

960,590.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

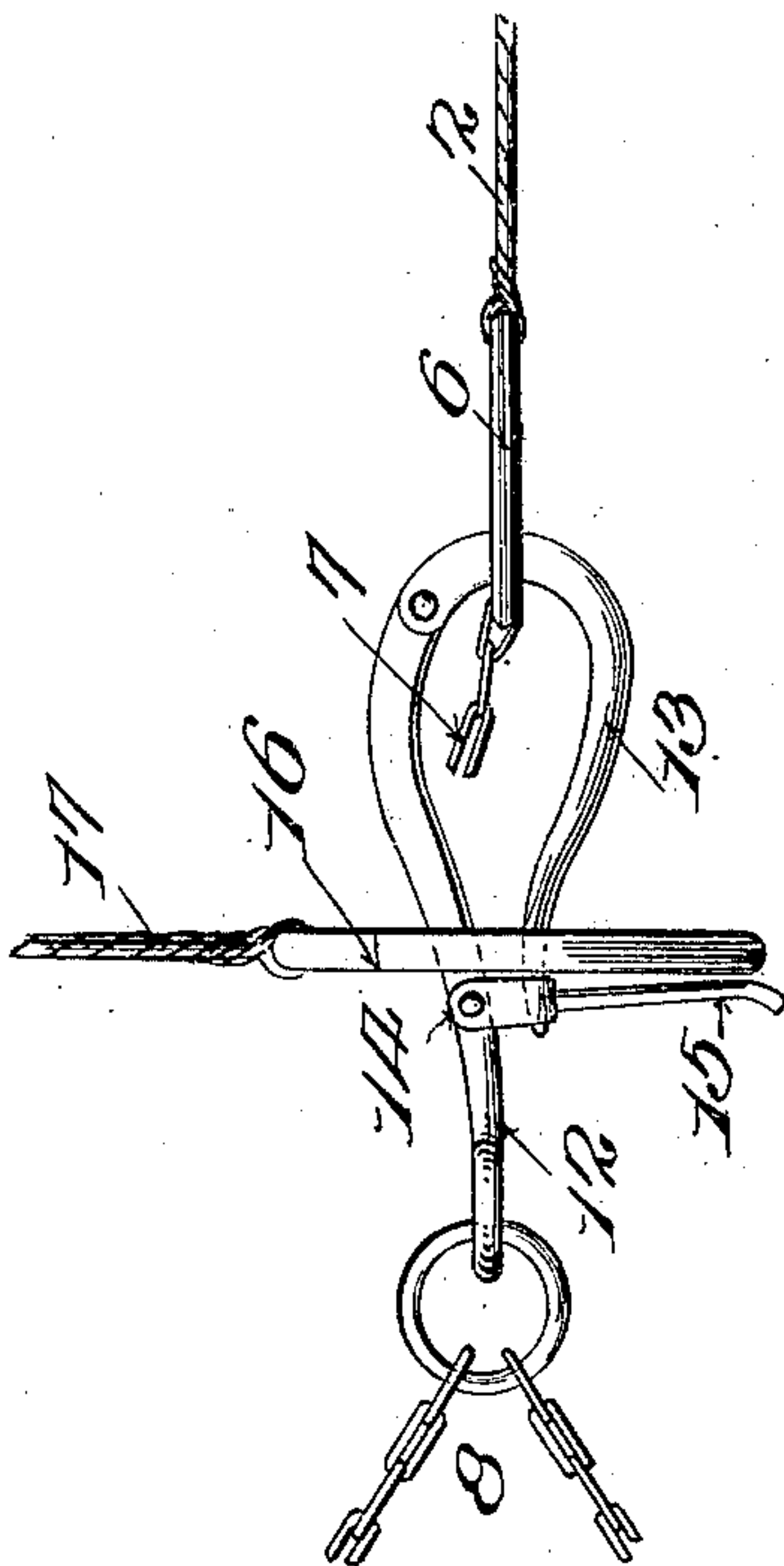


Fig. 3.

