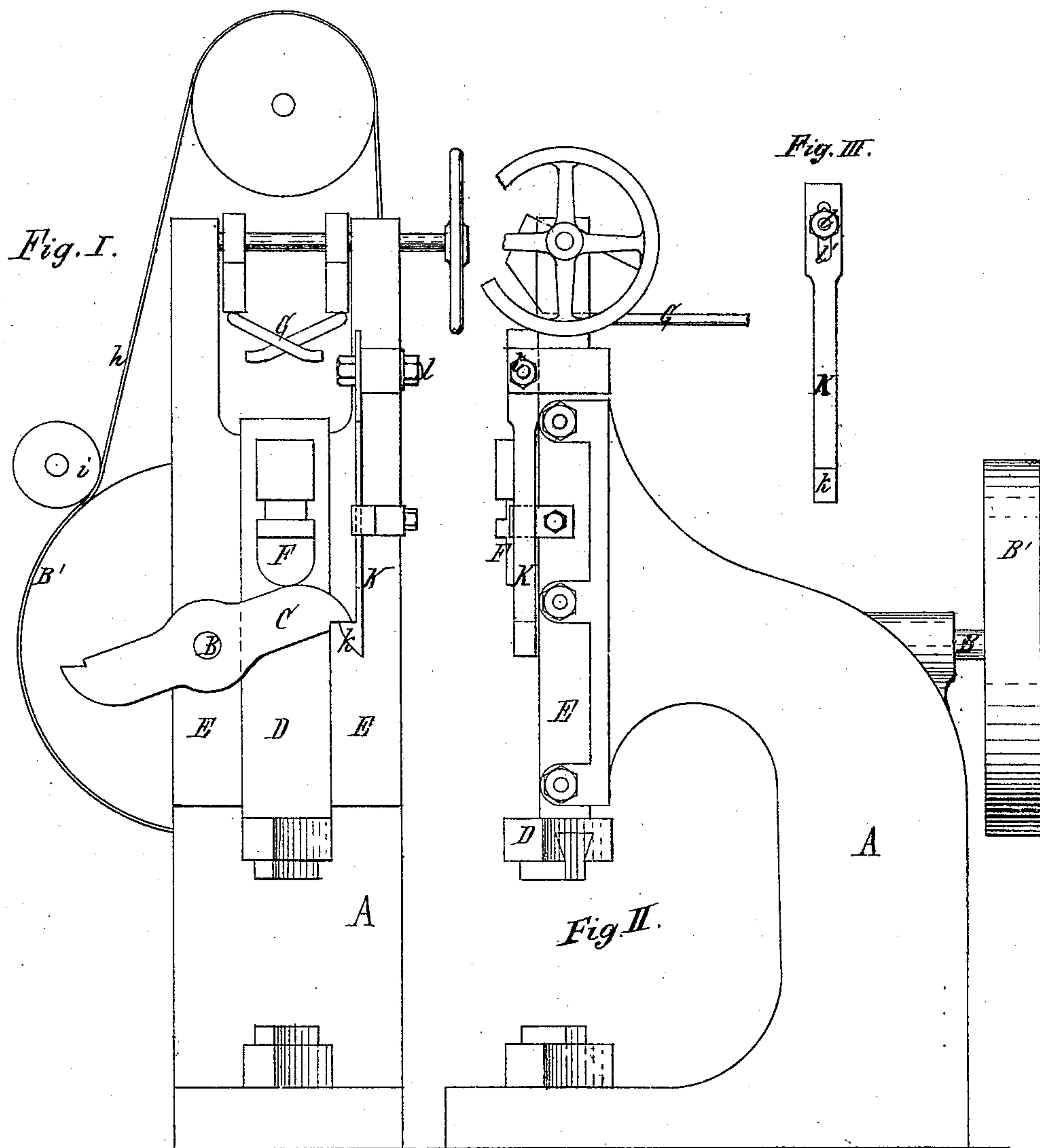


J. NEUBERGER.

Improvement in Trip-Hammers.

No. 132,173.

Patented Oct. 15, 1872.



Edward Wilhelm }  
Walter Oliver } Witnesses.

