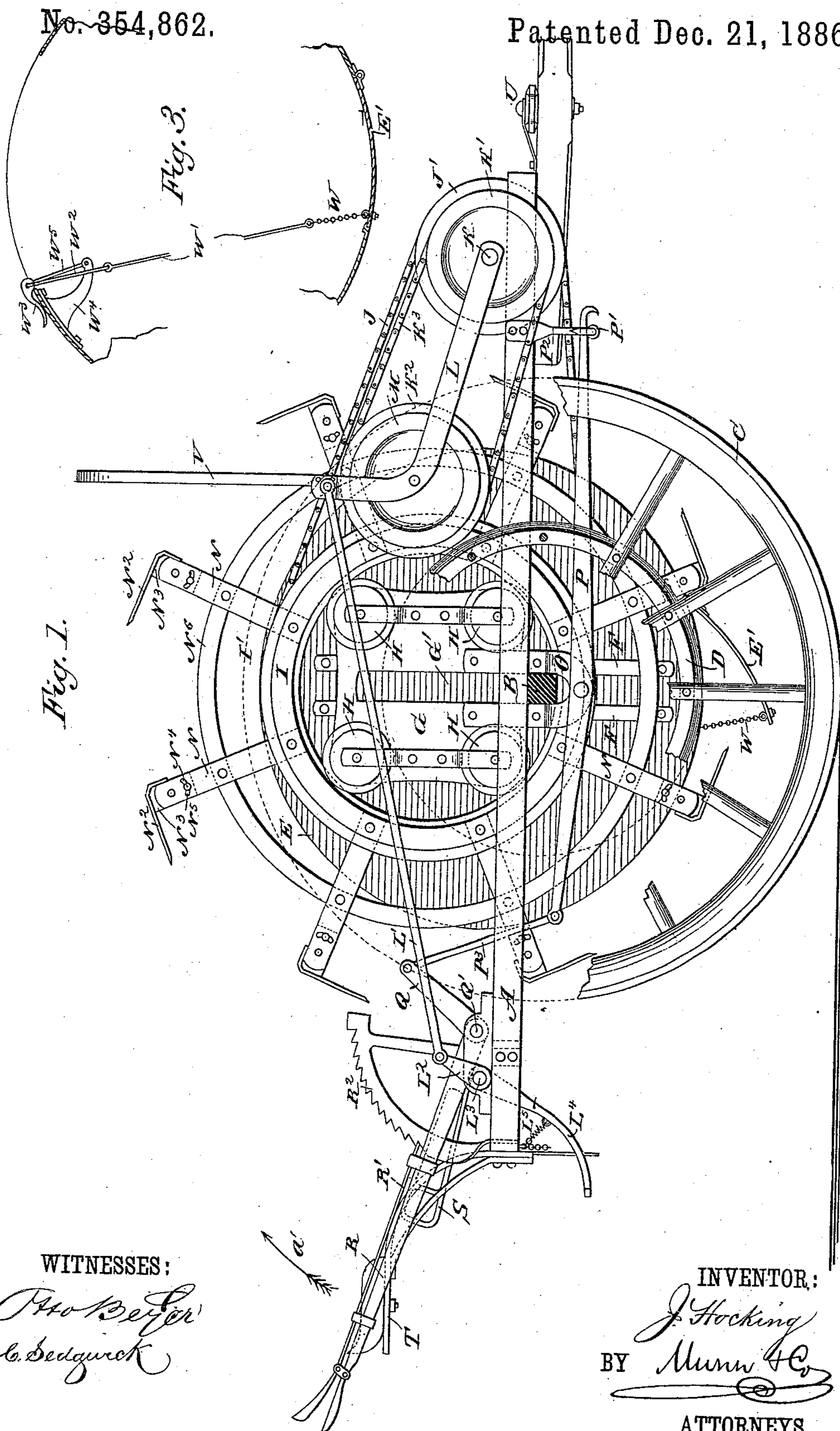


Fig. 1.

Fig. 3.

WITNESSES:

Proctor
C. Sedgwick

INVENTOR:

J. Hocking
BY *Munn & Co.*

ATTORNEYS.

