

(No Model.)

3 Sheets—Sheet 1.

T. J. KELLY.

AUTOMATIC DUMPING GEAR FOR WHEELED SCRAPERS.

No. 529,501.

Patented Nov. 20, 1894.

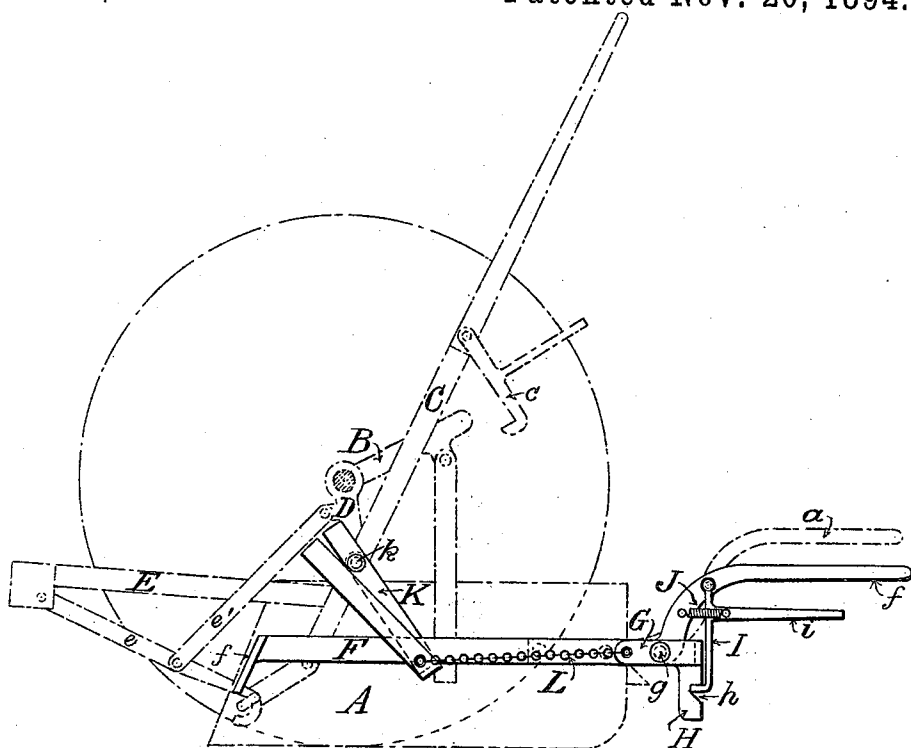
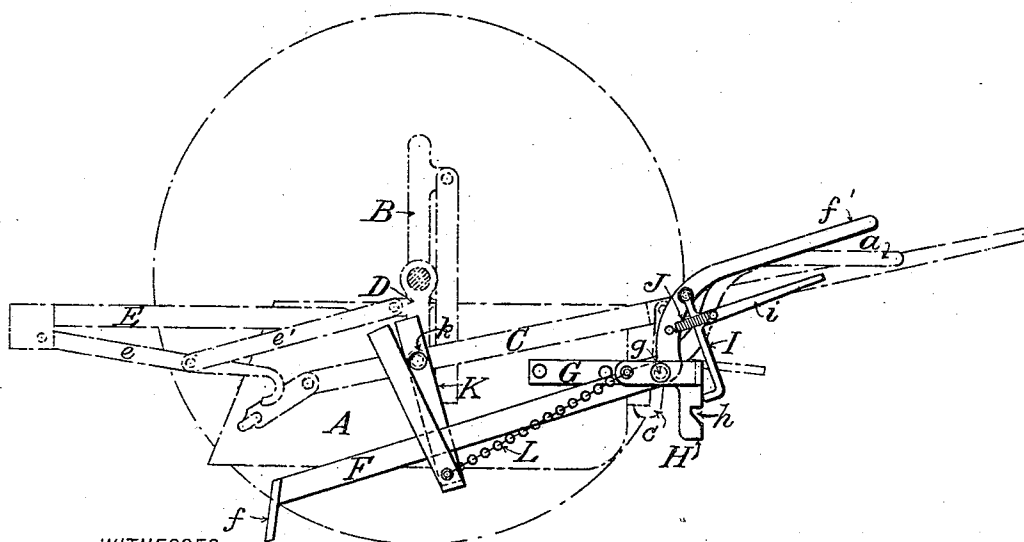


Fig 1.



