

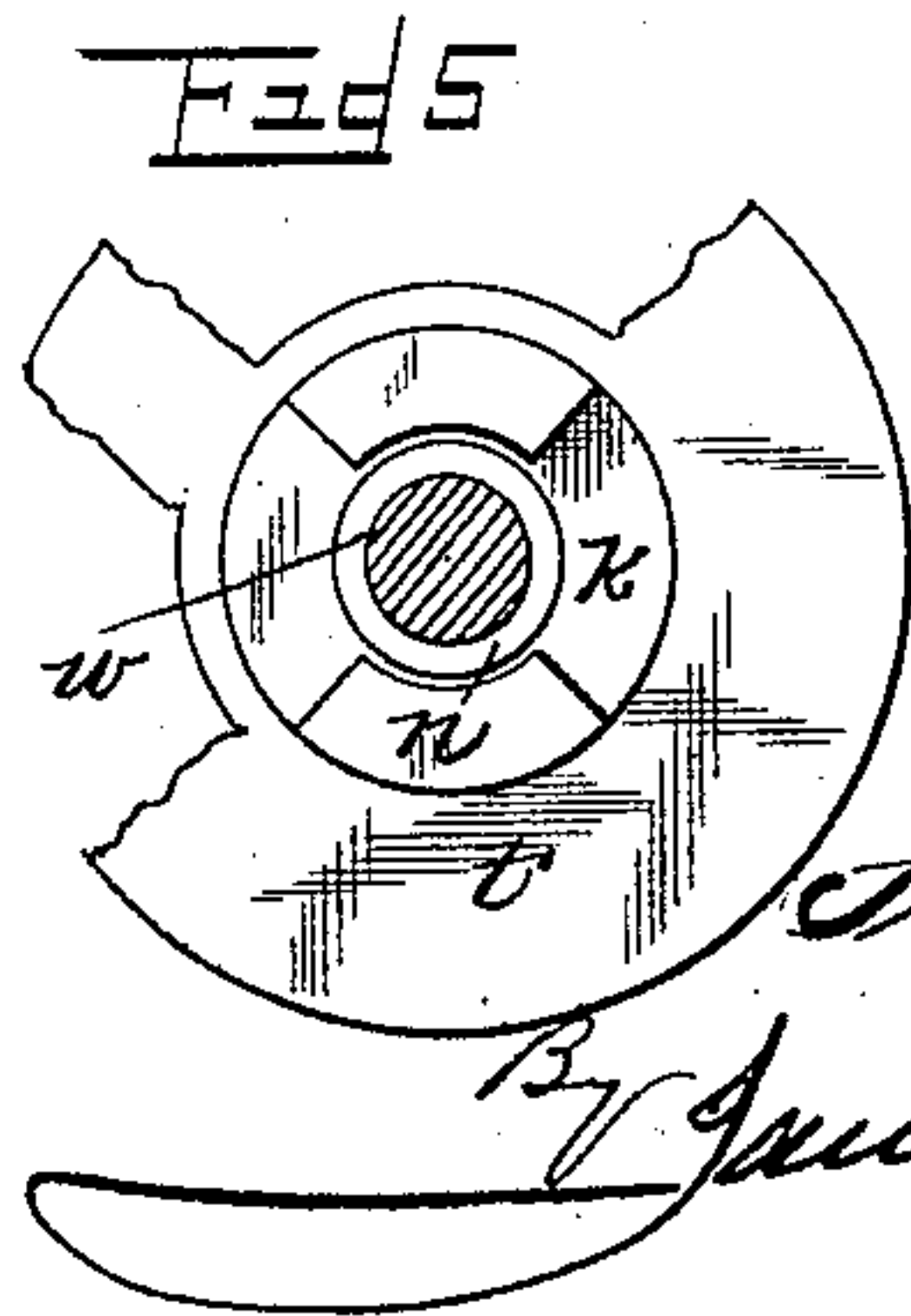
