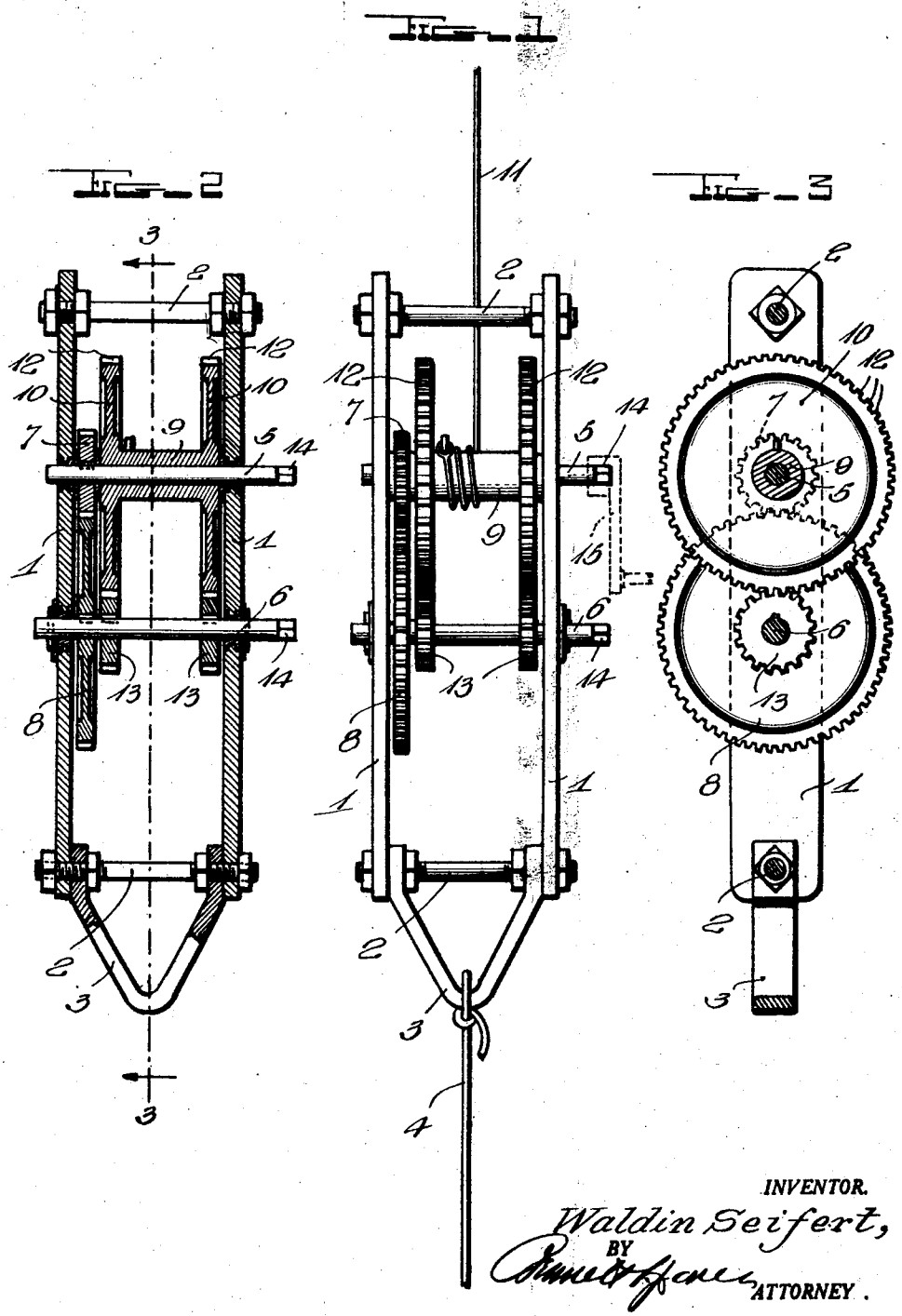
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W. SEIFERT

HOIST OR PULLING DEVICE

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INVENTOR.

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WALDIN SEIFERT, OF KEWANEE, ILLINOIS.

HOIST OR PULLING DEVICE.

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To all whom it may concern:

Be it known that I, WALDIN SEIFERT, a citizen of the United States, residing at Kewanee, in the county of Henry and State of Illinois, have invented new and useful Improvements in Hoists or Pulling Devices, of which the following is a specification.

This invention relates to a novel and improved construction of hoist or pulling device of that type employing a main shaft, to which power is applied, a counter-shaft in gear with the main shaft, and a drum or reel revoluble on the main shaft and in gear with the counter-shaft, the object of my invention being to provide a compact type of device of this character, in which the drum may be driven at low or high speeds by power applied to either of the said shafts at will, and which embodies a construction in which both sides of the drum are in gear with the counter-shaft, thereby eliminating all side strains and twisting stresses on the drum and avoiding liability of sudden shocks snapping off gear teeth and permitting the load to fall.