WITNESSES:

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INVENTOR

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(No Model.)

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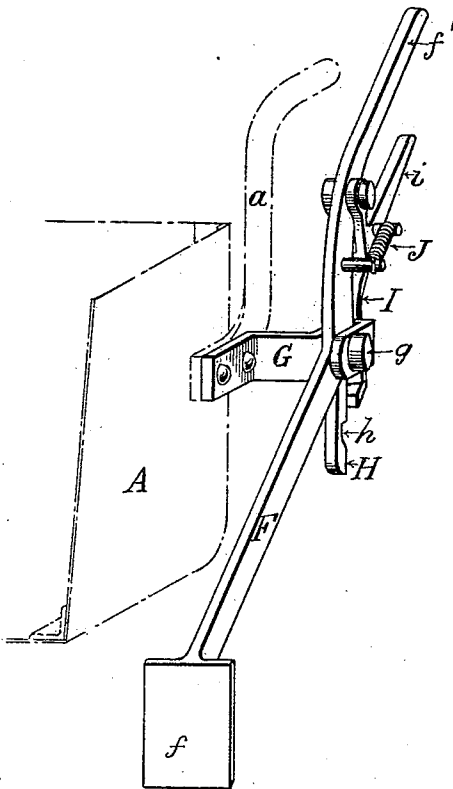


Fig 4.

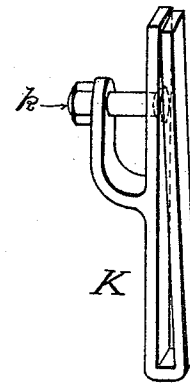
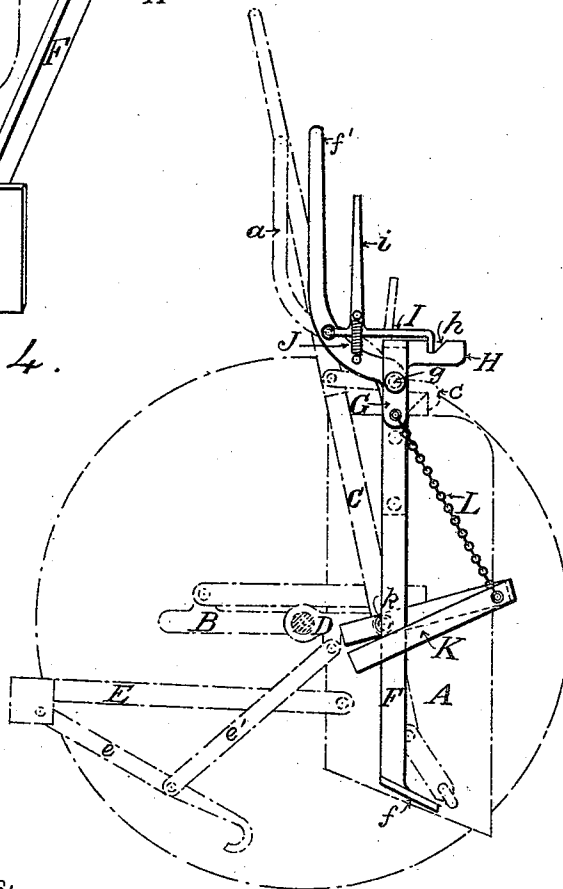


Fig 5.



WITNESSES:

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Fig 3.

INVENTOR

Thomas J. Kelly

(No Model.)