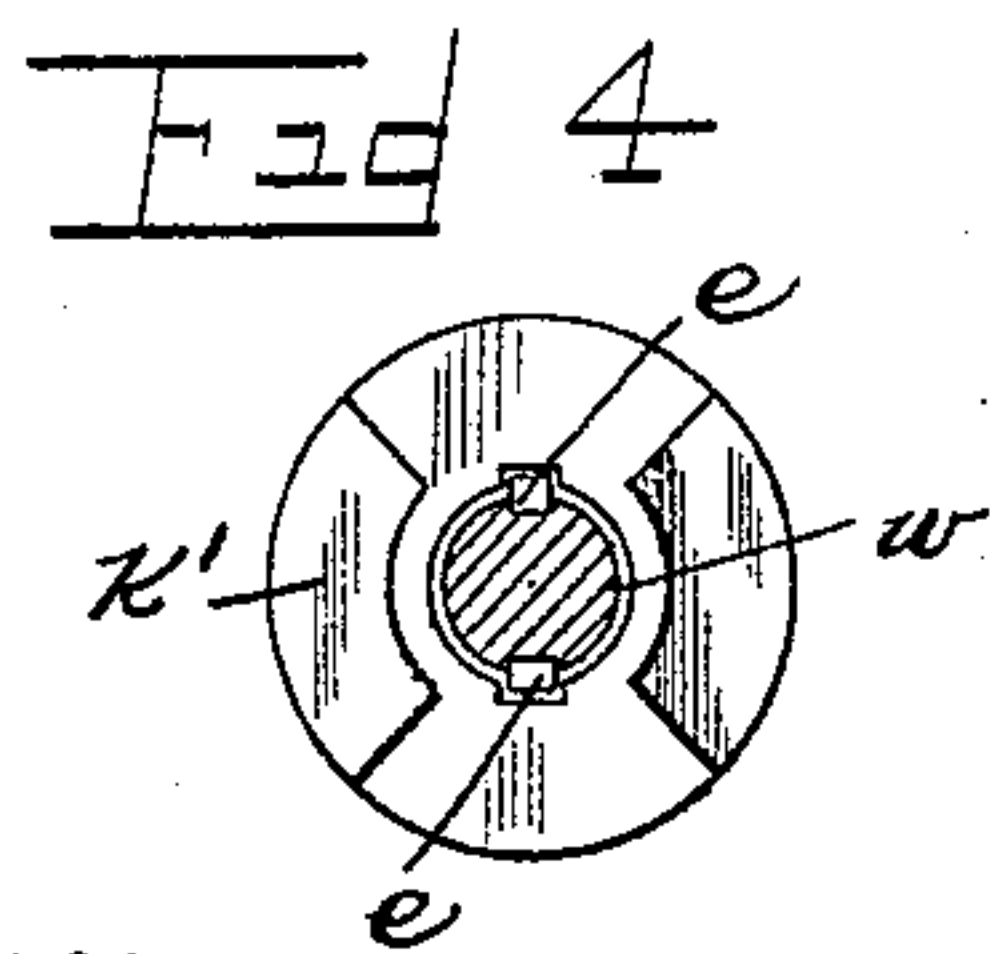
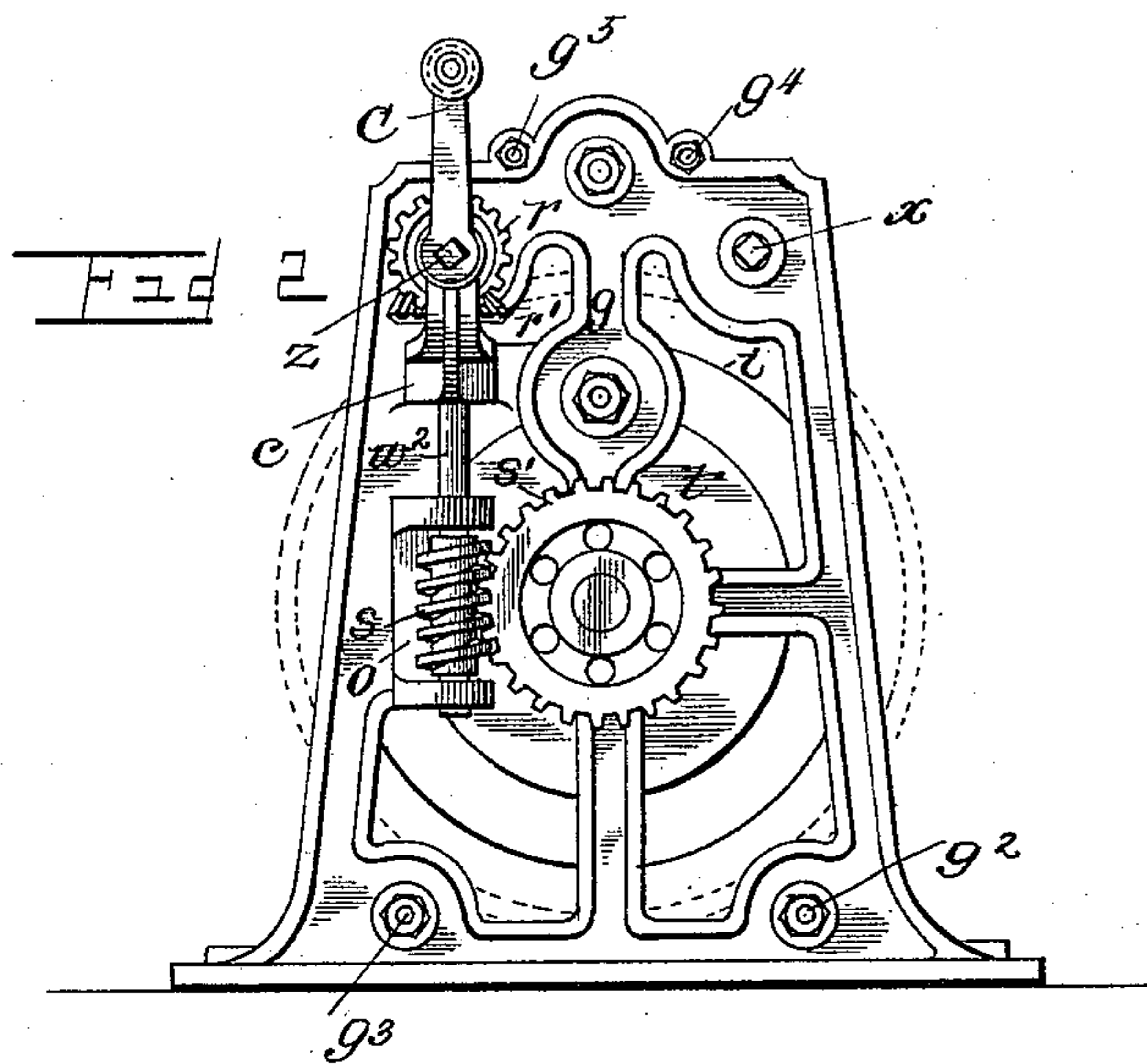
