

(No Model.)

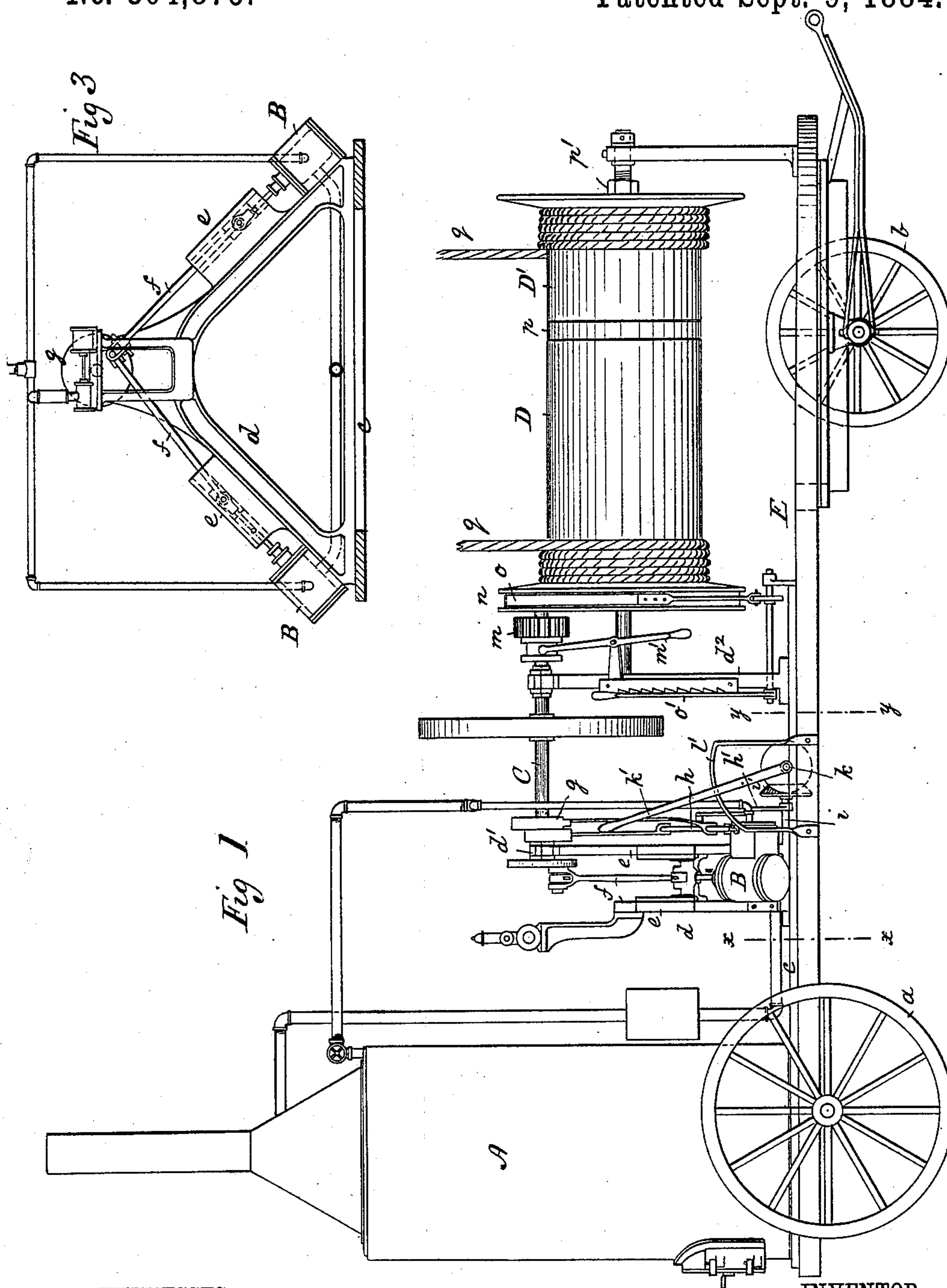
2 Sheets—Sheet 1.

G. M. VIERNOW.

HOISTING MACHINE.