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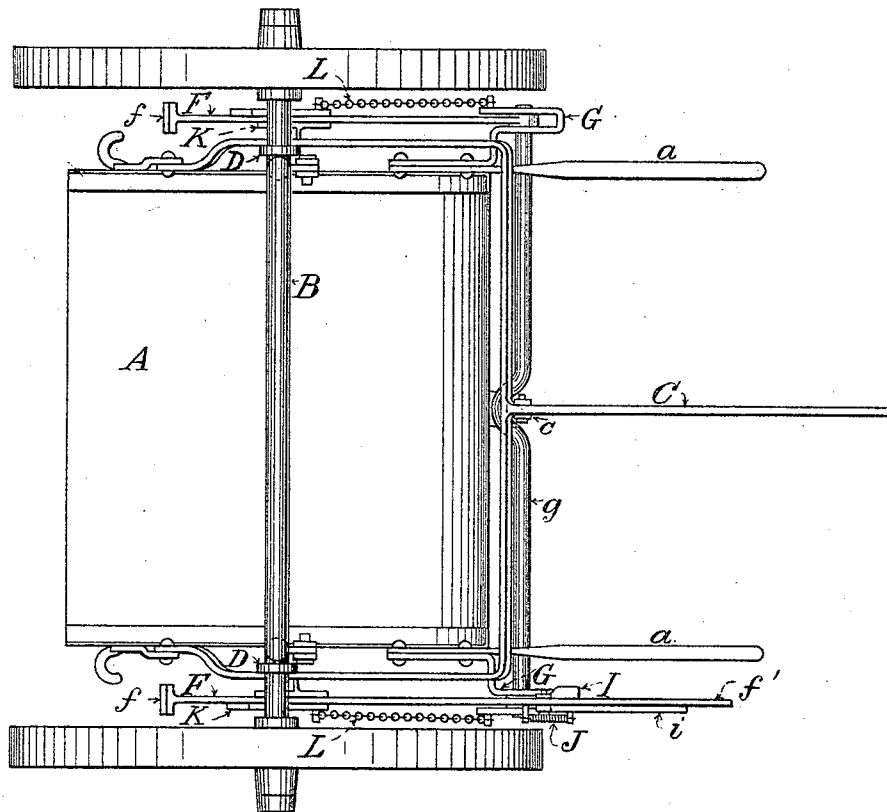


Fig. 6.

WITNESSES:

J. Kelly
Henry C. Brett.

Thomas J. Kelly INVENTOR

UNITED STATES PATENT OFFICE.

THOMAS J. KELLY, OF LOS ANGELES, CALIFORNIA.

AUTOMATIC DUMPING-GEAR FOR WHEELED SCRAPERS.

SPECIFICATION forming part of Letters Patent No. 529,501, dated November 20, 1894.

Application filed August 14, 1894. Serial No. 520,325. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. KELLY, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles, State of California, have invented certain Improvements in Wheeled Scrapers, of which the following is a specification.

The objects of my invention are, first, to construct an automatic, or self, dumping gear for the purpose of unloading wheel scrapers, and to do this in such a manner that the automatic dumping gear may be readily attached to any of the existing forms of wheel scrapers in general use; second, to construct an automatic dumping gear that will unload wheel scrapers without the exercise of manual labor other than that required to operate the releasing mechanism; and third, to construct an automatic dumping gear for wheel scrapers that will apply the resistance caused by unloading the scraper in a gradual manner without sudden shock to the horses or other team propelling the same.

In the accompanying drawings, Figure 1, is a side elevation of a wheel scraper with the automatic dumping gear, in the position for loading the scraper, the wheels being indicated by a circular line. Fig. 2, is another view of the same with the automatic dumping gear released and about to commence the operation of unloading. Fig. 3, is another view of the same in the position assumed as the load is dumped. Fig. 4, is a perspective view of the dumping lever employed in the position shown by Fig. 2, showing the bracket by which it is attached to the pan of the scraper and the releasing mechanism. Fig. 5, is a perspective view of the pivoted guide for the dumping lever. Fig. 6 is a plan view of a wheel scraper with the automatic dumping gear applied to both sides of the scraper pan, the dumping levers F. F. being in the position shown by Fig. 2.

