

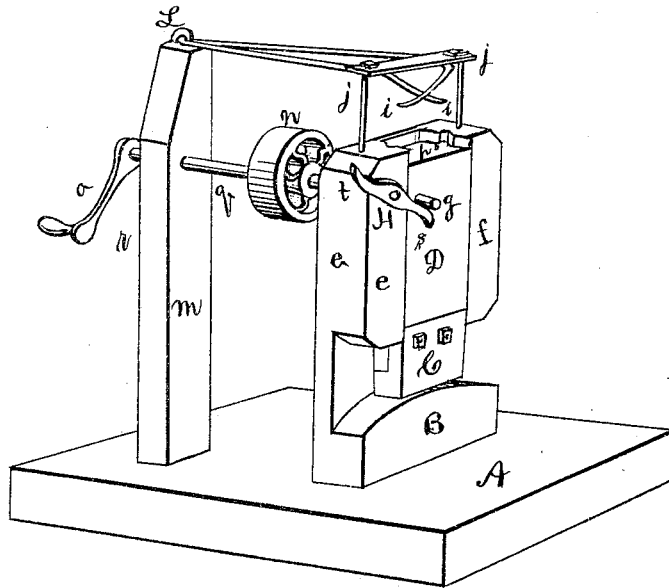
*Patented Feb. 21, 1871.*

*Tryt Hammer.*

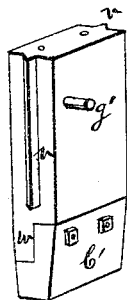
No. 112,036.

*Patented Feb. 21, 1871.*

*Fig. II.*



*Fig. 2.*



Witnesses;

Dr. W. Wetmore  
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# United States Patent Office.

BENJAMIN HERSHEY OF ERIE, PENNSYLVANIA.

Letters Patent No. 112,036, dated February 21, 1871.

## IMPROVEMENT IN TRIP-HAMMERS.

The Schedule referred to in these Letters Patent and making part of the same.

I, BENJAMIN HERSHEY, of Erie, in the county of Erie and State of Pennsylvania, have invented certain Improvements in Power-Hammers, of which the following is a specification.

The nature of my invention consists in so securing in a suitable frame, a power drop-hammer, a torsional spring, and a horizontal shaft, having an S-shaped cam attached, that the cam shall elevate the hammer, and the spring shall, through its torsional action, throw it with its full force and power on the anvil, substantially as hereinafter described.

Figure 1, a perspective view of the machine.

Figure 2, a view of the hammer.

A, bed-plate of the machine.

B, the anvil.

C, die of the hammer D.

e f, frame and slides for the hammer.

g, pin by which the cam lifts the hammer.

H, double cam. This is S-shaped. It is so constructed and placed as to take the hammer on the rebound from the anvil.

i j L, torsion spring.

m, standard to hold the spring and shaft q.

n, belt-pulley for driving the shaft.

o, crank to drive the shaft by hand.

p, upper end of the hammer covered with a steel plate for the ends i i of the spring to slide on.

q, driving-shaft by which the cam H is operated.

s t, ends of the cam.

v, tongues to hold the hammer in its slides.

The operation is as follows:

The hammer is represented in fig. 1 at rest on the anvil. The shaft q is revolved by the crank o or by the pulley n, the crank moving toward r. The cam lifts the hammer by the pin g until the end p presses the ends of the springs i i, and compresses it sufficiently for the end of the cam s to pass the pin. The hammer is then started by the quick energy of the spring, and strikes the anvil B an effective blow. The arm t comes to the pin on the rebound, and produces a second blow for the revolution of the crank.

The S-shape of the cam gives the best lifting power when it first strikes the pin g. The arm s of the cam rises above the horizontal line before the hammer strikes the spring. The distance traveled by s then increases for a given distance of rise in the hammer. By this fact, as well as the shape of the cam, the force to compress the spring and raise the hammer increases with the resistance of the spring.

The die C, fig. 2, is fastened to the hammer by the ordinary splice-notch w. This formation gives the simple area of the cross-section of the hammer to support the die. The fastenings are simple and accessible.

I claim as my invention—

The combination of the torsional spring L, S-shaped cam H, and drop-hammer D C, when the same are arranged, and operate substantially as described.

BENJ. HERSHEY.

Witnesses:

J. W. WETMORE,

GEO. P. GRIFFITH.