No. 304,875.

Patented Sept. 9, 1884.



WITNESSES:

*John Cook*  
*C. Sedgwick*

INVENTOR:

*G. M. Viernow*

BY

*Mumford*

ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

G. M. VIERNOW.

HOISTING MACHINE.

No. 304,875.

Patented Sept. 9, 1884.

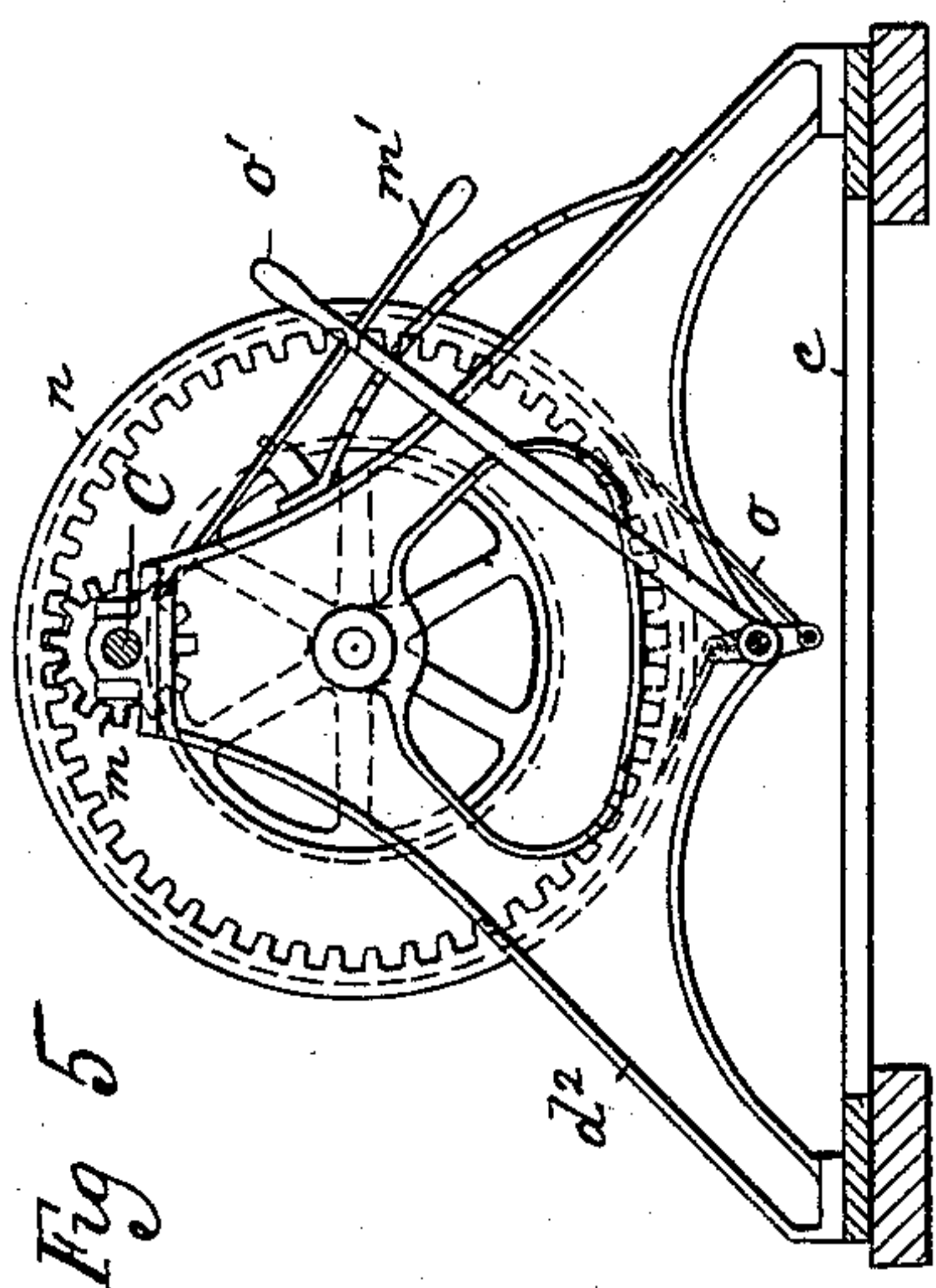


Fig 5

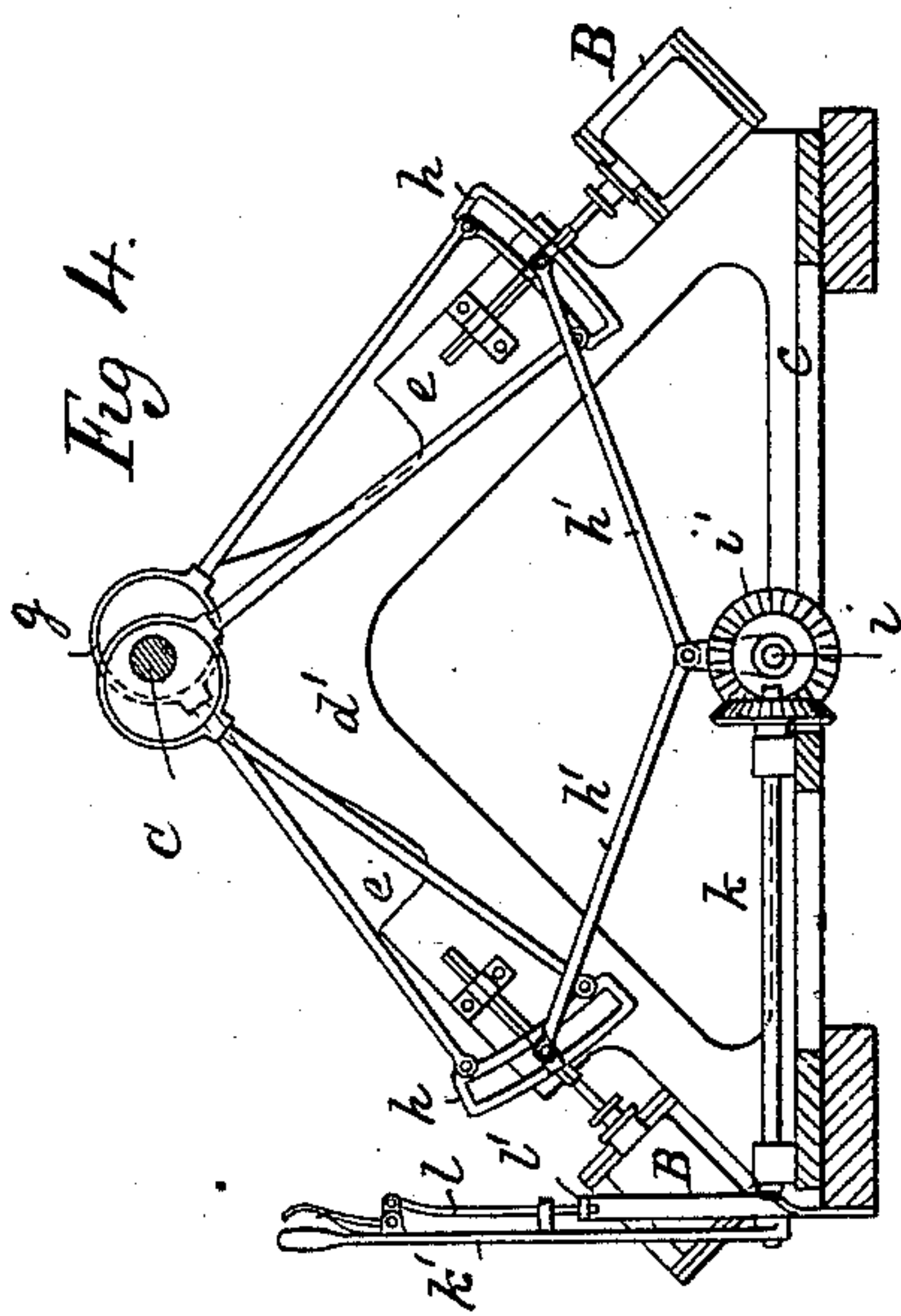


Fig 4.

