(No Model.)

W. P. WILLIAMS.

LIFTING JACK.

No. 341,086. Patented May 4, 1886.

Fig. 2.

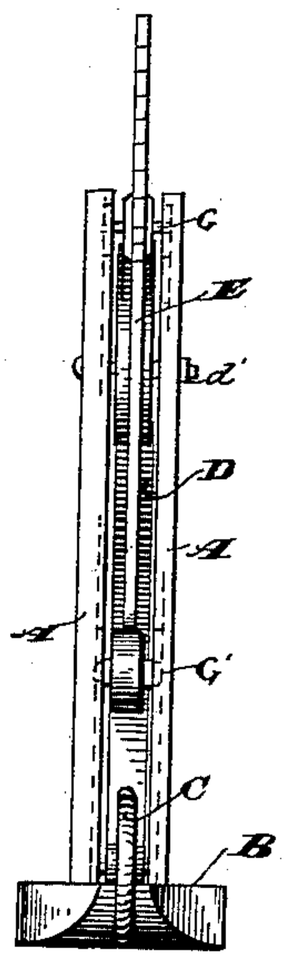


Fig. 1.

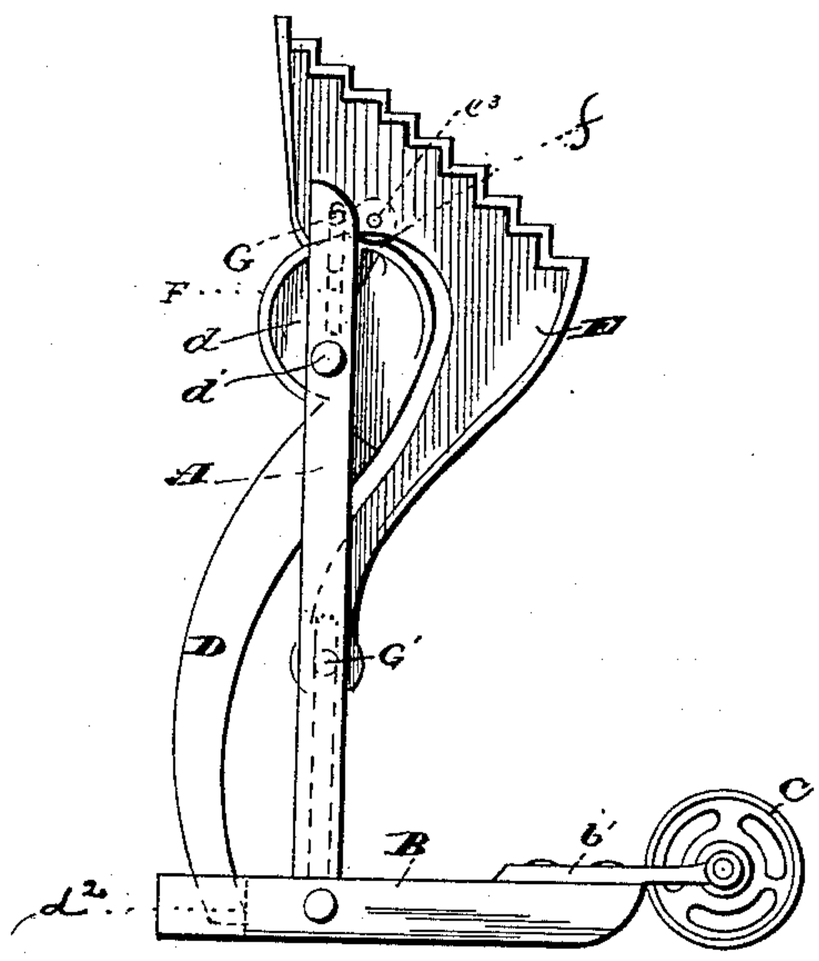


Fig. 3.

