# J.C. Cole,

## Lifting Jack.

No. 12,288. Patented Jan. 23, 1855.

Fig. 1

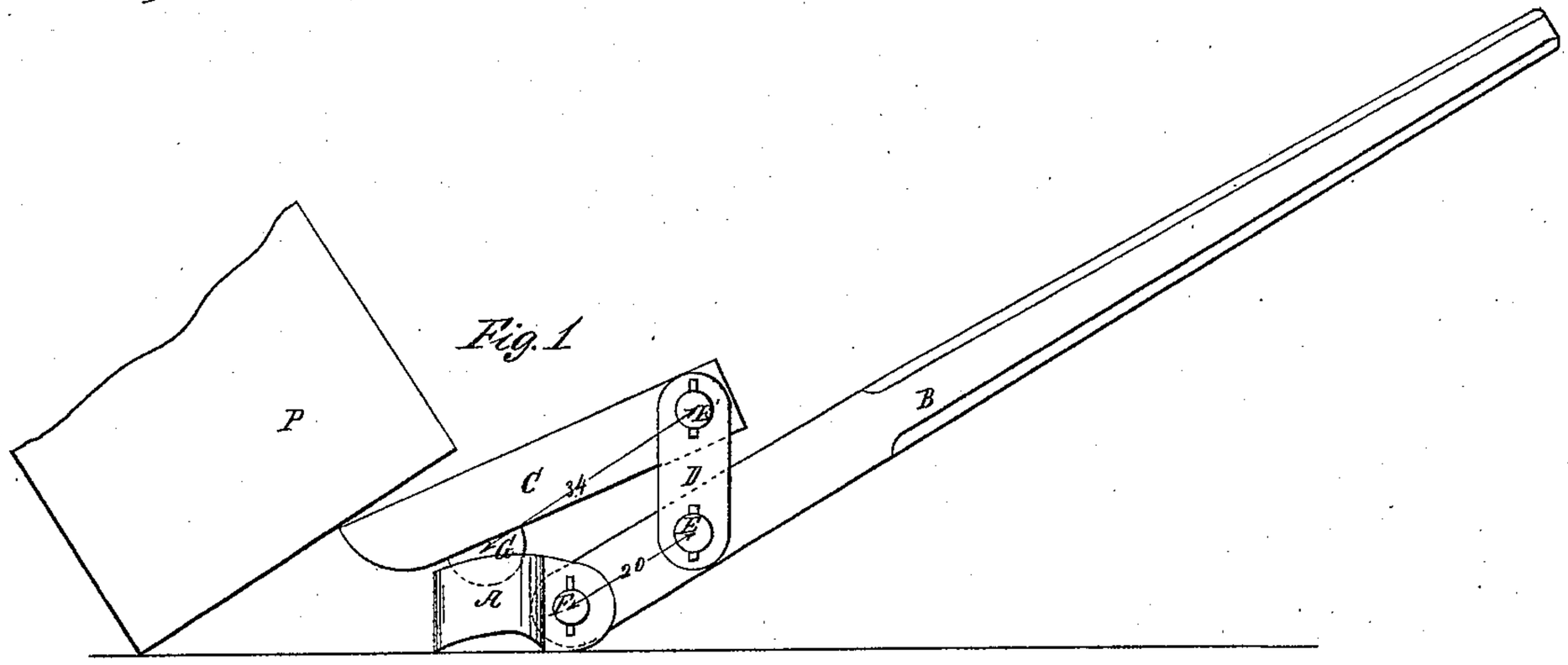
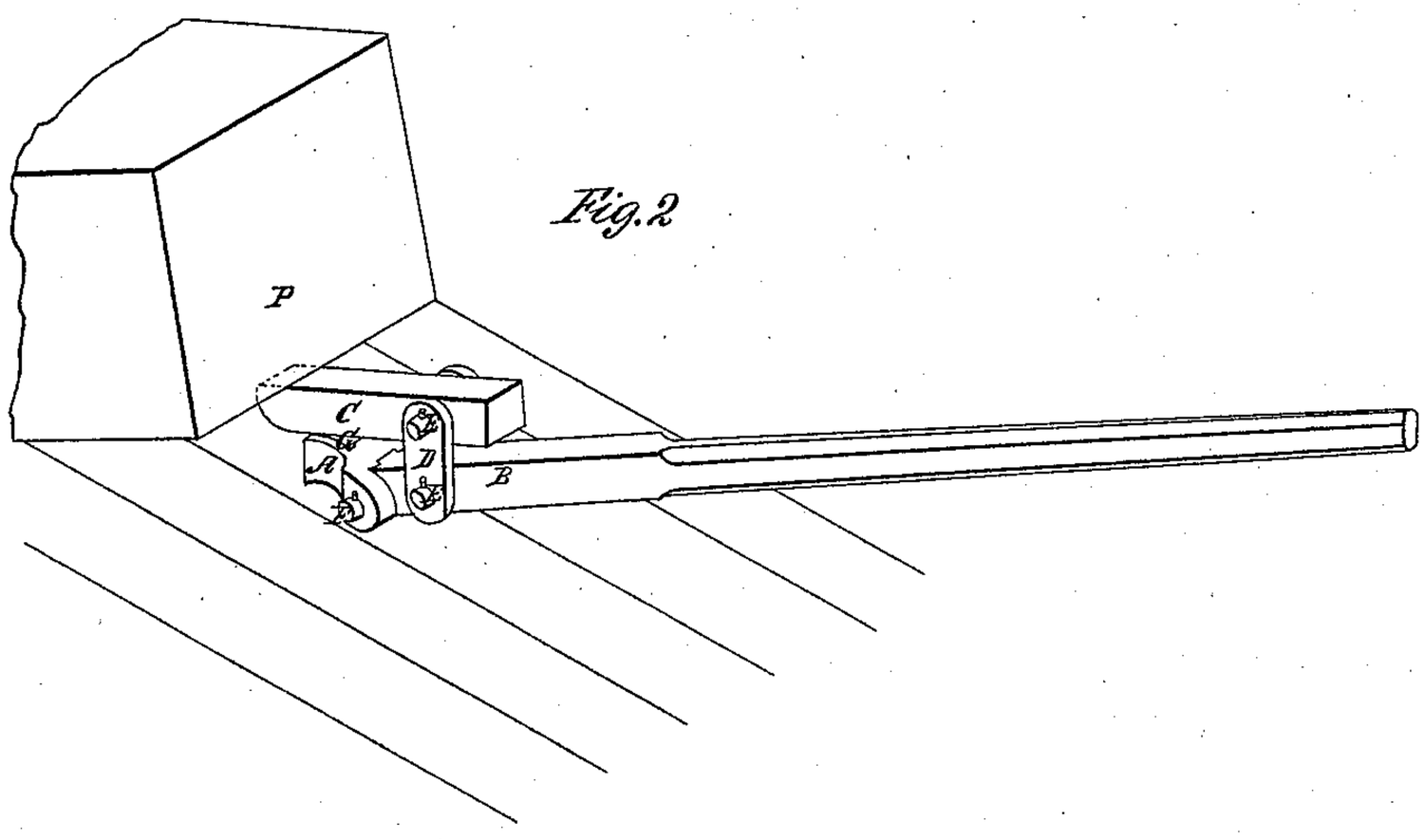