WITNESSES:

John Cook  
C. Sedgwick

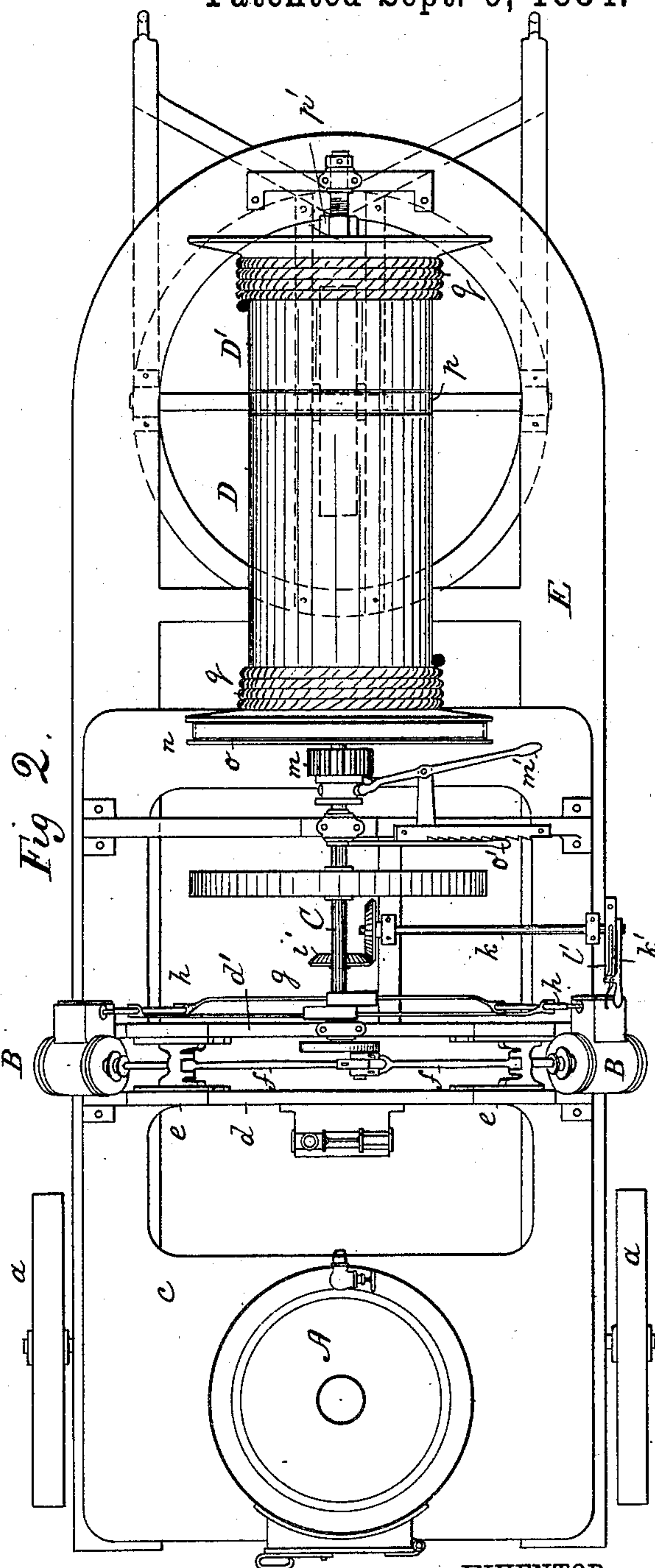


Fig 2.

INVENTOR:

G. M. Viernow

BY

Munn & Co

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

GUSTAV M. VIERNOW, OF ST. LOUIS, MISSOURI.

## HOISTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 304,875, dated September 9, 1884.

Application filed July 24, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, GUSTAV M. VIERNOW, of St. Louis, in the county of St. Louis and State of Missouri, have invented certain new and useful Improvements in Hoisting-Machines, of which the following is a full, clear, and exact description.