Similar letters refer to similar parts throughout the several views.

In Figs. 1, 2, 3 and 4 those parts that comprise the invention are shown in full lines while the remaining parts of the machine are shown in broken lines for the sake of greater distinctness.

The pan of a wheel scraper A, is attached to a cranked axle B, by the main lever C, and

the suspension link D, in such a manner that the pan may be raised or lowered by means of the lever C. A hook c, on lever C, engages in a suitable lug on back of pan A to retain it in a raised position when the lever C, is pulled down.

E., e., e'. are the system of links by which the tractive power is applied to the scraper. The pan A, is also provided with handles a. a.

The wheels on which the machine travels are attached to the extremities of the cranked axle B.

A dumping lever F, is pivoted to a suitable bracket G, by means of a pin or shaft g, having its forward end f, made broad and flat and inclined at an angle to the lever. The other end of the lever F, terminates in a handle f'. The bracket G, is attached to the rear part of the pan A, in any convenient manner, the pin g, being in as high a position as practicable. The bracket G, has a projecting lug, or quadrant, H, provided with a notch h. A retaining pawl or hook I, is attached to the lever F, in such a way that it may engage in the notch h, and retain the lever in its raised position when not employed for dumping. The pawl I is provided with a handle i, by which it may be withdrawn from notch h, and with a spring J, which serves to keep it engaged in the notch h. This spring may be a coiled one as shown, or of any other form that will effect the same purpose.

K, is a pivoted guide attached by a pin k, with a countersunk head to some convenient point on the pan or levers of the scraper. In this case the pin k, forms the connection between lever C, and link D. The guide K, is placed toward the forward end of lever F, and is provided with two jaws between which the lever works, and its purpose is to steady the dumping lever F, and prevent its deflection sidewise. These jaws are not parallel but inclined to allow the pin R, to be put in position. Attached to the lower part of the guide K, is a chain or other flexible connection L, so connected to some convenient point on the machine that the forward motion of the guide is limited, and by which it is drawn backward, and upward, out of the way of clods or other obstructions when the pan is lowered for the purpose of being loaded. When the guide K, is attached to a movable

portion of the mechanism, as in the present case, the chain L, must be attached to some fixed point, and when the guide is attached to a fixed point on the machine the chain must be attached to some movable point in order to produce the desired result.

The operation of the invention is as follows:—Assuming that the machine is in the position Fig. 1, or loading position, the dumping lever F, is raised in its normal position, being retained thus by the pawl I, resting in notch h. The link K, is drawn upward and backward as far as possible under the action of the chain L. The pan having been filled in the usual way the lever C, is drawn down until the hook c, engages in its lug, the pan being thereby raised and the guide K, lowered to the position shown in Fig. 2, the lever F, however retaining the position in Fig. 1. Arriving at the place for unloading the driver raises the handle i, of the pawl I, sufficiently to release the same from its notch, h, when the forward end of the dumping lever F, falls to the ground the point f penetrates the earth until sufficient resistance is encountered to raise the back of the pan A, causing the whole machine to rotate on its wheels as on bearings. When a sufficient inclination of the pan has been reached the earth, or other material with which it is loaded, commences to slide forward, and forming an obstruction to the progress of the pan continues the rotary action until the pan has attained a position approximating the vertical. Meanwhile the dumping lever F, having accomplished its work is gradually withdrawn from contact with the ground and when the machine is in the position shown in Fig. 3, the lever F, is free to swing back or may be assisted back until the pawl I, again engages in its notch when the machine may be returned to the ordinary carrying position. By means of this automatic dumping gear the driver of the team is relieved from the laborious work of dumping the scraper by hand and the services of an extra man on the dump to assist the driver, usually required in grading operations, is dispensed with; also, from the time the driver releases the dumping lever until the time he desires to return the empty scraper to a horizontal position—that is, throughout the critical operation of dumping, the driver is entirely free to devote his whole attention to the control of his horses, by which accidents may often be averted. Further it is evident that the strain of inverting the scraper is gradually applied—the point of the lever penetrating the ground until the required resistance is attained, when the actual tipping of the scraper is accomplished by the continued progress of the team, thus saving the team from the shock caused by the sudden upturning of the pan as when done by manual labor. This dumping gear may be applied to either or both sides of the scraper. Usually if applied to one side, and that preferably the left or driver's side of the scraper