Fig. 2



# UNITED STATES PATENT OFFICE.

ISAAC J. COLE, OF PIERMONT, NEW YORK.

## COMPOUND CROWBAR.

Specification of Letters Patent No. 12,288, dated January 23, 1855.

*To all whom it may concern:*

Be it known that I, ISAAC J. COLE, of Piermont, Rockland county, State of New York, have invented a new and useful Improvement in Compound Crowbars; and I do hereby declare that the following is a full, clear, and exact description of the same.

The nature of my improvement consists in providing a short lever of the first order, and a long lever of the second order, and in arranging the short lever above the long one, in such manner that the fulcrums of both fall on one head block, the latter extremity of the short lever being attached to the long lever by straps.

To enable others skilled in the art to make and use my improvement, I will proceed to describe its construction and operation, reference being had to the annexed drawings forming a part of this specification, in which—

Figure 1, is a side elevation of my improvement, enlarged. Fig. 2, a perspective view.

Similar letters of reference indicate corresponding parts in the two figures.

A is the head block, B long lever of the second order, C short lever of the first order, D connecting straps, E, E′, pins of the same, F pin which attaches lever B to head block, G socket of lever C, P burden to be raised.

In the construction of my improved compound crow bar, I provide a head block A, to the after end of which I attach the long lever B, by means of pin F, which forms the fulcrum of B. The short lever C is placed above, its forward end being provided with a circular socket G which turns in a corresponding cavity in the top of the head rest block, G being also the fulcrum of C. The after end of C is attached to lever B, by means of straps D, and pins E, E′. In the short lever C the fulcrum comes between the power and the weight, rendering it a lever of the first order. In the long lever the weight comes between the fulcrum and the power, rendering it a lever of the second order.

The gain in power by the use of my compound crow bar over the common straight crow bar, is in proportion to the difference in the distance between the fulcrum at F and weight at E and the distance from the fulcrum at G to the power at E′. The distance from F to E is represented at 20, and from C to E′ at 34, being an increased advantage of seven-tenths in favor of my improvement over the common bar. With one of my bars therefore a man can raise nearly twice as heavy a weight, as he is enabled to by the use of an ordinary bar of the same length.

My improvement is particularly designed for use on rail roads, in assisting to lift the wheels of locomotives when off the track. In the use of the common bar in prying up such heavy bodies, the fulcrum block has a tendency to slip back and interfere with operations. But by the arrangement of my bar, no such slipping can take place, for any tendency in the head block A to slip back, when the end of short lever C is applied beneath the wheel, is counteracted by the pushing forward of the lever B, as it comes down; therefore the head rest, A (which is a fulcrum block for both levers) is always retained in its place, with a firmness which is increased just in proportion as the weight to be lifted is augmented, or as the lifting power is increased.

I am not limited to the precise arrangement here described, for I can employ several other combinations, of parts in substantially the same manner. My improvement may be also used for many other purposes besides those here described. Especially will it prove serviceable to move locomotives, when on the track, without steam. By applying the bar beneath one of the wheels, the locomotive may be easily shoved ahead or back, as desired.

I do not claim the combination of the two levers B, C, as such a combination is well known, but

What I claim as my invention and desire to secure by Letters Patent, is—

The combination of two levers B, C, (the latter having a circular projection G on its lower side),—with the head block A, in the manner and for the purposes substantially as herein set forth.

ISAAC J. COLE.

Witnesses:

B. KIRBY VERBYCK,

JOHN S. VERBYCK.