The object of my invention is to provide a hoisting-machine of compact form and convenient arrangement for the use of builders and others. To that end I employ two engines working on one wrist-pin, and gear the drum to the driving-shaft by a pinion sliding on the latter. For reversing, two links are connected to a rock-shaft fitted for operation by a lever to reverse both engines at once. The drum is made in two parts, separable for adjustment of the rope, and the whole machine is mounted on a truck, all as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the machine. Fig. 2 is a plan view. Fig. 3 is a transverse section on the line *xx* of Fig. 1. Fig. 4 is a cross-section on the line *yy* of Fig. 1, showing the reversing-gear; and Fig. 5 is a cross-section on line *yy*, looking toward the drum.

A is the boiler, B B are the engine-cylinders, C is the driving-shaft, and D the hoisting-drum, all supported with the other parts of the machine on a truck, E, which is sustained on two wheels, *a a*, and a swiveling wheel, *b*, at the front. The bed-plate *c*, carrying the boiler and engines, is formed with rear stands, *d d'*, on which the cylinders B are attached at an inclination of forty-five degrees. The stands are made with guides *e* for the cross-heads, and the rods *f* connect to the same wrist-pin on the crank-disk of the shaft C, so that the engines work at right angles and carry each other over the dead-center. The driving-shaft is supported on stand *d'*, and a forward stand, *d''*, and carries two eccentrics, *g*, for operating the valve-rods of both engines through the medium of links *h*. (Shown in Fig. 4.) Each eccentric has two lugs for connection of a rod from each link *h*, so that each link is connected

to both eccentrics, and but two eccentrics are thus required for operating the valves. The rods *h'* from the links are connected to an arm on an intermediate shaft, *i*, supported on bed *c*, and this shaft *i* is geared by miter-wheels *i'* to a short cross-shaft, *k*, that has a lever, *k'*, by which the two shafts can be rocked, and the links thereby simultaneously shifted to reverse the engines. This may be done without shutting off the steam, and the lever is provided with a spring-catch, *l*, engaging an arch, *l'*, for retaining the parts in place.

On the driving-shaft C is a pinion, *m*, attached by a feather, so that the pinion can be moved on the shaft by means of a lever, *m'*, to engage the pinion with the internally-toothed rim *n* on the end of drum D. The rim *n* is provided with flanges, between which is a brake-strap, *o*, fitted for being tightened by means of a lever, *o'*, for breaking the drum. The drum is in two parts, the larger portion fixed on the shaft, and the smaller end portion, D', fitted to slide on the shaft, and the two parts are connected by pins in a middle head, *p*. A nut, *p'*, holds the part D' up to place, so that when it is necessary to take up or let out the hoisting-rope the nut is to be screwed back and the part D' moved on the shaft and then rotated to wind or unwind the rope. The ropes *q* pass off from opposite sides of the drums over pulleys and to the platforms, so that in operation one platform is raised as the other is lowered.

By this construction and arrangement the machine is rendered very compact, and can be conveniently operated, especially for supplying materials to buildings in course of erection, and it can be easily moved from place to place. The machine can also be used for mining purposes.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination and arrangement, in a hoisting-machine, substantially as described, of the two engine-cylinders B, connecting-rods *f*, driving-shaft C, and the reversing-links *h*, connected for simultaneous operation, as specified.

2. The combination, with two engine-cylinders

ders and their reversing mechanism, substantially as described, of two eccentrics, each connected to both links, whereby but two eccentrics are required for the operation of the  
5 valves of both cylinders and for their reversal, as specified.

3. In a hoisting-machine, the combination of links *h h*, rods *h'*, shafts *i k*, miter-wheels *i'*, and lever *k'*, substantially as described.

10 4. In a hoisting-machine, the combination

of shaft *C*, sliding pinion *m*, lever *m'*, and drum *D*, provided with internally-toothed rim *n*, substantially as described.

5. In a hoisting-machine, the winding-drum *D*, made with the separable portion *D'*, substantially as and for the purpose specified. 15

GUSTAV M. VIERNOW.

Witnesses:

FRED STEWART,  
JOSEPH LEFFLER.