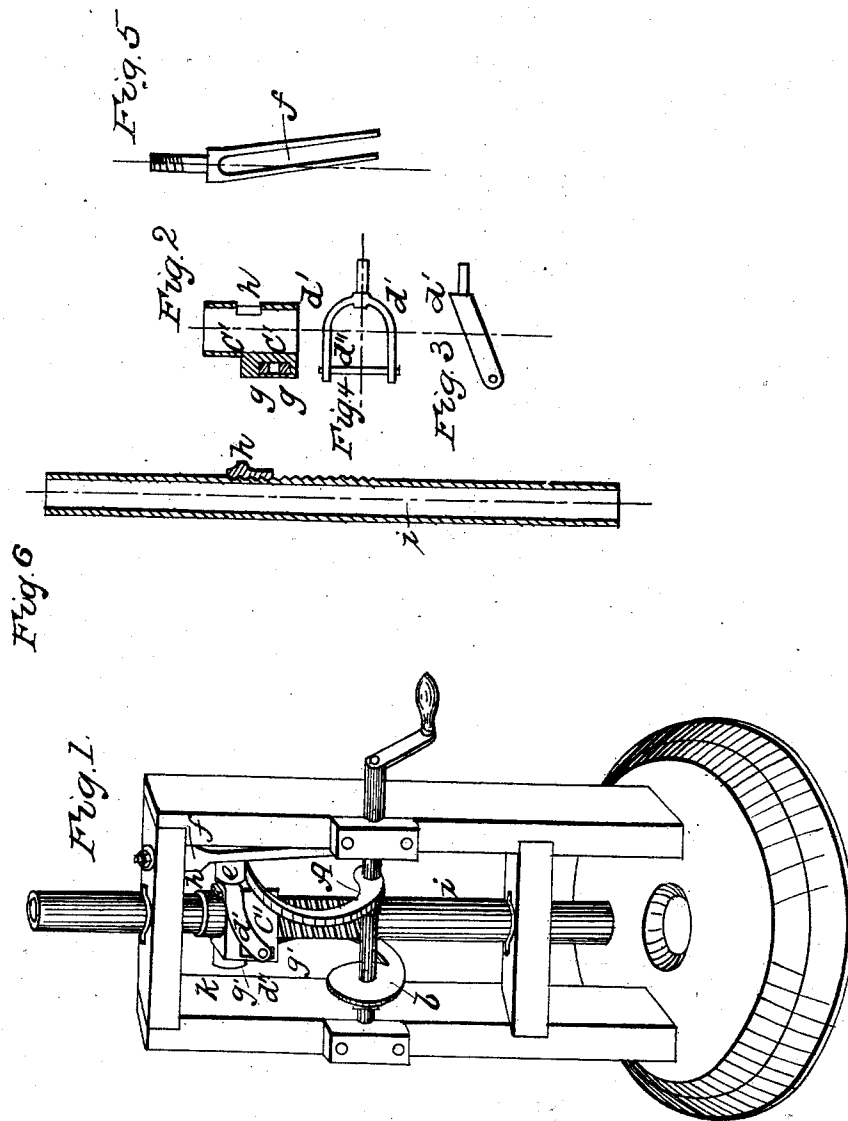


J. B. WAYNE.
Rock Breaking Machine.

No. 41,585.

Patented Feb. 9, 1864.



Witnesses
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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.

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Witnesses:

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