Feb. 10, 1942. V. C. SMITH 2,272,648

PORTABLE LOADING SCOOP

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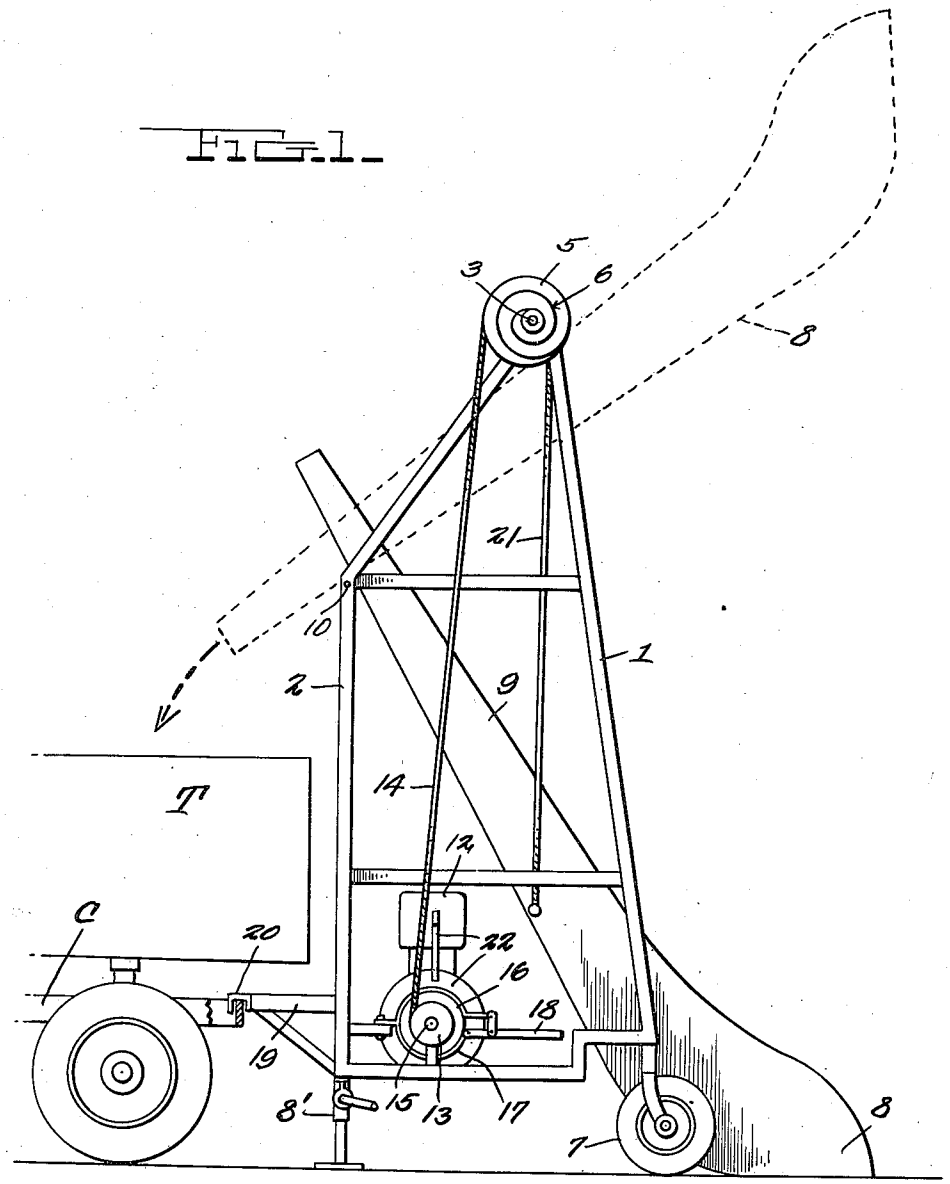
Fig. 1.



V. C. Smith

INVENTOR.

BY C. A. Brown & Co.

ATTORNEYS.