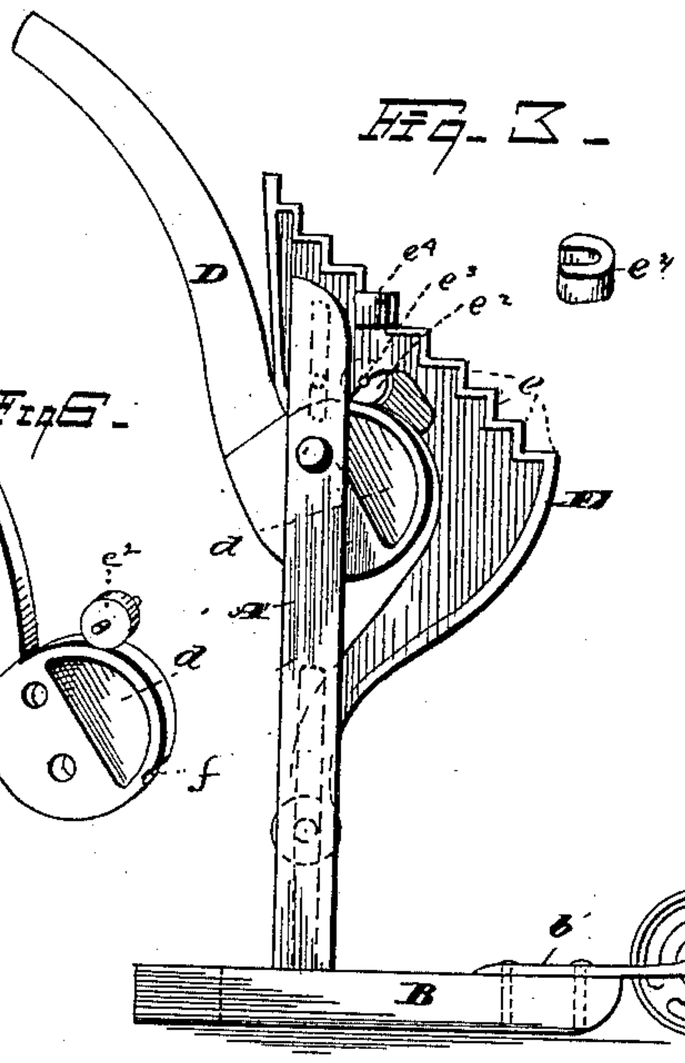


Fig. 4.

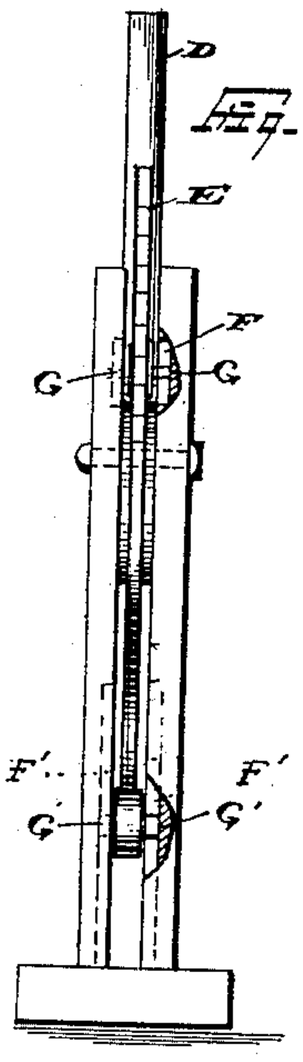


Fig. 5.