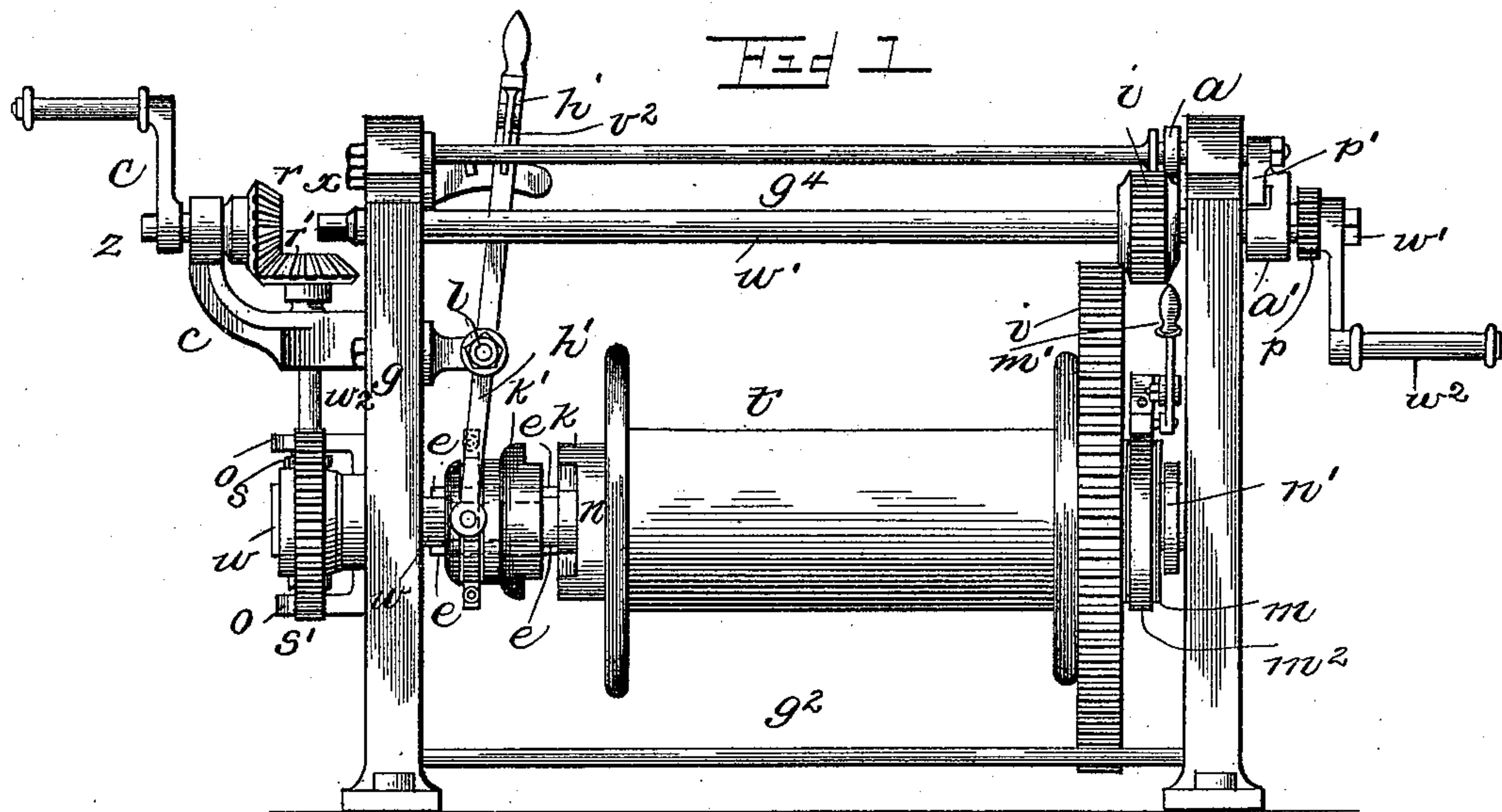
(No Model.)

