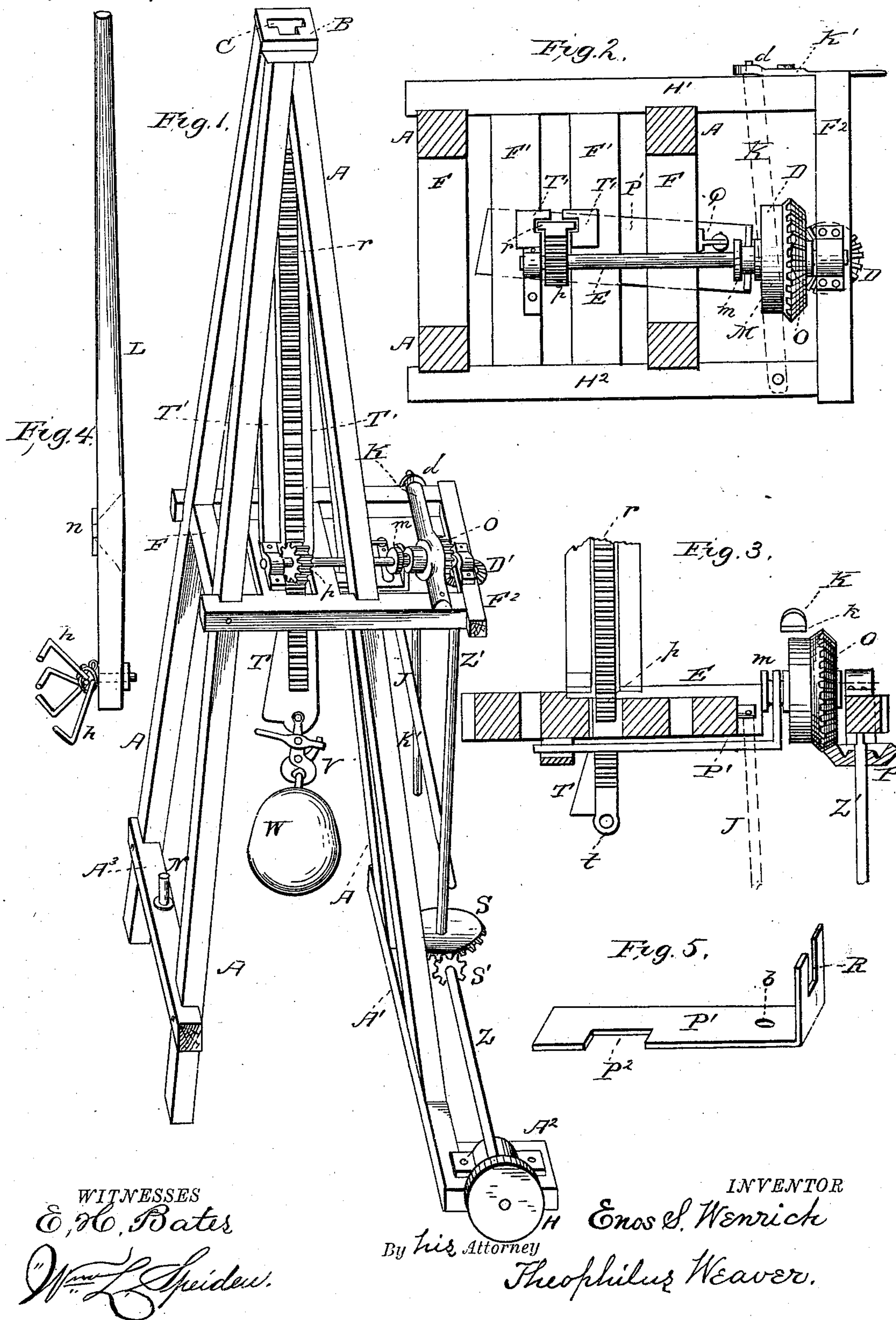


(No Model.)

E. S. WENRICH.
DROP METAL BREAKER.

No. 256,777.

Patented Apr. 18, 1882.



UNITED STATES PATENT OFFICE.

ENOS S. WENRICH, OF HARRISBURG, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO CHRISTOPHER E. WENRICH AND WILLIAM H. McBRIDE, BOTH OF SAME PLACE.

DROP METAL-BREAKER.

SPECIFICATION forming part of Letters Patent No. 256,777, dated April 18, 1882.

Application filed February 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, ENOS S. WENRICH, of Harrisburg, county of Dauphin, and State of Pennsylvania, have invented certain new and useful Improvements in Drop Metal-Breakers, of which the following is a specification.

My invention relates to breakers of cast metal usually employed at foundries and at iron and steel works to reduce large castings and ingots into smaller parts to be handled more conveniently for resmelting or reworking the same. Its main features consist in, first, a jack mechanism consisting of two sets of bevel-gears transmitting the forward motion of the engine from a horizontal shaft near the ground to a horizontal shaft on the platform on the tower, which latter shaft has on it a pinion to engage the hoisting-rack and a friction appliance in connection with a pulley thereon to regulate the descent of the said rack; second, the rack for hoisting the drop-weight, arranged in vertical guides on upper part of the tower, and having its lower end provided with a lateral extension or strike to automatically unship the jacking train of gears when the rack has been fully elevated and the drop-weight let fall, to allow the engine or other driving power to continue with the forward motion or without reversing; third, a grapple-lever for bringing the weight after it has been dropped, within reach of the rack to secure it thereto by the ordinary trip-catch for such purpose.