(No Model.)

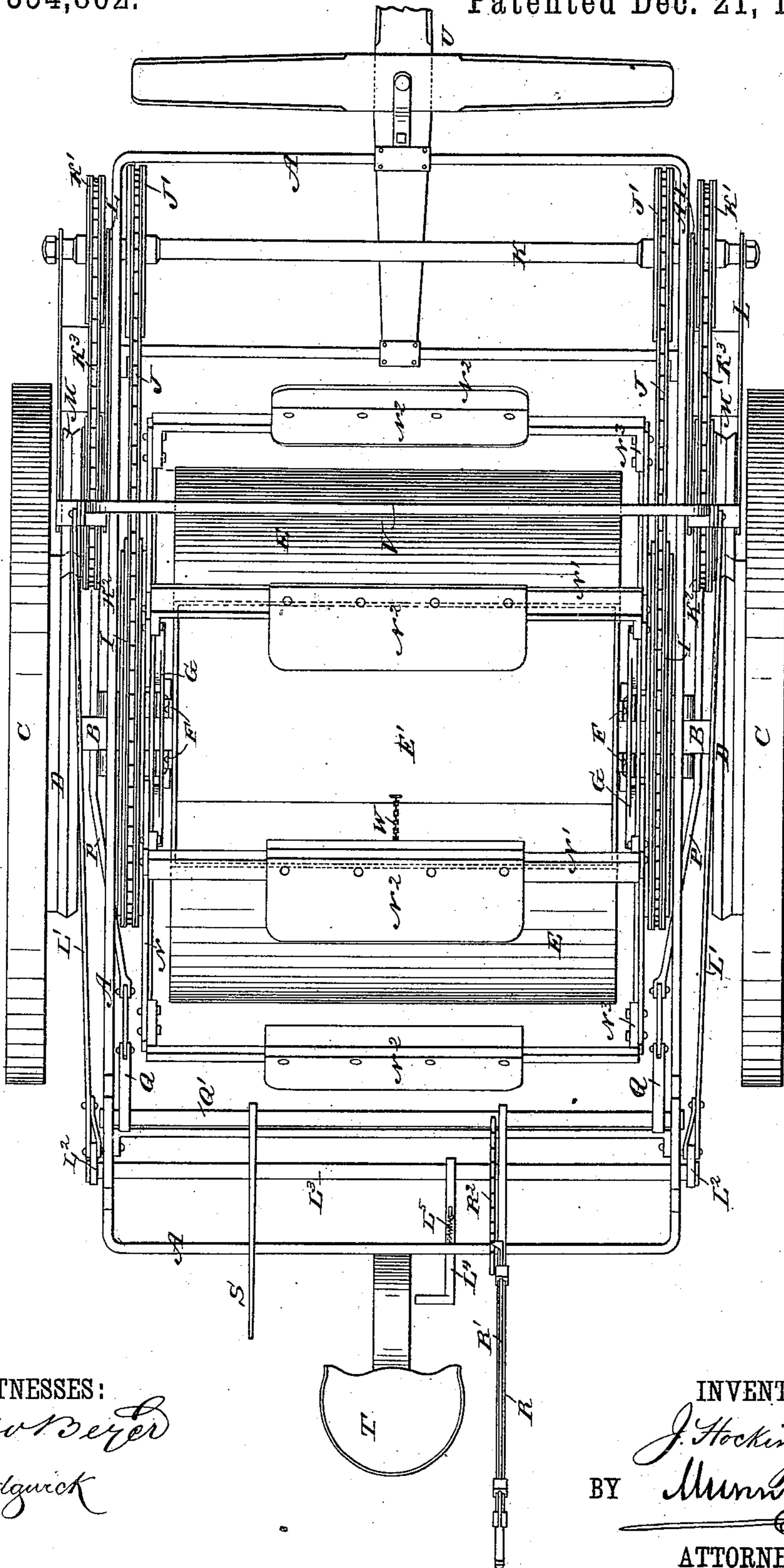
2 Sheets—Sheet 2.

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Fig. 2.



WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

JAMES HOCKING, OF DENTON, NEBRASKA.