2 Sheets—Sheet 1.

F. UHLIG.  
HAULING WINDLASS.

No. 485,515.

Patented Nov. 1, 1892.



Witnesses

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Inventor

Franz Uhlig.  
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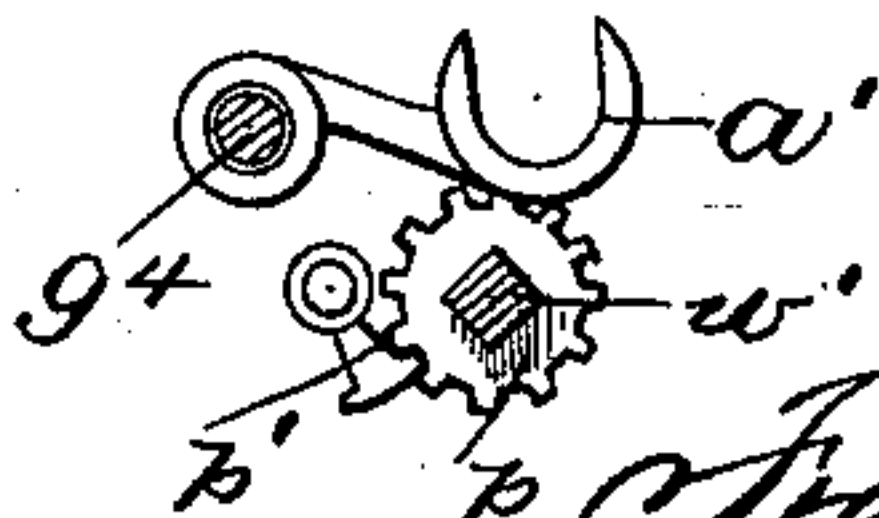
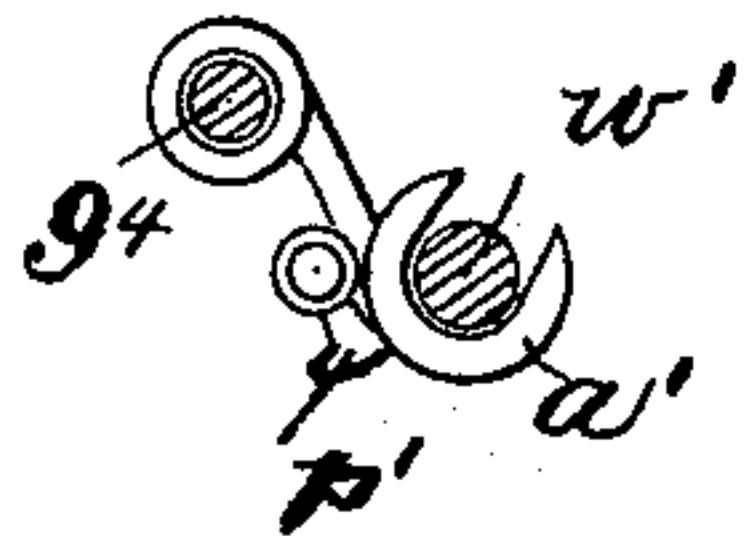
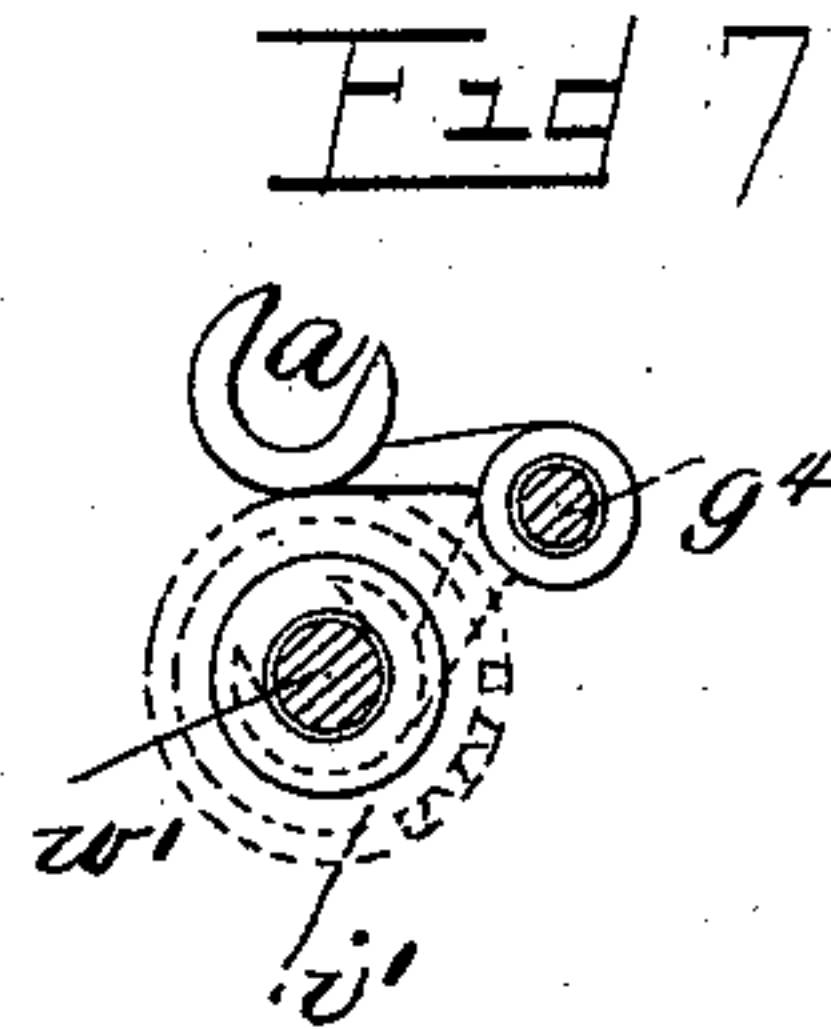