I attain said improvement by appliances and construction as illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my invention with my grapple-lever detached. Fig. 2 represents a top view of the tower-platform. Fig. 3 represents a vertical section of the same. Fig. 4 represents my grapple-lever. Fig. 5 represents my hoisting-gear uncoupler.

Similar letters refer to similar parts in all the views.

Letter A represents the posts or corner up-rights of said tower.

A' denotes a sill on which two of said posts stand, it having at its end the head-block A², for supporting the driving-shaft Z at the pul-

ley H. B denotes a capping which joins the tops of the posts A and of the rack-guides T'. In the middle of the top of the capping is an opening, C, for the upper end of the rack *r* to pass through.

Letters F F' F² H' H² represent the timbers of the horizontal frame or platform at about the mid-height of the tower on which is supported the jack mechanism, mainly consisting in the toothed hoisting-rack *r* T, the pinion *p*, meshing into said rack and supported on shaft E, which has on it the shifting bevel-gear O, and the friction-pulley M, provided with the collar *m*, said pulley being massed or connected with gear O. On the under side of said platform is supported on keepers thereat the uncoupler P', which has on it the slotted arm R, by which it connects with the collar *m* on the pulley, and has also on it the notch P² or its equivalent, by which it is tripped or shifted by the strike or inclined extension T at the lower end of said rack *r*. When said strike T is elevated full height it passes into said notch P², and pushes the uncoupler P', and thereby draws the gear O out of connection with the bevel-gear D' on the shaft Z' by which the upper or jack train is driven. On top of said platform is the lever K, provided with replaceable friction-liner *k*, and bent to apply to the periphery of the pulley M. Said lever is operated by the lever K', pivoted thereto at *d*, as shown. The object of this friction-brake is to control the descent of the rack *r* after it has been fully elevated, the drop-weight W let fall, and the gear O has been uncoupled. The handle K' of the brake is made long enough to be reached by the operator while standing on the ground. Likewise is the handle J extended, by which the uncoupler P' is operated by hand to couple gear O after the rack *r* has been lowered and the drop-weight W connected thereto by the ordinary catch or trip-bit, V.

If it occur that the weight W, when dropped in breaking iron, does not fall or lodge in the right spot vertically beneath the rack *r*, I employ the lever L to bring it to place. Said lever is entered on the pin N at the fulcral plate and slot at *n*, and has on its short arm the grapples *h*.

The horizontal shaft Z, having the pulley H

thereon, communicates with the jack mechanism on the tower by the bevel-gears S S' and the shaft Z'. Said shaft Z may be under ground, if desired, and may be extended to
 5 conveniently connect with an engine at a distance off. The upright rack-guides T' rest on the cross-ties F', and are embraced above between the posts A. They are grooved to admit the edges of the rack r partly into them,
 10 as shown in Figs. 1 and 2.

My invention enables one man to operate it alone and to use a much heavier drop than is now employed. Besides, I obtain much greater precision for the drop than is now attained,
 15 its aim being certain, while with the present breakers the drop being suspended to vibrate or swing it often misses to strike where it is desired. I can also elevate my drop-weight more rapidly, economizing also by utilizing the
 20 surplus steam at works at times when the full power of the engine is not in requisition.

It will be noticed that the brake bar or lever K acts automatically to press on the pulley M when it and wheel O are shifted by the un-
 25 coupler P' at the instant the weight W is dropped, the gear O being a little larger than said pulley and moving the brake-lever K by contact therewith.

Having described my invention, I compress
 30 into claims what I desire to secure by Letters Patent of the United States.

I claim—

1. The toothed rack r, guided in the vertical parts T', in combination with the pinion p and the gears O D' S S', all arranged and op- 35
 erating substantially as set forth.

2. The rack r, provided with the strike T, the uncoupler P', provided with catches P² R, and the intermittent gear O, provided with the collar m thereon, all coacting automatically as 40
 and for the purpose set forth.

3. The upright rack r T, the uncoupler P', the intermittent gears p O, and the constant forward train of gears D' S S' and pulley H, all arranged and operating as and for the pur- 45
 pose set forth.

4. The friction-pulley M on shaft E, in combination with the brake-levers K-K' and wheel O, acting in conjunction with the rack r T, as 50
 herein set forth.

5. The lever L, provided with the grapples h, in combination with the pivot N on brace A³, as and for the purpose set forth.

In testimony that I claim the above-named invention I have hereunto set my hand and 55
 seal this 20th day of January, 1882.

ENOS S. WENRICH. [L. S.]

In presence of—

PETER STUCKEVER,
 THEOPHILUS WEAVER.