Joseph Neuberger Inventor  
by Jay Hyatt atty

# UNITED STATES PATENT OFFICE.

JOSEPH NEUBERGER, OF BUFFALO, NEW YORK, ASSIGNOR TO HIMSELF  
AND AUGUSTUS F. TRIPP, OF SAME PLACE.

## IMPROVEMENT IN TRIP-HAMMERS.

Specification forming part of Letters Patent No. 132,173, dated October 15, 1872.

*To all whom it may concern:*

Be it known that I, JOSEPH NEUBERGER, of the city of Buffalo, in the county of Erie, and State of New York, have invented a certain Improvement in Trip-Hammers, of which the following is a specification:

My invention relates to that class of machines in which a hammer, moving between vertical ways or guides, is elevated by a revolving cam against a torsional or other suitable spring, which is compressed during the last portion of the upward stroke of the hammer, and which, by its reaction, forces the latter with great velocity down upon the anvil-block after it is disengaged from the cam. Heretofore when the driving mechanism was thrown out of gear, so as to stop the machine, the hammer would descend by its gravity and rest upon the anvil-block, rendering it impossible to place the heated iron upon the latter before starting the hammer. As machines of this kind are operated with great speed the length of time intervening between the raising of the hammer from the anvil and its downward stroke is insufficient to properly place the heated iron upon the die secured in the anvil-block, whereby a great many pieces are imperfectly formed and time and material lost. To remedy this defect is the object of my invention; which consists in the combination, with the revolving elevating cam of a trip-hammer, of a spring-catch or stop arranged so as to allow the cam to freely rotate when the machine is in operation, while engaging with the cam and preventing reverse movement thereof, as the hammer tends to descend, when the driving mechanism is thrown out of gear during the upward stroke of the hammer and before the cam has been disengaged from the latter, thereby retaining the hammer at a suitable distance above the anvil-block when the machine is at rest, and enabling the operator to properly place the iron to be forged upon the die before setting the machine in motion.

In the accompanying drawing, Figure I is a front elevation, and Fig. II a side elevation of a trip-hammer provided with my improvement; Fig. III is a side view of the spring-catch.

Like letters designate like parts in each of the figures.

A is the main frame of the machine, B the

driving-shaft, B' the driving-pulley, C the revolving cam by which the hammer is elevated, D the hammer moving between vertical ways E, F the bearing-block attached to the hammer and engaging with the cam C, and G the torsional or other suitable springs by which the force of the blow is increased. Motion is transmitted to the pulley B' by means of a loose belt, *h*, and tightening-pulley *i*. All of these parts are old and well known. K is the spring-catch or stop by which the hammer is retained in an elevated position when at rest. It consists of a flat spring-arm provided at its lower end with a head, *k*, the upper side of which presents a square shoulder while the side next to the cam C is made inclined or curved, as shown in Fig. I. The upper end of the spring-arm is secured to the frame A by a bolt, *l*, passing through a vertical slot, *l'*. When the hammer is in operation the spring-catch K does not present any obstruction to the revolving cam C, the latter striking with its rounded side the inclined side of the head *k* and, forcing the latter outward, passes by the same. When the driving mechanism is thrown out of gear during the upward stroke of the hammer, and before the cam has been disengaged from the latter, the hammer descends by its gravity, reversing the cam C, when the latter engages with the square shoulder of the catch, whereby the cam and hammer are locked in this position, as clearly shown in Fig. I. The cam C is preferably notched at the corners of its straight portions, as shown in Fig. I, to better engage with the square shoulder of the catch K. The distance at which the hammer is held above the anvil-block is regulated by means of the screw-bolt *l* and slot *l'*. It is obvious that the spring-catch may be reversed and arranged to engage with the opposite end of the cam, but I prefer the arrangement above described.

I claim as my invention—

The combination, with the revolving elevating cam of a trip-hammer, of the spring-catch K for retaining the hammer in an elevated position when at rest, substantially as hereinbefore set forth.

JOSEPH NEUBERGER.

Witnesses:

EDWARD WILHELM,  
WALTER D. OLIVER.