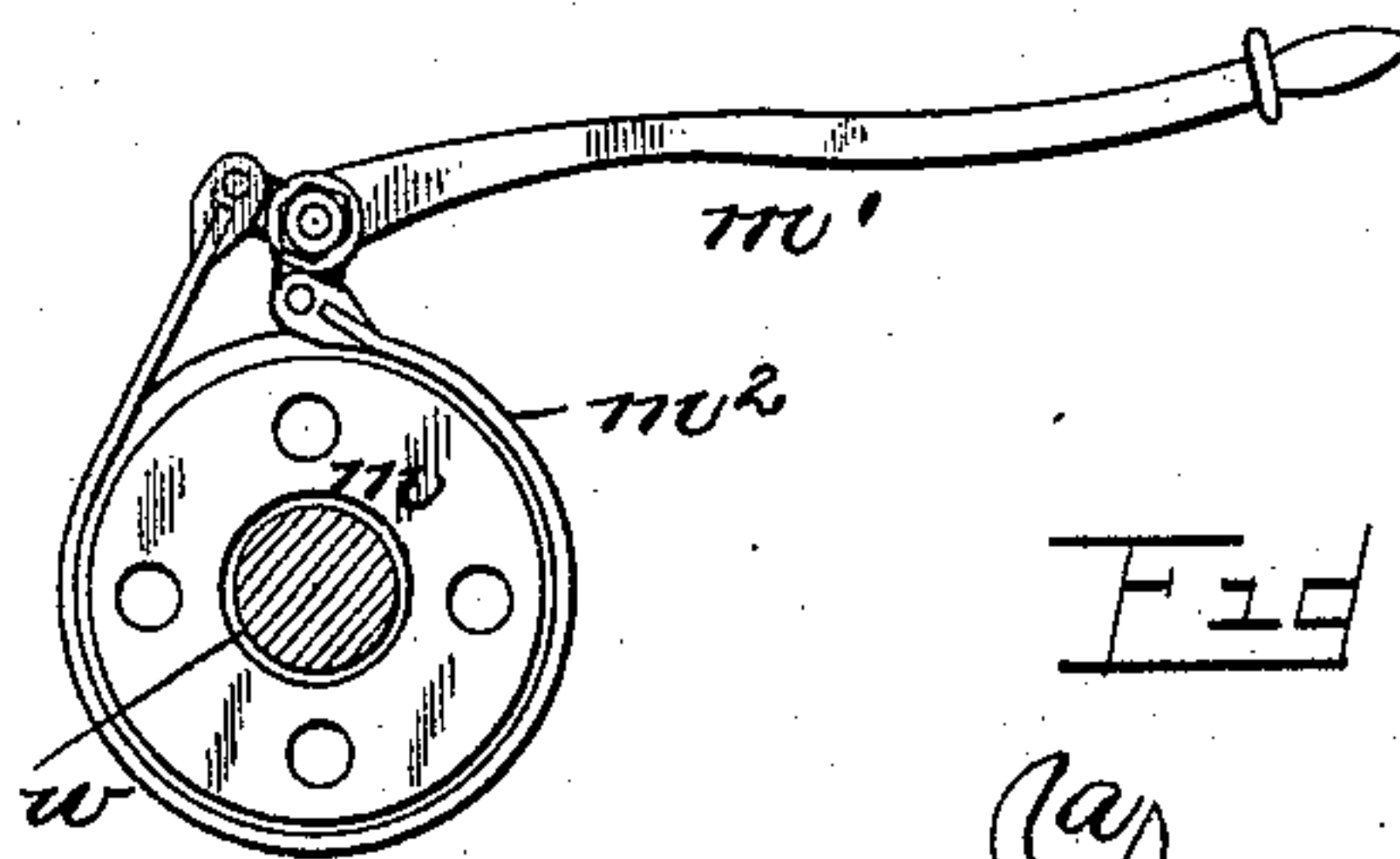
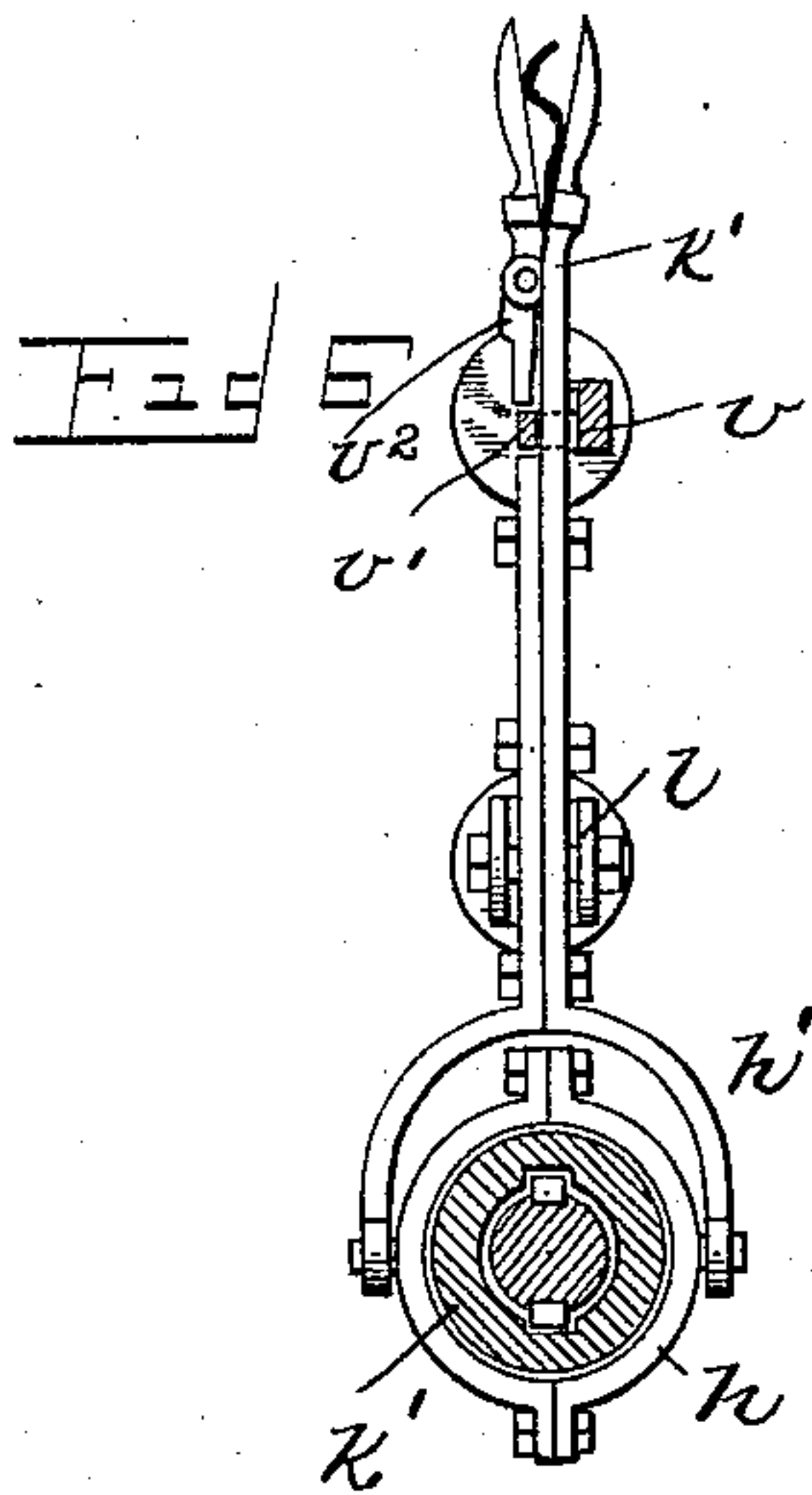
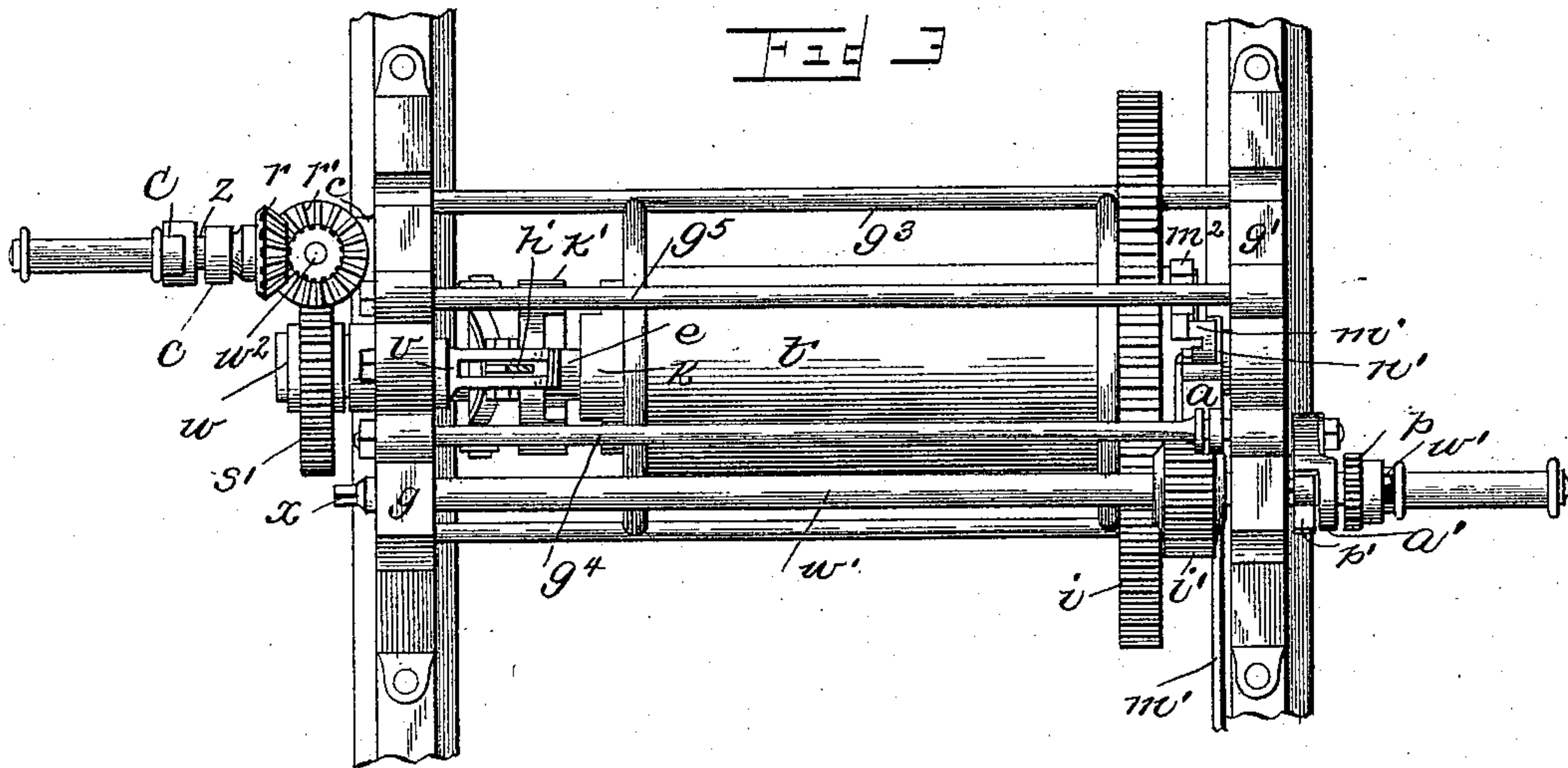
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2 Sheets—Sheet 2.