A further object of the invention is to provide a device of the character described which is adapted for either portable or stationary use and for general purposes wherever the use of a simple, compact and powerful type of hoist or pulling device is desired.

The invention consists of the features of construction, combination and arrangement of parts, hereinafter fully described and claimed, reference being had to the accompanying drawing, in which:—

Figure 1 is a top plan view of a hoist or pulling device embodying my invention.

Figure 2 is a horizontal transverse section through the same.

Figure 3 is a vertical longitudinal section on the line 3—3 of Figure 1.

In carrying my invention into practice I provide a hoist or pulling device comprising a suitable frame shown in the present instance as made up of a pair of parallel side plates or frame pieces 1 connected at the opposite ends thereof by cross bolts 2; to one of which bolts may be applied a clevis or attachment 3 to which may be secured a rope or cable 4, for connecting the hoist or pulling device to any suitable support or anchor for holding the frame thereof in proper position during a hoisting or pulling action.

Journaled in the frame pieces 1 are main and counter-shafts 5 and 6 respectively, and to the shaft 5 is keyed a spur pinion 7 meshing with a spur gear wheel 8 keyed to the shaft 6, whereby, when power is applied to revolve the shaft 5, the shaft 6 will be revolved therewith.

Mounted on the shaft 5 is a winding drum or reel comprising a hub 9 loose on said shaft and a pair of side disks 10 fixed to the hub to revolve therewith, to the said hub of which drum one end of a draft rope or cable 11 may be secured, to adapt the rope or cable to wind thereon or to be unwound therefrom. In accordance with my invention, the side disks 10 are both made in the form of gear elements, having spur gear teeth 12 on their peripheries for meshing engagement with pinions 13 fixed to the counter-shaft 6, whereby equal power and motion will be transmitted to both sides of the drum from the counter-shaft in the operation of the device.

In practice, power may be applied to either shaft 5 or 6 for the purpose of driving the drum at low or high speed. In the construction shown one end of each shaft is extended and provided with an angular portion 14 for the reception of a crank handle 15 whereby either of said shafts may be driven, but, in the various uses of the device, power means of any suitable sort may be applied for driving either shaft and, in the use of power means for the purpose, a brake device of any suitable sort may be employed on either or both shafts for governing the same in winding and unwinding actions and holding the drum fixed in any predetermined position. I have not deemed it necessary to illustrate the use of power applying or braking means, as such are well known and are not necessary to a proper disclosure of the invention.

It will be observed that by the structure described the drum may be driven at low speed and with high power by the application of power to the main shaft 5, whereby through the gearing disclosed the counter-shaft 6 will be driven and in turn will impart driving motion to the winding drum. Also it will be evident that the drum may be driven at high speed and lower power, for comparatively light hauling or pulling actions, by power transmitted to the counter-shaft whereby direct motion will be transmitted through the pinions thereon to the gear elements of the drum for driving the

latter. Provision is thus made for the use of the device for hoisting or pulling comparatively heavy loads at low speed; or for hoisting or pulling lighter loads at a relatively higher speed, without in any manner changing the structural features of the device, the advantages of which will be manifest.

The invention provides a hoist or pulling device which may be of any desired size and power for portable or stationary use and capable of being power driven or hand driven for various purposes. It may be used for various purposes and in different ways for general industrial purposes, for the use of farmers and others in hoisting or pulling operations, loading and unloading operations, as an automobile extractor, as a portable crane or crane element on tractors or automobile wrecking cars, and for various other uses where the employment of a compact and powerful type of hoist of any size will be found of advantage. It will, of course, be understood that any ratio of gearing may be employed according to the size and capacity of the device and the work for which it is designed to be performed. An important feature of my invention resides in the fact that the drum is in gear at both sides with the counter-shaft, thereby eliminating all side strains and twisting strains on the drum, making the power evenly applied and reducing friction and making the device easier of operation. A further advantage is that by having the drum in gear at both sides with the counter-shaft the liability of snapping off of gear teeth from sudden shocks, and permitting the load to fall, is avoided or reduced to the minimum.

Having thus fully described my invention, I claim:

1. A hoist or pulling device comprising a frame, parallel main and counter-shafts journaled in said frame, means whereby power may be applied to either of said shafts, a spur pinion on the main shaft, a spur gear on the counter-shaft meshing with said pinion, a pair of spur pinions on the counter-shaft, and a drum loosely mounted on the main shaft and including side disks in the form of gears having spur teeth meshing with the pinions on the counter-shaft.

2. A hoist or pulling device comprising a frame, parallel main and counter-shafts journaled in the frame, each of said shafts having an extended end adapted for the application of power thereto, whereby power may be applied to either shaft, a spur pinion on the main shaft, a spur gear on the counter-shaft meshing with said pinion, a pair of spur pinions on the counter-shaft, and a drum comprising a hub loosely mounted on the main shaft and side disks carried by the drum, each of said disks having its peripheral portion provided with spur teeth, the spur teeth of the respective disks meshing with the respective pinions on the counter-shaft.

In testimony whereof I affix my signature.

WALDIN SEIFERT.