(No Model.) 2 Sheets—Sheet 1.

F. STRECKENBACH.

POWER GEARING FOR HOISTING MACHINES.

No. 534,294. Patented Feb. 19, 1895.

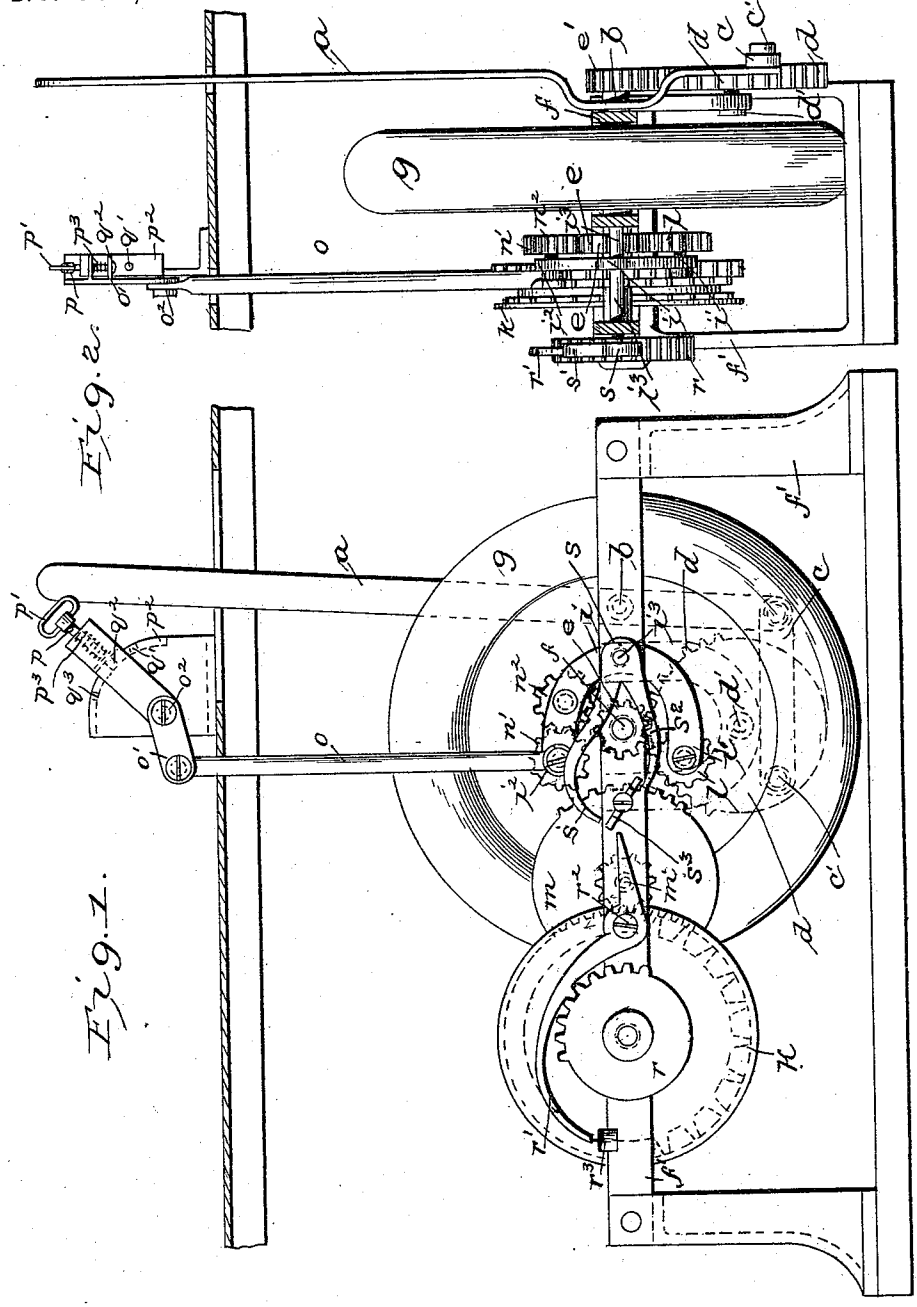

Fig. 2.

Fig. 1.