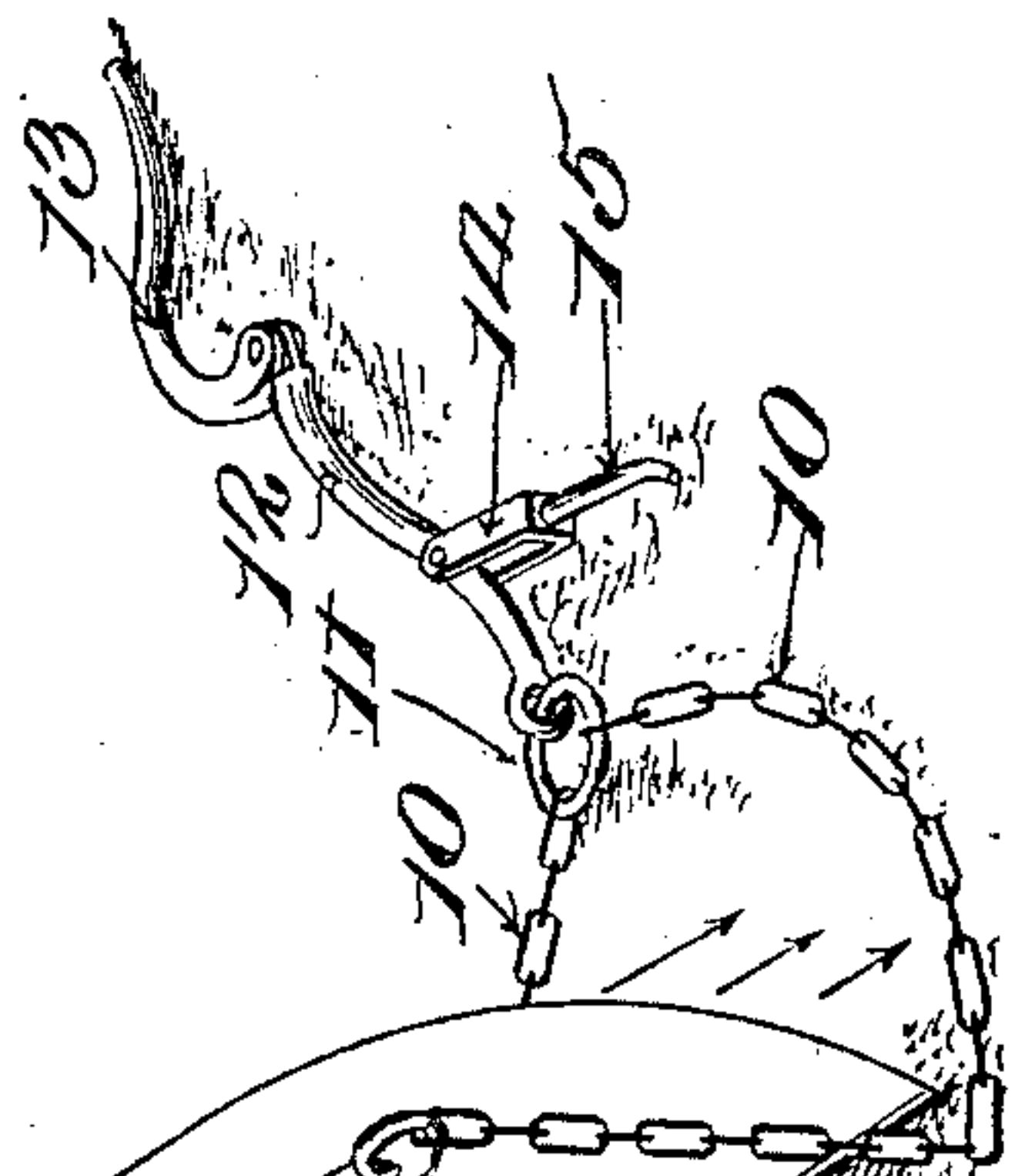


Fig. 2.

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UNITED STATES PATENT OFFICE.

ADOLF SKOPINSKI, OF JACK WADE, DISTRICT OF ALASKA.