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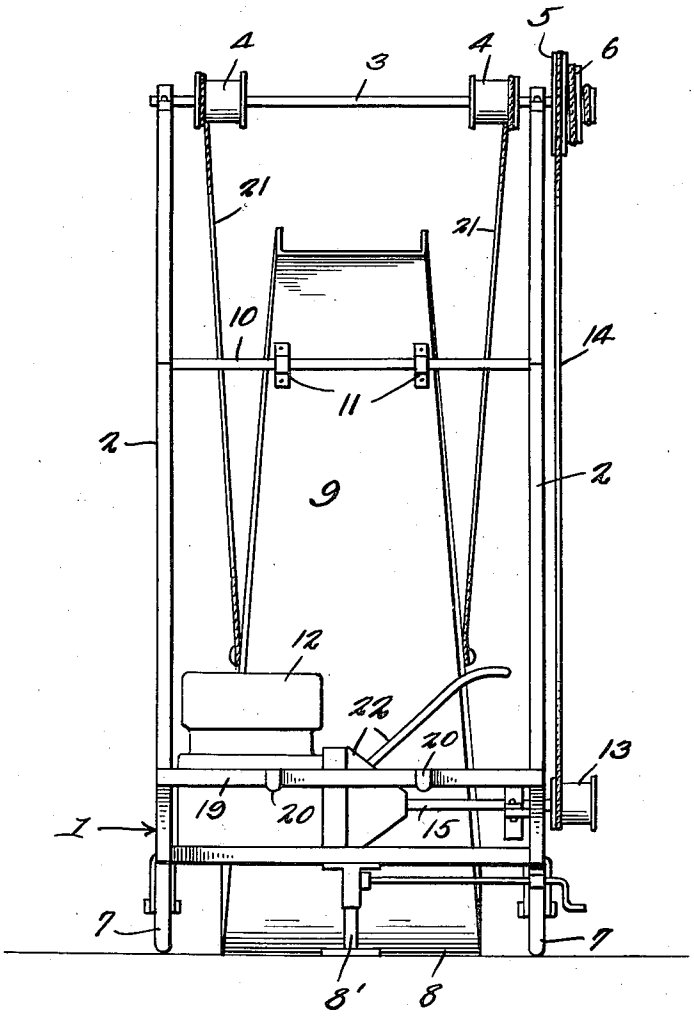
FIG. 2



V. C. Smith

INVENTOR.

BY C. A. Snow & Co.

ATTORNEYS.