Attest
Wm. E. Hall
M. F. Allemus

Inventor
Fritz Streckenbach
by Richards & Co
Attys.

(No Model.) 2 Sheets—Sheet 2.

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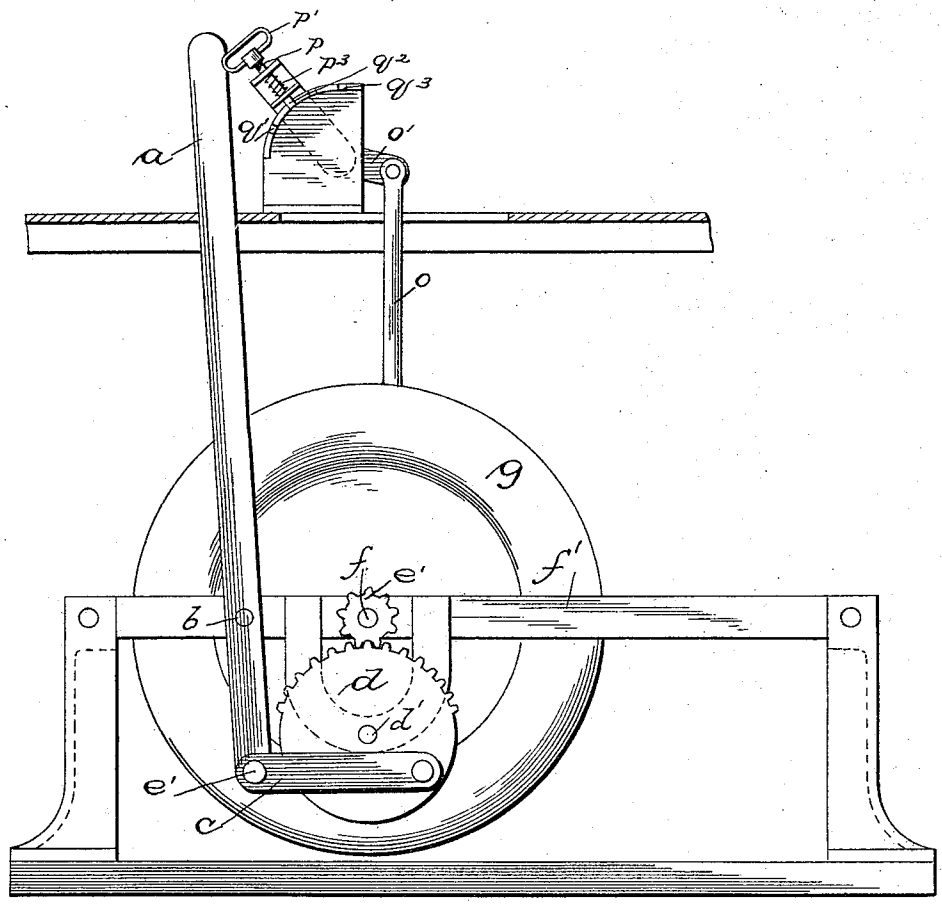
Fig. 3.



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by Richards & C
Attys.

UNITED STATES PATENT OFFICE.

FRITZ STRECKENBACH, OF BERLIN, GERMANY.

POWER-GEARING FOR HOISTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 534,294, dated February 19, 1895.

Application filed January 12, 1894. Serial No. 496,675. (No model.)

To all whom it may concern:

Be it known that I, FRITZ STRECKENBACH, a subject of the King of Prussia, German Emperor, residing at Berlin, Germany, have invented certain new and useful Improvements in Power-Gearing for Hoisting-Machines, of which the following is a specification.

This improved power-gearing for hoisting machines consists of a crank motion operated by hand which accumulates in a fly wheel, such an amount of power, that when suddenly thrown in gear by carrier pinions mounted upon a lever, considerable heavy loads can be hoisted by one man.

In the drawings:—Figure 1 is a longitudinal view, and Fig. 2, an end view. Fig. 3, is a right hand side view of Fig. 2 in elevation.

In carrying out my invention a is a lever arranged to be oscillated upon the stud b, the lower end of which lever a is jointed to the small connecting lever c, which engages the stud c' upon the toothed wheel d. The toothed wheel d is mounted upon the stud d' and is in gear with the pinion e' secured upon the shaft f which latter is mounted in the fixed frame f' and carries also the fly wheel g.