MEANS FOR AUTOMATICALLY DUMPING EXCAVATING-SCRAPERS.

960,590.

Specification of Letters Patent.

Patented June 7, 1910.

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To all whom it may concern:

Be it known that I, ADOLF SKOPINSKI, citizen of the United States, residing at Jack Wade, District of Alaska, have invented certain new and useful Improvements in Means for Automatically Dumping Excavating-Scrapers, of which the following is a specification.

My invention relates to excavating devices, and particularly to means for automatically dumping scrapers at any desired point, the scrapers being operated from a distant point by means of a power cable. The mechanism devised by me for this purpose includes a power cable having a normally slack connection to the rear end of a scraper, and also having a detachable and normally taut connection to the forward end of the scraper, this connection being adapted to be detached or tripped so as to disengage the power cable from the forward end of the scraper so that the normally slack connection to the rear end of the scraper may become taut and the scraper tipped to dump its contents, said detachable or tripping engagement between the power cable and the front end of the scraper being made by a tripping shackle of a peculiar formation, in combination with means associated with the power cable permitting the power cable to pass so that the load may be drawn to the position desired for dumping it, but automatically engaging and tripping the shackle when the scraper has reached its proper dumping position.

For a full understanding of the invention and the merits thereof, and to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of my invention, showing the several devices in position before the forward end of the scraper is disconnected from the power cable; Fig. 2 is a perspective view showing the forward end of the scraper disconnected from the power cable and the scraper tipped into dumping position; and, Fig. 3 is an enlarged detail fragmentary view of the shackle and its connections.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to these figures, 2 designates a power cable which extends to any suitable winding mechanism, not shown. As shown, the power cable passes over a pulley 3 on a post or support 4, which latter is anchored at 5. The power cable has at its end a flattened or elliptical link 6, and from this link extends a chain or other flexible connection 7 to dumping chains 8 which extend from the end of the chain 7 to opposite portions of the rear of the scraper A. A haul-back cable 9 is attached to the rear of the scraper so that it may be returned to the point from which it is desired to excavate the earth. Attached on each side of the scraper at the forward end thereof, are the opposed draft chains or flexible connections 10 which are both connected to a ring or other common connection 11 which in turn has engagement with an eye in the end of the shackle bar 12. The forward end of this shackle bar 12 is provided with a pivoted hook 13 adapted to be turned into a position of alinement with the shackle bar or into a parallel position with the shackle bar. Pivoted on the bar 12 is a clip 14 which engages over the extremity of the hook member 13 and is provided with the outstanding finger or projection 15. The hooked end of the shackle is adapted to be engaged with the elliptical link 6, as shown in the figures, when the scraper is being hauled to the point of deposit. The flexible connection 7 is of such length that when the haul chains 10 are engaged with the elliptical link through the shackle, the flexible connection will be slack, and thus the power of the cable 2 will be applied to the forward end of the loaded scraper to drag it over the ground. It will be obvious, however, that when the shackle is disconnected from the elliptical link 6, the connection 7 will become taut and power will be applied to the rear end of the scraper, thus acting to tip it, as shown in Fig. 2.

The means for tripping the shackle so as to disengage it from the power cable is as follows: The power cable passes through a trip 16 which has the form of a ring, this ring being sufficiently large to permit the passage of the power cable and the flattened link 6, but engaging with the finger 15 to trip the clip 14, or in other words, turn it rearward and release the hook 13 so that the hook turns into a lengthwise position, releasing itself from position with the coup-

ling 6. The ring 16 is attached to a trip cable 17 which passes to any suitable anchorage 18.

The operation of my invention will be obvious from what has gone before. After the scraper is loaded at the point of loading, the power cable is operated to draw the scraper forward over the ground, the strain of the power cable coming upon the chains 10 and the forward end of the scraper, the connection 7 being slack so that no power is exerted upon the rear end of the scraper. The anchorage 18 with its cable 17 and ring 16 has been arranged at the point where it is desired to dump the scraper or load. When the shackle bar 12 reaches the ring 16, the forward end of the shackle will enter the ring, but the ring will engage with the finger 15, releasing the hook 13. The power cable will thus pull free from the hook 13, and the draft cables 10 will be released from their engagement with the power cable. The connection 7 will now tighten, and the strain will be exerted upon the rear end of the scraper to tip over and dump the load.