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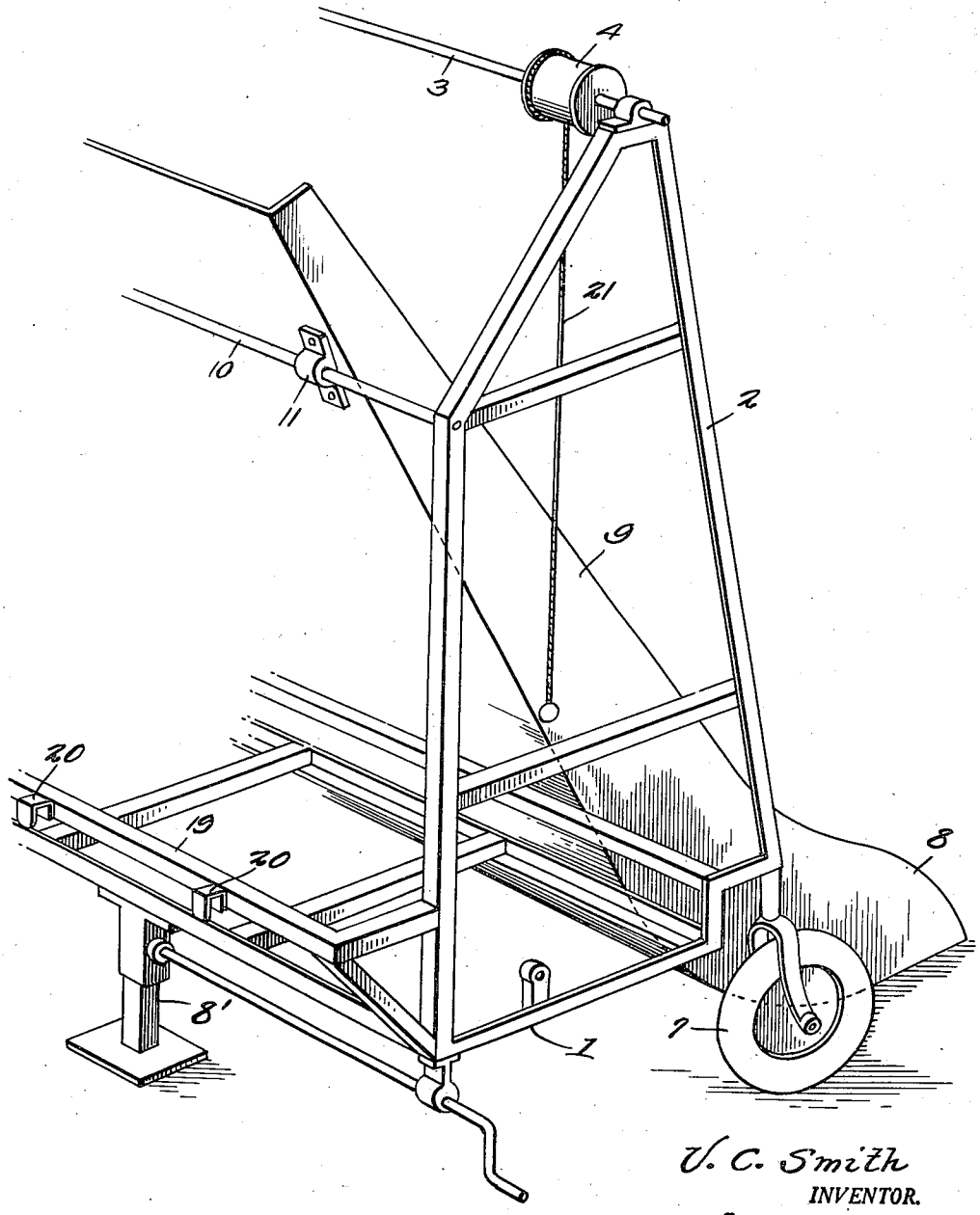
FIG. 3



V. C. Smith
INVENTOR.

BY Albert Lee.

ATTORNEYS.

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2,272,648

UNITED STATES PATENT OFFICE

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PORTABLE LOADING SCOOP

Vernon Clay Smith, Castroville, Tex.

Application February 17, 1941, Serial No. 379,341

1 Claim. (Cl. 214—130)

This invention relates to a portable loading scoop designed primarily for use in loading trucks with loose bulk material.

One of the objects of the invention is to provide a loader which is in the form of a complete unit including supporting wheels whereby when the unit is coupled to the back of a truck, it can be moved into loading position.

A further object is to provide a loading scoop which can be readily coupled to or uncoupled from a truck so that trucks can be brought successively into position to be loaded by the unit.

Another object is to provide a loading unit including a dump-skip adapted to be forced into a pile of bulk material and thereafter hoisted in the unit and moved into position to dump its contents into the truck to which the unit is connected.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claim, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:

Figure 1 is a side elevation of the loading unit, the position of the skip when in dumping position being indicated by broken lines and a portion of the truck to which the unit is connected being shown partly in elevation and partly in section.

Figure 2 is an elevation of that side of the unit nearest the truck.

Figure 3 is a perspective view of one side portion of the unit.

Referring to the figures by characters of reference, 1 designates a skeleton frame including upstanding sides 2 on the upper portion of which is mounted a transverse shaft 3 to which are secured drums 4 and an operating drum 5 having a spiral cable-engaging surface 6.