SCRAPER.

SPECIFICATION forming part of Letters Patent No. 354,862, dated December 21, 1886.

Application filed April 7, 1886. Serial No. 198,066. (No model.)

To all whom it may concern:

Be it known that I, JAMES HOCKING, of Denton, in the county of Lancaster and State of Nebraska, have invented a new and Improved Scraper, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved scraper in which the rotating shovels can be raised or lowered and the dirt deposited in a drum, which can be opened and closed by the operator.

The invention consists of adjustable shovels mounted on a rotating frame, which can be raised and lowered, of a device for imparting a rotary motion to the rotating frame from the driving-wheel, of a device for raising and lowering the rotating frame, and of a mud-drum, which can be opened and closed.

The invention also consists of various parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

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

Figure 1 is a side elevation of my improvement, parts being broken out. Fig. 2 is a plan view of the same, and Fig. 3 is a detail view of parts, hereinafter more fully described.

To a frame, A, of suitable construction, is attached an axle, B, on which are mounted the driving-wheels C, to the spokes of each of which is secured a grooved friction-wheel, D. On the axle B is mounted a mud-drum, E, which is open at the top and provided at the bottom with a drop-door, E'.

As the devices on both sides of the scraper are the same, it will suffice to describe only one of them. To the end of the mud-drum E are attached the strips F F, on which is mounted to slide vertically the roller-frame G, having an aperture, G', which fits over the axle B. The roller-frame G is provided with pulleys H, which carry a frame, I, provided on its rim with a sprocket-wheel, I', over which passes a chain, J, which also passes over a sprocket-wheel, J', attached to the shaft K, provided with a sprocket-wheel, K', which is connected with the sprocket-wheel K² by the endless chain K³, and the wheel K² is mounted on a frame, L, fulcrumed on the shaft K. A

friction-wheel, M, is attached to the sprocket-wheel K², and is provided on its rim with a groove, which corresponds to the groove in the friction-wheel D. The frame L is connected by a link, L', with the crank-arm L², attached to the shaft L³, mounted in suitable bearings on the rear of the frame A, and provided with the foot-lever L⁴, to which is attached the pull-spring L⁵, which holds the foot-lever L⁴, and consequently the frame L, in place.

The shovel-frame I is provided at each end with radial arms N, to the upper ends of each pair of which is pivoted a cross-bar, N', on which is mounted a shovel, N². The cross-bars N' have end extensions, N³, by which they are pivoted to the arms N, and a bolt, N⁴, passes through a slot, N⁵, in each shovel-arm N, so that the shovels N² can be set at any desired angle. A ring, N⁶, is also attached to the shovel-arms N, so as to strengthen the said arms in their position in relation to each other.

The roller-frame G is provided with the straps or braces O, pivoted to an arm, P, which rests at one outer end on the roller P', mounted in the bracket P², attached to the main frame A. The other end of the arm P is connected by the link P³ with a crank-arm, Q, secured to the shaft Q', which is mounted in suitable bearings on the rear part of the frame A, and is provided with a hand-lever, R, having the pivoted pawl R', engaging the teeth of the rack R², attached to the main frame. On the shaft Q' is fulcrumed a dog, S, which, when thrown forward, is placed in contact with one of the cross-bars N', so as to arrest the rotary movement of the shovel-frame.

The rear part of the main frame A is provided with the usual driver's seat, T, and to the front part of the frame is attached a tongue, U, arranged for two, three, or more horses. A bent arm, V, is attached to the frames L, and extends a considerable distance above the shovels N², so as to prevent the reins resting on the said arm or cross-bar V from coming in contact with the said shovels.

The hinged door E' is connected by a chain, W, and a rod, W', with a strap, W², which connects with an elbow, W³, which elbow is hinged by a link, W⁵, to a bracket, W⁴, secured to the inner surface of the mud-drum E, near the opening at the top. The elbow W³,

when thrown upward, closes the door E' by pulling on the strap W², the rod W', and the chain W.