If the lever a is oscillated upon the stud b the toothed wheel d rotates the pinion e' and its shaft f and the latter the fly wheel g thereby accumulating in the latter a large amount of live power. The power thus accumulated can at any desired moment be transmitted to the rope drum k by means of a lever i and carrier wheels upon it, which are adapted to cause the drum to turn either to the left or right and respectively raise or lower the load while the attendant continues to impart fresh power by oscillating the lever a. The lever i has two arms i' and i^2 and is secured upon a spindle i^3, the arm i' carrying a carrier pinion l which in a raised position is in gear with the pinion e secured upon the fly wheel shaft f and with the toothed wheel m upon the counter shaft m' from which rotary motion to the left is imparted to the rope drum k. The lever arm i^2 carries two carrier pinions n' and n^2 in gear with each other and in the lower position respectively with the toothed wheel m and pinion e whereby motion is transmitted to the rope drum k in a reverse direction. The carrier pinion lever i is actuated by means of the rod o jointed to the knee lever o' which is fulcrumed to the stud o^2 and retained in position by means of a bolt p furnished with a handle p' and pressed into recesses q', q^2, q^3 formed in a plate p' by means of a spring p^3. In the middle position q^2 all the carrier pinions are out of gear with the toothed wheel m. in the lowest position q' the rope drum turns to the left and in the highest position q^3 to the right.

In order to retain the rope drum k in any desired position when out of gear a ratchet wheel r is secured upon the axis of the drum k in connection with a pawl r' upon a stud r^2 employed under the influence of a weight r^3 or spring which causes the pawl r' to enter the ratchet wheel r. The pawl r' is lifted and retained out of gear with the ratchet wheel r each time the carrier pinions arrive in their working position, by means of the collar s mounted so as to turn with the lever i on the stud i^3, the collar having two fingers, s' the upper and s^2 the lower, the upper finger operating the pawl when the lever o is depressed and the lower one acting when the lever o is raised.

In order that the two fingers s' and s^2 may act a leaf s^3 is pivoted between the said fingers with its outer end adapted to contact with the pawl end under pressure from the arm s' and its opposite end adapted to be lifted by the upward movement of finger s^2.

If it is desired to turn the drum k to the left the lever arm i' turns the leaf s^3 to the left which moves the pawl r' to the right thus lifting it out of gear. If the rope drum k is to turn to the right the lever arm i^2 turns the leaf s^3 to the right and thus lifts the pawl also out of gear.

The power gearing described is specially applicable for hoisting loads in buildings, for which purpose it is erected in the cellar, the lever a, spring bolt p and its handle projecting through the respective beams, that is above the ground floor. On this floor is a workman who oscillates the lever a with his right hand and with his left sets the pawl p as may be required.

It will be noticed that the lever and gearing for driving the fly wheel is on one side thereof, while the lever i, the pinion e and wheel m are on the other side.

I claim—

1. In combination, the fly wheel with means for driving the same the pinion *e*, driven thereby, the drum, the two armed lever having carrier pinions to engage the pinion *e*, the gearing between the carrier pinions and the drum, the pawl and ratchet for controlling the drum, and the means for operating the said pawl when the double armed lever is moved in either direction, substantially as described.

2. In combination, the fly wheel, with means for driving the same, the pinion *e* driven thereby, the pawl for holding said drum normally stationary, the train of gearing leading from the drum, the two sets of pinions adapted each to connect the gearing with the pinion *e*, and means for releasing the pawl when said gearing is connected, substantially as described.

3. In combination, the fly wheel, with means for driving the same the pinion *e* operated thereby, the drum, the pawl and ratchet for holding said drum normally stationary, the train of gearing connected with said drum, the two armed lever having carrier pinions on its arms for connecting the train of gearing with the pinion *e*, and the fingers s' and s^2 and interposed leaf s^3 operated by said two armed lever and serving to release the said pawl and ratchet when the carrier pinions engage the gearing and pinion *e*, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

FRITZ STRECKENBACH.

Witnesses:
SETISO. D. WYNGARD,
ALBERT SCHUBERT.