Connected to the sides of the frame at one end are supporting wheels 7 in the form of casters while depending from the opposite end of the frame, preferably at the center thereof, is a jack 8' of any preferred construction which, when extended, constitutes a leg for supporting that end of the frame to which it is joined.

A skip is movably supported in the frame 1 and is enlarged at one end to provide a scoop 8. From this scoop there is extended a chute 9 open at its ends and this chute is pivotally mounted in the frame adjacent to its small or outlet end, as indicated at 10 where a shaft is extended transversely within the frame and is engaged by bearings 11 carried by the chute.

A motor 12 is located in the bottom portion of the frame 1 and has a pulley 13 to which is secured one end of a hoisting cable 14 the other end portion of which is wrapped spirally about the drum 5 so as to rest on the spiral surface of the drum. The shaft 15 to which the pulley 13 is secured is provided with a brake drum 16 and this brake drum, in turn, is adapted to be gripped and restrained by a brake band 17 under the control of a lever 18.

Extending from the frame 1 is an extension 19 having laterally spaced hooks 20 so located that when the frame is in an upstanding position, these hooks can engage and straddle the rear end of the chassis C of a truck T, as shown particularly in Figure 1.

Normally the loading unit stands alone upon the wheels 7 and the jack 8' with the scoop 8 of the skip resting on the ground. At this time the jack 8' holds the hooks 20 above the level of that part of the truck to be engaged thereby.

When it is desired to load a truck, said truck is backed toward the loading unit until the parts to be engaged thereby is brought directly under the hooks 20. The jack 8' is then lifted out of contact with the ground with the result that the extension 19 will settle onto the engaged part of the truck, thereby coupling the unit to the truck. With the jack out of contact with the ground, the truck can then be backed toward the pile of bulk material to be loaded thereon and this will cause the lowered scoop 8 to be forced into the pile of material. When the scoop is filled the shaft 15 and its pulley 13 are operated by any desired transmission mechanism forming a part of the motor so that the cable 14 will be wound on the pulley or drum 13 and unwound from the spiral surface of the drum 5. Lifting cables 21 which are secured to the respective drums 4 and to the sides of the skip are thus wound on the drums 4, thereby causing the skip to swing upwardly about the pivot 10 until the scoop 8 is brought to position with the chute portion inclined downwardly above and over the truck body. Thus the contents of the scoop will gravitate along the chute and into the truck body. Thereafter the drum of pulley 13 is uncoupled from the motor and the scoop permitted to gravitate back to its

normal position, this movement being controlled by operation of the brake lever 18.

By providing a drum 5 with a spiral cable-engaging face, the lifting action will reduce in speed as the scoop approaches the upper limit of its movement and the operation of the skip can thus be readily controlled.

In the drawings the usual transmission and clutch mechanism for coupling shaft 15 to or uncoupling it from the motor has been indicated generally at 22.

It is to be understood that by means of the apparatus herein described a truck body can be quickly loaded simply by moving the loading unit back and forth toward and from the pile of bulk material and raising the skip to discharging position after each operation of filling the scoop. After the truck has been filled or loaded, the jack 8' is extended to lift the hooks 20 out of engagement with the truck whereupon the truck can be moved away and another one brought into position and coupled to the loading apparatus.

What is claimed is:

A loading apparatus including a structure having supporting wheels at one end and a collapsible support at its other end, a chute normally extended upwardly within and pivotally connected adjacent to its upper end to the structure, a scoop at the lower end of the chute and opening thereinto, said scoop being normally positioned on the structure-supporting surface, in position for engagement with a pile of bulk material, a vehicle, means detachably connecting the rear end of the vehicle to the collapsibly supported end of said structure, said vehicle, when backed, constituting means for transmitting thrust through the structure to the scoop, thereby to force the scoop into the pile of bulk material, and a power unit carried by the structure for swinging the chute about its pivotal connection into position to deliver material downwardly into the vehicle and to elevate the scoop with a load therein.

VERNON CLAY SMITH.