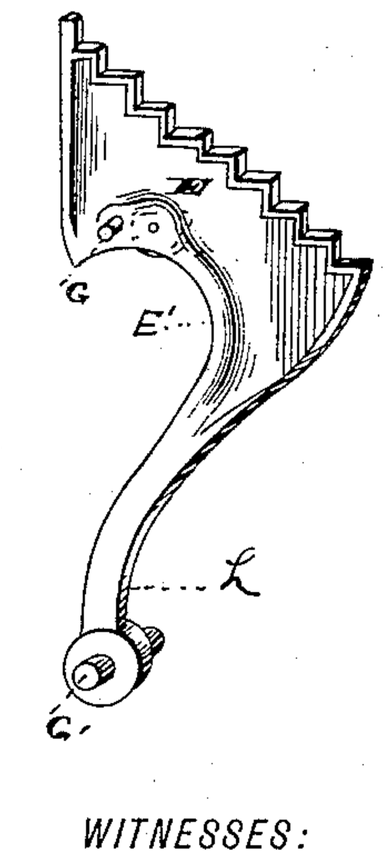
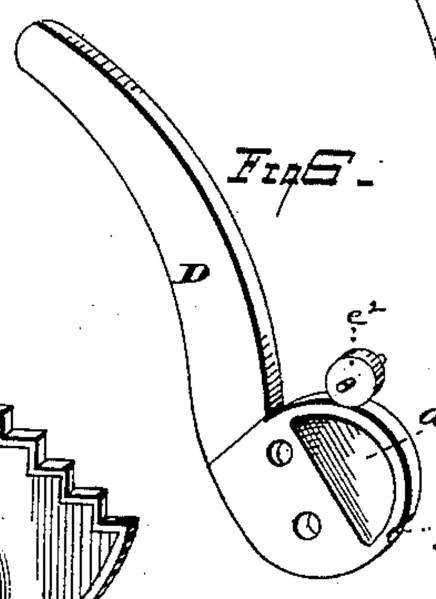


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM P. WILLIAMS, OF CLEVELAND, OHIO.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 341,086, dated May 4, 1886.

Application filed January 30, 1886. Serial No. 190,265. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. WILLIAMS, a citizen of the United States, residing at Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Lifting-Jacks; and I do hereby declare the following to be a description of the same and of the manner of constructing and using the invention, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it appertains to construct and use the same, reference being had to the accompanying drawings, forming a part of the specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle so as to distinguish it from other inventions.

My invention is that of an improvement in lifting-jacks, as hereinafter more fully described.

In the drawings, Figure 1 is a side elevation of the jack, showing the ram lifted by the lever. Fig. 2 is a front elevation looking rearwardly between the standards. Fig. 3 is a side elevation showing the lever lifted and the ram lowered. Fig. 4 is a front elevation with parts broken away. Fig. 5 is a detail view of the ram. Fig. 6 is a detail view of the lever in contact with anti-friction roller.

A are the two upright standards, corresponding with each other in general dimensions, and perpendicularly seated in the base B in a common transverse plane, and located sufficiently apart from each other to permit the introduction and free play between them of lever D and lifting-ram E. Said standards have formed on their inner faces, and transversely opposite to each other, the two sets of oblong perpendicular slots F F′, located, respectively, at the upper and lower portions of said standards, for the accommodation of guide-pins, hereinafter mentioned. Into base B said standards are mortised and also bolted by bolt *b*. Said base is narrowed at its front end toward a point, where it has attached to it the metallic plate *b′*, having its front end bifurcated. Each fork of said plate is turned into an eye, said eyes being in a direct cross-plane with each other, and in said eyes is journaled wheel C. Said wheel has its lowest outer peripheral surface-point so far elevated above the horizontal plane of the bottom of base B that when said base rests flatly upon its bottom said wheel may not impinge upon the ground or floor under it; but when said base is lifted in a tilt toward its forward end then said wheel bears upon the ground or floor and affords a convenient means of movement.

D is a lever, with eccentric cam *d*, eccentrically fulcrumed between the standards by bolts *d′*, and with its arm rearwardly extending. The major part of said cam projects forward of the perpendicular plane of the standards, and the said arm is of such a length that it swings clear at its extreme outward end, d^2, of the ground or floor when it is pushed so far inward toward the base as to lift the ram to its highest desired or practicable point between the standards by means of the said cam. On the exterior peripheral surface of said cam, and at a point contiguous to the vertical interior plane of the standards, when ram E is lifted by said cam to its highest desired or practicable pitch, is formed the transverse furrow *f*.