F. UHLIG.  
HAULING WINDLASS.

No. 485,515.

Patented Nov. 1, 1892.



Witnesses

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# UNITED STATES PATENT OFFICE.

FRANZ UHLIG, OF TOPKOWITZ, NEAR BADENBACH, AUSTRIA-HUNGARY.

## HAULING-WINDLASS.

SPECIFICATION forming part of Letters Patent No. 485,515, dated November 1, 1892.

Application filed July 7, 1892. Serial No. 439,273. (No model.)

*To all whom it may concern:*

Be it known that I, FRANZ UHLIG, engineer, a subject of the Emperor of Austria-Hungary, residing at Topkowitz, near Badenbach, in the Kingdom of Bohemia, Austria-Hungary, have invented certain new and useful Improvements in Hauling-Windlasses with a Double Impulsion; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to hand-winding windlasses wherein there is a double means for winding the drum, said windlass adapted for the raising and lowering of weighty bodies on shipboard or in and about the construction of buildings and elsewhere where needed.

My invention consists in the novel construction, combination, and arrangement of parts hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a front elevation of an apparatus constructed according to my invention. Fig. 2 is a side view thereof. Fig. 3 is a top plan view of the same. Figs. 4 and 5 are detail views of the clutch mechanism. Fig. 6 is a sectional view of the same with the clutch operating lever in elevation. Fig. 7 is a detail view of the driving-wheel shaft and adjacent mechanism. Fig. 8 is a view, enlarged, of the friction-brake mechanism. Figs. 9 and 10 are details showing the driving-gear shaft in section and the devices for retaining the same in or out of engagement with the gearing for rotating the drum.

In the said drawings the reference-letters  $g g'$  represent the uprights of the frame of the apparatus, which are connected together and strongly braced by horizontal cross-bars  $g^2$ ,  $g^3$ ,  $g^4$ , and  $g^5$ . Turning on a shaft  $w$ , journaled in the end uprights  $g g'$ , is a drum  $t$ , securely fixed to which drum is a large spur gear-wheel  $i$ . Above the drum  $t$  a second shaft  $w'$  is supported to rotate in the afore-said end uprights  $g g'$ , said shaft being capable of a lateral adjustment in said uprights, as and for the purpose which will now be described.

Mounted upon the shaft  $w'$ , near one end

thereof, and turning therewith is a driving-wheel  $i'$ , which is adapted to be thrown into and out of gear with the spur gear-wheel  $i$ , secured to the drum  $t$ , by means of the shaft  $w'$ , which may be moved laterally for that purpose. In order to securely retain the shaft  $w'$  with the driving-wheel  $i'$  in gear with the wheel  $i$  or out of gear therewith, I provide two claws  $a a'$ . (Shown in detail in Figs. 7, 9, and 10.) These claws are mounted on one of the horizontal connecting-rods, as  $g^4$ , in such a manner that they may be turned down to embrace the shaft  $w'$  and turned upwardly out of engagement therewith. The claw  $a$  is arranged on the said shaft  $w'$  directly inside one of the end uprights, as  $g'$ , in such a position that when the shaft  $w'$  is moved laterally in the proper direction to place the spur-gears  $i$  and  $i'$  in operative engagement it will drop and embrace said shaft  $w'$  between the driving-wheel  $i'$  and the end upright, thus preventing the said driving-wheel disengaging the wheel  $i$ .