as shown, it will be sufficient to perform all that I claim for it; but I can if I prefer apply it to both sides by using two dumping levers and by prolonging the shaft g from one side to the other and keying or otherwise attaching the levers to the same thus securing the simultaneous action of the two levers. The handle f' with the retaining pawl I may be omitted in the case of the second dumping lever. This arrangement is shown in Fig. 6. As this gear is intended to be applicable to various existing forms of wheel scrapers it is evident that the methods of attaching the bracket G, and guide K, to the machine will have to be modified to suit the different forms of construction in use, and I therefore do not claim the particular methods of attachment shown as essential parts of my invention.

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The combination in an automatic dumping gear for wheel scrapers of a dumping lever having a broad flat end set at an angle for penetrating the ground and opposing resistance to it and its other end terminating with a handle, with a suitable bracket to which the said lever is pivoted attached to the scraper pan, at or near its rear portion, for the purpose of partially inverting the pan and discharging the load, substantially as specified.

2. The combination in an automatic dumping gear for wheel scrapers of a dumping lever pivoted to a suitable bracket attached to the scraper pan at or near its rear portion with a retaining hook or pawl engaging in a notch in a lug or quadrant attached to the said bracket by which the lever is held in place or released as desired, substantially as specified.

3. The combination in an automatic dumping gear for wheel scrapers of a dumping lever pivoted to a suitable bracket attached to the scraper pan at or near its rear portion with a retaining hook or pawl engaging in a notch in a lug or quadrant having a spring for keeping the hook so engaged and means for releasing the same, substantially as specified.

4. The combination in an automatic dumping gear for wheel scrapers of a dumping lever pivoted to a suitable bracket attached to the scraper pan at or near its rear portion with a pivoted guide having two jaws between which the lever works for the purpose of steadying the same and preventing its deflection sideways, substantially as specified.

5. The combination in an automatic dumping gear for wheel scrapers of a dumping lever pivoted to a suitable bracket attached to the scraper pan with a guide having jaws between which the lever works pivoted to some convenient fixed or movable point on the scraper pan, or its levers, and having a chain or other flexible connection from its lower end to some convenient movable or fixed point on the machine, whereby its forward motion is limited, and it may be drawn backward and upward out of the way of obstruc-

tions by the motion of lowering the pan for loading, substantially as specified.

6. The combination in an automatic dumping gear for wheel scrapers of a dumping lever on each side of the pan pivoted to suitable brackets attached to the scraper pan at or near its rear portion with a shaft connecting the two levers to which they are firmly attached and by which simultaneous action of the levers is secured, substantially as specified.

7. The combination in a wheel scraper of an automatic dumping gear with a dumping

lever or levers, pivoted to suitable brackets attached to the pan of the scraper having a retaining hook or pawl with releasing mechanism and working in a pivoted guide or guides all so arranged as to apply the strain of inverting the scraper in a gradual manner, and to automatically withdraw the levers from the ground as the dumping is accomplished, substantially as specified.

THOMAS J. KELLY.

Witnesses:

F. M. FRENCH,
HENRY E. BRETT.