E, the lifting-ram, is seated between the standards, and has its forward upper portion formed on an incline forwardly, said incline provided with notches *e*, having their bottom faces at right angles to the perpendicular of the standards. Said notches I provide with india-rubber padding e^4, to protect the vehicle-axle from scratches or defacement. The middle portion of the ram is provided with the horizontal recess E′, to permit the play in it of cam *d*. Said recess extends toward the forward edge of the ram, and also reaches transversely through said portion. The lower portion of said ram is narrowed into arm *h*, which is also located between the standards. Said arm is provided with laterally-projecting pins G′, which work in slots F′, and act as guides to said arm. The upper portion of the ram, bearing more directly upon the cam, is provided with laterally-projecting pins G, which work in slots F and act as guides to said upper portion of the ram. On the inner peripheral surface of said ram, at a point contiguous to the vertical forward plane of the standards, is inserted, by means of a slot in said surface, the anti-friction wheel e^2, turning on pivot e^3. The bearing of said wheel is upon the exterior peripheral face of cam *d* when the

lever D is lifted and the ram is lowered, and continues such bearing during the depression of the lever and the elevation of the ram until furrow *f* reaches the wheel. At that juncture, and by reason of the adequate depth of said furrow, the wheel loses its immediate contact with the face of the cam, and the ram rests directly down upon other portions of the cam and in a plane so vertically coincident with the vertical plane of the standards that the ram and the cam are thereby locked stationarily together. Said locking is complete and firm, sufficient to resist the incident pressure of any vehicle otherwise tending to run the ram down. The said wheel e^2, located and operating upon the face of the cam, as described, so far intercepts and obviates the direct friction of the cam and the ram together as to render the lifting process of a vehicle by the ram very easy, so much so as, also, to render unnecessary extended length of lever-handle.

A short handle is not only permissible in my jack, but also necessary for the locking of the ram and the cam together, as described.

By reason of the two sets of pins G G′ on the ram working in the two slots F F′ the movement of the ram is rigidly restricted to the vertical, with no forward or backward swing. Thus it will be seen that my device is alike simple in construction, efficient in operation, firm and strong in its build, and very convenient for handling and moving.

What therefore I claim is—

1. In a lifting-jack, the combination, with upright posts provided with guide-slots and a ram provided with guide-pins working in said slots, said ram formed with an oval-shaped recess rearwardly open and extending transversely through the body of the ram, of a cam working in said recess and eccentrically pivoted to said posts, substantially as set forth.

2. In a lifting-jack, the combination, with uprights provided with two sets of guide-slots, one of said sets located near the top of said uprights and the other of said sets located toward the bottom of said uprights, of a ram having two distinct sets of guide-pins working, respectively, in said slots, said sets of pins locally separate from each other by a rearwardly-open oval recess formed in the body of said ram, substantially as set forth.

3. In a lifting-jack, the combination, with ram E, provided on its inner edge with anti-friction-roller wheel e^2, of cam *d*, provided on its interior peripheral surface with transverse furrow *f*, said furrow of depth relative to the roller, substantially as set forth, whereby said wheel fits in said furrow clear of bearing thereon, substantially as set forth.

4. A lifting-jack having base B, fitted with wheel C, uprights A, notched ram E, with its middle portion formed with the open semicircular horizontal recess E′, extending transversely through said portion, cam-lever D, slots F F′, and guide-pins G G′, all substantially as set forth.

5. The combination, with standards A, provided with slots F F′, of ram E, provided with guide-pins G G′, located on said ram and operating in said slots, substantially as set forth.

In testimony that I claim the foregoing to be my invention I have hereunto set my hand this 24th day of January, A. D. 1886.

WILLIAM P. WILLIAMS.

Witnesses:
M. H. NASON,
O. B. BELDING.