It will be seen that the scrapers are dumped automatically at any desired position, and that the place of dumping may be easily changed, as desired, by shifting the anchorage 18 with the cable 17 and ring 16.

My invention is extremely simple and thoroughly effective in practice. It dispenses with the attendance usually necessary to either manually tip the scraper or trip the connection between the draft chains of the scraper and the power cable.

Having thus described the invention, what I claim is:—

1. The combination with an excavating scraper, of a power cable, a normally slack connection from the rear end of the scraper to the power cable, a draft connection attached to the forward end of the scraper, a connecting member detachably engaging the end of the draft connection with the power cable, and a tripping device in the path of movement of the power cable adapted to engage the connecting member between the power cable and the draft connection to disengage the latter from the former.

2. The combination with an excavating scraper, of a power cable, a normally slack connection from the rear end of the scraper to the power cable, a draft connection attached to the forward end of the scraper, a shackle attached to the end of the draft connection and adapted to detachably engage the power cable, and a tripping member in the path of movement of the power cable and adapted to engage the shackle and detach it from its engagement with the power cable.

3. The combination with an excavating scraper, of a power cable, a normally slack connection from the rear end of the scraper

to the power cable, a draft connection attached to the forward end of the scraper, a shackle on the end of the draft connection, said shackle having a pivoted hook thereon detachably engaging with the power cable, means on the shackle engaging with the hook to hold it closed, and a tripping member in the path of movement of the power cable adapted to engage the shackle to release the hook and disengage the power cable from the draft connections.

4. The combination with an excavating scraper, of a power cable, a normally slack connection from the rear end of the scraper to the power cable, a draft connection attached to the forward end of the scraper, a shackle on the end of the draft connection, said shackle having a pivoted hook adapted to engage with the power cable, a clip on the shackle engaging with the hook to hold it in a closed position, a tripping cable anchored at one end, and a ring on the tripping cable through which the power cable passes, adapted to engage with the clip on the shackle to release the hook and disengage the power cable from the draft connections.

5. The combination with an excavating scraper, of a power cable, a normally slack connection from the rear end of the scraper to the power cable, draft chains attached to the forward end of the scraper, a shackle to which the draft chains are connected, said shackle having at one end a pivoted hook, a pivoted clip on the shackle adapted to be turned over the end of the hook to hold it closed, said clip having a projecting finger thereon, a tripping cable anchored at one end, and a tripping ring on the end of said cable through which passes the power cable, said tripping ring being adapted to engage the finger on the shackle to release the hook thereof and permit the disengagement of the clip from the power cable.

6. The combination with an excavating scraper, of a power cable, a link in the power cable, a normally slack connection from said link to the rear end of the scraper, a draft connection attached to the forward end of the scraper, a shackle on the end of the draft connection having a pivoted hook at one end adapted to engage with the link on the power cable, a clip on the shackle engaging with the end of the hook to hold it closed, said clip having a projecting finger, a tripping cable, and a tripping ring on said cable through which the power cable passes, said ring being adapted to engage with the projection on the shackle clip to release the hook and permit the disengagement of the shackle from the power cable.

7. The combination with an excavating scraper, of a power cable, a normally slack connection from the rear end of the scraper to the power cable, a draft connection at-

5 tached to the forward end of the scraper, a shackle attached to the end of the draft connection and having a pivoted hook on one end thereof adapted to engage, when closed, with the power cable, a tripping cable anchored at one end, a tripping ring on the cable through which the power cable passes, and a latch holding the hook of the shackle closed and in engagement with the power

cable and adapted to be tripped by engagement with said tripping ring to release the hook. 10

In testimony whereof I affix my signature in presence of two witnesses.

ADOLF SKOPINSKI. [L. s.]

Witnesses:

CHAS. E. M. COLE,
WALTER HUNT.