The operation is as follows: Motion is imparted to the revolving shovel-frame I by pressing on the foot-lever L⁴, which throws the friction-wheel M into contact with the friction-wheel D, attached to the spokes of the driving-wheel C. The rotary motion imparted to the friction-wheel M is transmitted to the sprocket-wheel K², which in turn transmits its motion to the sprocket-wheel K' by the chain K³, and the sprocket-wheel K', being attached to the same shaft as the sprocket-wheel J', causes the latter to transmit the rotary motion to the sprocket-wheel I', attached to the shovel-frame I, so that the shovel-arms N and the shovels N² will be rotated. It will be seen that by pressing on the foot-lever L⁴ more or less friction can be given to the contact-wheels M and D by the crank-arm L², the link L' pulling on the frame L, fulcrumed on the shaft K. The roller-frame G and the shovel-frame I can be lowered by throwing the hand-lever R upward in the direction of the arrow a', so that the crank-arm Q and its connecting-link P³ will lower the arm P, the roller P' acting as a fulcrum and the arm P being connected by the strap O with the roller-frame G. According to the distance that the hand-lever R is thrown in the upward direction, the shovels N² will engage with more or less mud, which will be picked up and held in the shovels N² until the respective shovels reach their uppermost position, and then they will drop the mud into the opening on the top of the drum E. As soon as the operator desires to empty the mud-drum he throws the dog S upward in the direction of the arrow a' until it engages with one of the cross-bars N', so as to arrest the motion of the revolving frame I, and then by throwing the elbow W³ downward he forces the door E' to open, and the mud in the drum is discharged.

The spring L⁵, attached to the foot-lever L⁴, has the tendency to disengage the friction-wheel M from the friction-wheel D, attached to the spokes of the driving-wheel C, as soon as the operator releases his pressure on the lever L⁴.

The shovels N² can be set at any angle by sliding the bolts N⁴ in the slots N⁵ of the shovel-arms N, and fastening the said bolts N⁴ in the desired position.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a scraper, the friction-wheel D, attached to the driving-wheel C, the friction-

wheel M, and the sprocket-wheels K' K², mounted in the frame L, fulcrumed on the shaft K, and the chain K³, in combination with sprocket I' and chain J on the cutting-drum, the frame L, the link L', the crank-arm L², the foot-lever L⁴, and the spring L⁵, substantially as shown and described.

2. In a scraper, the friction-wheel D, attached to the driving-wheel C, the friction-wheel M, and the sprocket-wheel K², both mounted on the frame L, the frame L, fulcrumed on the shaft K, the sprocket-wheel K', the chain K³, and the shaft K, in combination with the sprocket-wheel J', mounted on the shaft K, the chain J, and the sprocket-wheel I', attached to the shovel-frame I, substantially as shown and described.

3. In a scraper, the shovel-frame I, the arms N, the adjustable cross-bars N', and the shovels N², in combination with the roller-frame G, carrying the rollers H, the braces O, the arm P, fulcrumed on the roller P', the link P³, the crank-arm Q, attached to the shaft Q', and the hand-lever R, substantially as shown and described.

4. In a scraper, the frame A, the axle B, and the drum E, open at the top, provided with the hinged door E' at the bottom, and having the guide-strips F, in combination with the adjustable roller-frame G, the shovel-frame I, the arms N, the adjustable cross-bars N', and the shovels N², substantially as shown and described.

5. In a scraper, the combination of the shovel-frame I, and the arms N, having the slots N⁵, with the cross-bars N', having the arms N³, the shovels N², and the bolts N⁴, substantially as shown and described.

6. In a scraper, the adjustable roller-frame G, carrying the rollers H, the shovel-frame I, the sprocket-wheels I' and J', connected by the chain J, and the shaft K, in combination with the sprocket-wheels K' and K², connected with each other by the chain K³, the frame L, the friction-wheel M, the link L', the crank-arm L², the foot-lever L⁴, and the spring L⁵, substantially as shown and described.

7. The combination, with a frame, an axle and supporting-wheels, and a receiving-drum mounted thereon, of a vertically-adjustable roller-frame, a shovel-frame mounted to revolve on the roller-frame, and means for revolving the shovel-frame, substantially as shown and described.

JAMES HOCKING.

Witnesses:

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B. F. BURR.