When the spur-gears  $i$  and  $i'$  have been disengaged by the proper lateral movement of the shaft  $w'$ , the claw  $a'$  is moved to a position to embrace the shaft  $w'$ , between the outside face of the end upright and the cog-wheel  $p$ , fixed on the end of the shaft  $w'$ , as shown in Fig. 1, thus preventing lateral movement in the direction to engage said spur-gears. Pivoted to the end upright is a pawl or catch  $p'$ , which engages the cog-wheel  $p$  when the spur-gears  $i i'$  are in engagement. In this manner a load being raised may be retained stationary at any point of its ascent or descent. Both ends of the shaft  $w'$  are formed suitably, as at  $x$ , for the attachment of a crank-handle  $w^2$ , which crank-handle may be applied to either end, as occasion or convenience may require.

The above-described mechanism is adapted for the raising or lowering of light or moderate weights. For the purpose of raising or lowering heavier articles I have provided the following mechanism:

At the other end of the apparatus, supported in a bracket  $c$ , is a small shaft carrying at its inner end a conical cog-wheel  $r$ , which gears with a similar conical cog-wheel  $r'$ , carried by a vertical shaft  $w^2$ , also sup-



ported in said bracket *c*. The lower end of the shaft is supported by a bracket *o*, and a screw *s* is secured upon or formed with the lower end of said shaft *w*<sup>2</sup>, which screw engages a screw-wheel *s'*, mounted upon the end of the shaft *w*. Motion imparted to the conical cog-wheel *r* by turning the crank-handle *C* is conveyed through the cog-wheel *r'*, the screw *s*, and the screw-wheel *s'* to the shaft *w*, carrying the drum *t*. This mechanism is adapted to be thrown into and out of operation by means of clutch or coupling mechanism constructed and arranged as follows: Sliding upon the shaft *w* is one part of a clutch *k'*, which is formed with a projection adapted to engage a corresponding recess formed in the other part *k* of said clutch, which part *k* is secured to the drum *t*. The part *k'* is thrown into and out of engagement with the part *k* by a lever *h'*, which is fulcrumed at *l* in a bracket extending from the end upright, the lower end of which lever is connected to the sliding part *k'* by means of a two-part ring *h*. Secured to the upper part of the frame is a guide *v*, in which the lever *h'* moves, which guide is provided with a series of recesses or notches *v'*, with which a pawl *v*<sup>2</sup>, pivoted to the lever *h'*, is adapted to engage to hold the said lever in the position it assumes when the two parts of the clutch are in or out of engagement. Engaging corresponding recesses formed in the shaft *w* and the part *k'* of the clutch is a spring *l*, which prevents said part of the clutch slipping axially.

It will be understood that the mechanisms above described may be used either separately or conjointly, as circumstances may demand.

In some instances it is unnecessary and even undesirable to employ the gearing when lowering a weight, in which event both mechanisms may be thrown out of operation and the weight allowed to lower by its own gravity. For such purpose I provide a friction-brake to prevent a too-rapid movement of the weight

in lowering, such brake being constructed and arranged in the following manner:

A friction plate or disk *m* is mounted loosely on the shaft *w* and firmly fixed to the spur gear-wheel *i*, and embracing this friction plate or disk is a friction-band *m*<sup>2</sup>, the two ends of which are connected to suitable linked-arm mechanism, which is operated by a lever *m'* to place the brake in or out of operation. It is only necessary to add that in some cases it may be found desirable to operate the first-described driving mechanism consisting of the spur gear-wheels *i* and *i'* from both sides of the machine, in which case the crank *C* would be removed from its shaft *z* and placed upon the end *x* of the shaft *w'*.

Having thus described my invention, what I claim is—

1. In a windlass, the combination, with a shaft and a drum mounted on said shaft, of two independent sets of mechanisms for driving said drum and mechanism for throwing said mechanisms into and out of operation, substantially as described.

2. In a windlass, the combination, with a shaft *w*, of a drum mounted to turn on said shaft, a spur gear-wheel secured to said drum, a laterally-movable shaft, a driving-gear carried by said shaft gearing with said spur gear-wheel, devices engaging the laterally-movable shaft to secure the driving-gear in or out of engagement with the spur gear-wheel, a screw-wheel on the shaft *w*, a cog-driven screw engaging said screw-wheel, a clutch for throwing the drum into and out of operative connection with its shaft, and a friction-brake mechanism connected to the shaft *w*, substantially as described.

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

FRANZ UHLIG.

Witnesses:

CARL F. KEICHELT,  
HERNANDO DE SOTO.