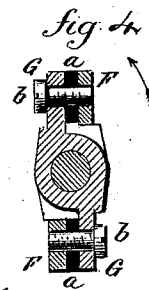
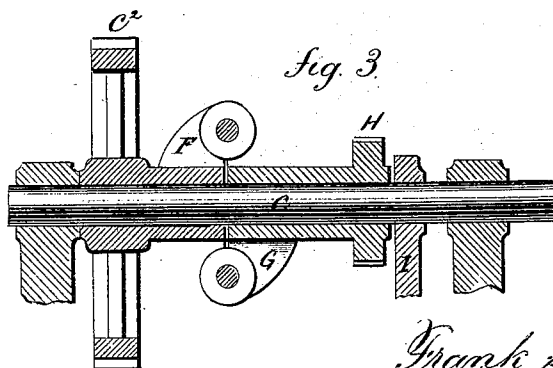
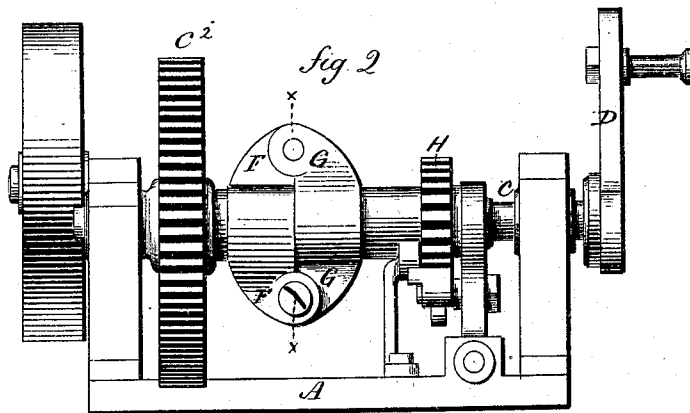
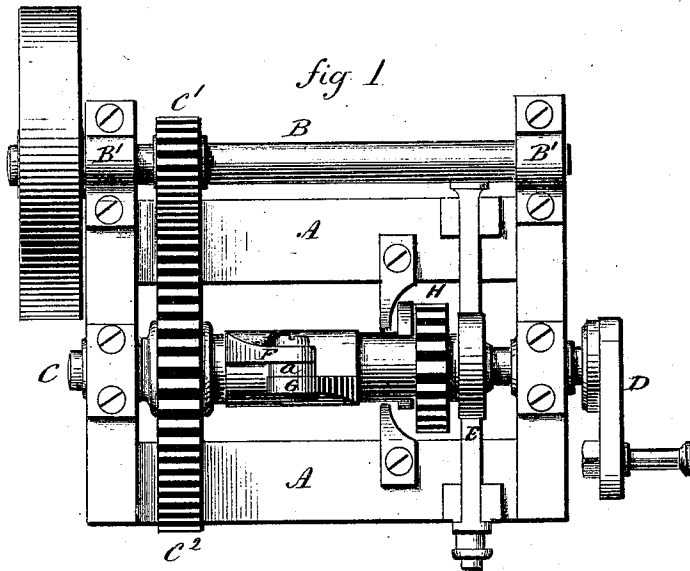


F. SEWARD.  
DROP-LIFTER.

No. 177,164.

Patented May 9, 1876.



Witnesses.  
*J. H. Channing*  
*Clara Broughton.*

*Frank Seward*  
Inventor  
By atty *Wm. D. Earle*

# UNITED STATES PATENT OFFICE.

FRANK SEWARD, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO MILO PECK,  
OF SAME PLACE.

## IMPROVEMENT IN DROP-LIFTERS.

Specification forming part of Letters Patent No. 177,164, dated May 9, 1876; application filed  
April 13, 1876.

*To all whom it may concern:*

Be it known that I, FRANK SEWARD, of New Haven, in the county of New Haven, and State of Connecticut, have invented a new Improvement in Drop-Lifters; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a plan or top view; Fig. 2, a side view; Fig. 3, a longitudinal central section; and in Fig. 4, a transverse section on line *x x*.

This invention relates to an improvement in apparatus for raising drop-hammers, commonly called "drop-lifters."

In this apparatus the connection between the lifting mechanism and the hammer, to raise the hammer, is made instantaneous, and hence brings a great strain upon the mechanism.

The object of this invention is to relieve this sudden strain, and thereby prevent the concussion which usually occurs; and the invention consists in the arrangement of an elastic bearing or clutch between the driving-gear and the lift, as more fully hereinafter described.

The apparatus here shown is that known as the "Peck lifter."

A is the bed; B, the driving shaft, supported in bearings B', and connected to the lifter-shaft C through gears C<sup>1</sup> C<sup>2</sup>. To the shaft C the lifter-crank D is rigidly attached, and with suitable tripping mechanism E, substantially as in the usual construction. The gear C<sup>2</sup> is loose upon the shaft C, and in connection with this gear, or made as part of it, are two arms, F F, and attached to the ratchet or lifting device H, and also loose upon the shaft C, are two corresponding arms, G G. The ends of these arms are turned so that the arms F come in rear of the

corresponding ends of the arms G, as seen in Figs. 1, 2, and 4; hence the driven gear C<sup>2</sup> will communicate its motion to the ratchet H through the arms F F bearing against or coming in contact with the corresponding arms G. Between the meeting surfaces of these arms an elastic material, *a*, is applied, and preferably a bolt, *b*, to connect the two arms, as seen in Fig. 4. The gear C<sup>2</sup> and the ratchet or lifter H revolve continuously. The crank which lifts the hammer is held at its up position by the tripping device E, in the usual manner, the gear and ratchet H revolving independently of the shaft while in that condition. When the trip is removed the hammer falls, and instantly on its descent the ratchet H engages with the pawl attached to a lever, I, fast to the shaft, and that engagement raises the hammer in the usual manner.

As the engagement of the ratchet H with the shaft must thus be very sudden, it follows that great strain will be produced upon the mechanism in thus instantly raising the hammer.

By the interposition of the elastic material *a* between the arms F and G, that material yields upon the first concussion, and thus prevents the extreme shock which would otherwise occur. Therefore, by separating the lifting ratchet H from the driving-gear, and interposing this elastic material, the liability to the breakage of the machinery by the sudden concussion in raising the hammer is avoided.

The elastic material is best made of rubber; but it may be a metallic spring.

I claim—

In a drop-lifter the elastic material or spring arranged between the driving-gear and the lifting mechanism, substantially as described.

FRANK SEWARD.

Witnesses:

J. H. SHUMWAY,  
CLARA BROUGHTON.