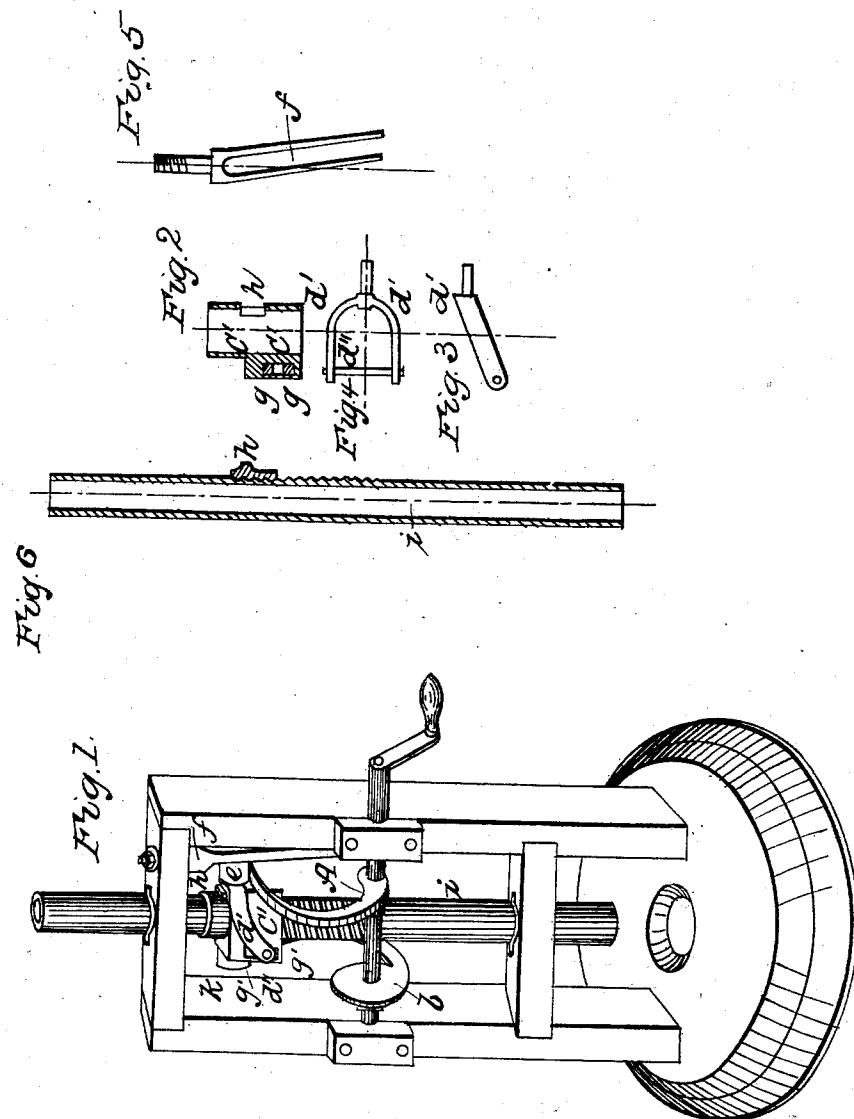


J. B. WAYNE.

Rock Breaking Machine.

No. 41,585.

Patented Feb. 9, 1864.



Witnesses  
W. H. Barndge  
A. W. McLellan

Inventor  
J. B. Wayne

# UNITED STATES PATENT OFFICE.

JAMES B. WAYNE, OF DETROIT, MICHIGAN, ASSIGNOR TO HIMSELF AND HENRY M. ROBINSON.

## IMPROVEMENT IN ROCK-BREAKING MACHINES.

Specification forming part of Letters Patent No. 41,585, dated February 9, 1864.

*To all whom it may concern:*

Be it known that I, JAMES B. WAYNE, of Detroit, in the county of Wayne, in the State of Michigan, have invented a new and useful Improvement in the Manner of Gripping Rods used for Rock-Breaking, Stamping, or Crushing Purposes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a perspective view of model of machine. Fig. 2 is a section of sleeve. Fig. 3 is a side view of link. Fig. 4 is a top view of link. Fig. 5 is an end view of the guide. Fig. 6 is a longitudinal section of corrugated rod and corrugated die.

A, Fig. 1, is the lifting-cam; b, the lowering-down cam; c', the sleeve; d', the link; d'', the pin in link d'; e, the roller on end of link d'. f is the guide; g g, the cushions, of india-rubber, in slot c'', one above and one below the pin d''; h, the corrugated die set free in an opening in the sleeve c'; i, the rod or stem; k, a roller. The motion of the cam A on its axis acts against the roller e on end of link d', and produces a horizontal motion to the corrugated die h against the corrugated part of the rod i, pressing firmly against it, causing the pin d' to rest against the yielding cushions g g until the corrugations are firmly locked together, and then during the time the rod is being lifted it pulls the link d' against the inside of slot c'' in sleeve c'. When the cam A has lifted the stem i, with sleeve c', to its utmost limit and passed by the center of the roller e, the link d' becomes free to drop and the corrugated die h is forced back by the weight of the descending rod i, so as to be ready for succeeding lift at the next revolution of the cam A. When the sleeve c' has

thus become free on the rod i, the lowering-down cam presents itself under the roller k, and allows the sleeve c' to descend on the rod i in an easy manner, so as to be ready for another lift of cam A in its revolution.

I know that machines are now in use breaking rock and crushing ores. I therefore do not claim the machine as a whole; but

What I do claim are improvements, as follows:

1. The use of a separate lowering-down cam, b, Fig. 1, substantially as described, for lowering down the clutch c'.

2. The link d', Fig. 1, or its equivalent, in connection with the sleeve c', one end pressing against the die h in an upward direction and the other end fitted with a pin, d'', resting on cushions g g, of india-rubber, or their equivalent, and pulling against the sleeve c', thereby avoiding any outward or breaking strain on sleeve c', but producing an inward pressure at each end of link d', substantially as described.

3. The use of roller e, Fig. 1, in connection with link d' and lowering down cam b, thereby destroying the tendency to friction, as is the case in working against a flat surface as in use now.

4. The use of inclined guide f, Fig. 5, thereby allowing the rod or stem i, Fig. 1, to move on its axis at every upward motion of the same by action of cam A, substantially as described.

5. The use of corrugated die h, Fig. 6, in connection with sleeve c' and link d', Fig. 1, substantially as described.

JAMES B. WAYNE.

Witnesses:

W. H. BURRIDGE,  
J. BRAINERD.