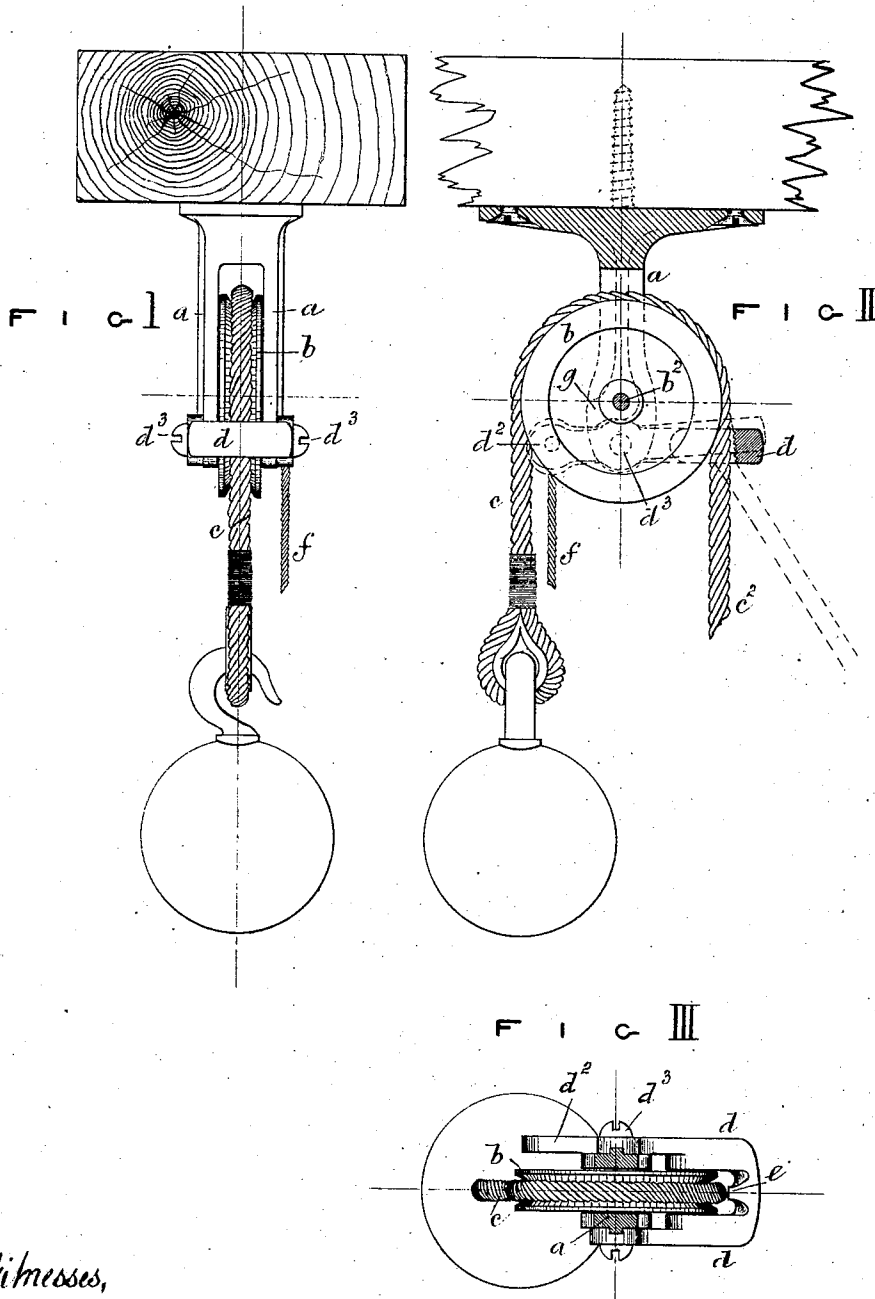


T. A. WESTON.

Pulleys.

No. 155,210.

Patented Sept. 22, 1874.



Witnesses,

Richard Sherrett

Henry Sherrett

Inventor

Thomas Aldridge Weston.

UNITED STATES PATENT OFFICE.

THOMAS A. WESTON, OF RIDGEWOOD, NEW JERSEY, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN HEINS, OF PHILADELPHIA, PA.

IMPROVEMENT IN PULLEYS.

Specification forming part of Letters Patent No. 155,210, dated September 22, 1874; application filed September 7, 1874.

To all whom it may concern:

Be it known that I, THOMAS ALDRIDGE WESTON, of Ridgewood, in the county of Bergen and State of New Jersey, have invented an Improved Pulley Brake or Check, of which the following is a specification:

This invention consists of a lever pivoted to the frame or block of the pulley below or eccentric to the axis of the sheave, the outer end of its longer arm being bent horizontally, so as to embrace the periphery of the sheave at the hauling side, and resting in close proximity thereto, or to the rope or chain thereon, and so arranged that when resting in a horizontal or normal position it offers no resistance to the free passage of the rope over the sheave, but when raised slightly from this position the bent arm of the lever is brought into close contact with the rope and sheave, and their motion thereby arrested.

In the accompanying drawing, Figure 1 represents in end elevation, Fig. 2 in side elevation, and Fig. 3 in plan (partly in horizontal section) a single-sheaved pulley-block constructed according to my invention.

a is the frame of the pulley-block; b , the sheave, and b^2 the axis of the sheave. c is the rope passing over the sheave, and c^2 is the hauling or winding side of the said rope. On the frame a of the pulley-block, and at a short distance below the axis b^2 of the sheave, a lever, d d^2 , is pivoted at d^3 . The longer arm d of the lever extends beyond the winding side of the sheave b , and is bent horizontally, so as to embrace the edge or periphery of the said sheave. The shape of the lever and its position with respect to the sheave b is best seen in Fig. 3. The lever d d^2 is capable of turning in a vertical plane on the center d^3 , so that the longer arm d may be raised toward a vertical position, as indicated in dotted lines. When the lever is free to move the weight of its longer arm brings it into a horizontal position, beyond which position the longer arm is prevented from descending by a stop at g , which limits the upward motion of the short arm. The inner face of the longer arm of the lever is concave, or has a groove nearly resembling that in the edge of the sheave, and at

the center of the said groove is a roughened or serrated rib, e , which constitutes the gripping part of the lever. When the longer arm d of the lever is in its normal position its gripping end, although embracing the edge of the sheave, is not in contact with it or with the rope or cord; but when the longer arm of the lever is raised toward a vertical position, as indicated in dotted lines in Fig. 2, the eccentricity of its axis d^3 to the axis b^2 of the sheave b brings the gripping end of the longer arm d nearer to the periphery of the sheave b , and causes the central gripping-rib e of the said gripping end to gripe the rope or cord and arrest its motion. When the rope on the hauling or winding side c^2 is pulled downward, so as to raise any weight or heavy body, no obstruction is offered by the lever d d^2 e to its motion, nor is any obstruction offered to the motion of the cord in the opposite direction so long as the cord on the hauling side c^2 is vertical; but when the rope on the said hauling side c^2 is brought out of a vertical position, so as to make a small angle therewith, as indicated in dotted lines in Fig. 2, it comes in contact with the gripping end of the lever, and by now paying out the cord the said gripping end of the lever is carried upward, and its gripping action brought into play, and the motion of the rope arrested. In this way the descent of the weight or heavy body may be checked at any point; or a cord, f , may be fastened to the short arm d^2 of the lever d d^2 , by the pulling down of which cord the longer arm d of the said lever may be raised, and its gripping-power brought into play; or one of the said levers may be applied to each of the sheaves of a compound pulley-block; or the end of one lever may be extended the whole length of a barrel or drum to operate upon every coil simultaneously of the rope thereon. In order to effect or assist the return of the lever to its horizontal or normal position, a spring or springs may be employed to press it downward.

When my invention is to be applied to a pulley having a chain gearing therewith by means of teeth or otherwise, or when the rope, chain, or band is in any way engaged with the

sheave, the gripping end of the lever may be formed to press frictionally only on the rim of the sheave; or it may press upon the rope, as before described.

The apparatus described may be applied to both sides of the same pulley-block, so that either end of the rope or chain may be employed to carry the load.

Having now described the nature of my invention, and the manner in which the same is to be performed, I wish it to be understood that I claim as my invention—

The combination, with the sheave *b* and pulley block or frame *a*, of the lever *d d'*, pivoted to the block below, and eccentrically of the axis of the sheave, whereby the rope and sheave are allowed free motion when said lever is at rest, and are gripped by it when its long arm is elevated, substantially as and for the purpose set forth.

THOMAS ALDRIDGE WESTON.

Witnesses:

RICHARD SKERRETT,
HENRY SKERRETT.