

W. J. GAMBLE.

POWER HAMMER.

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1,151,005.

Patented Aug. 24, 1915.

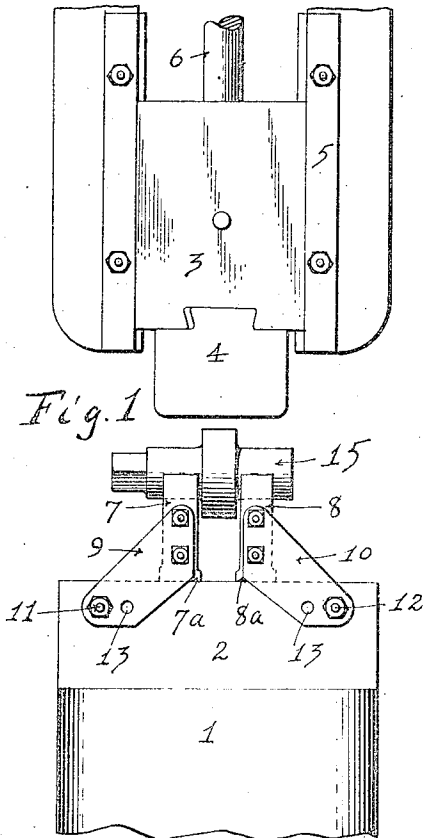


Fig. 1

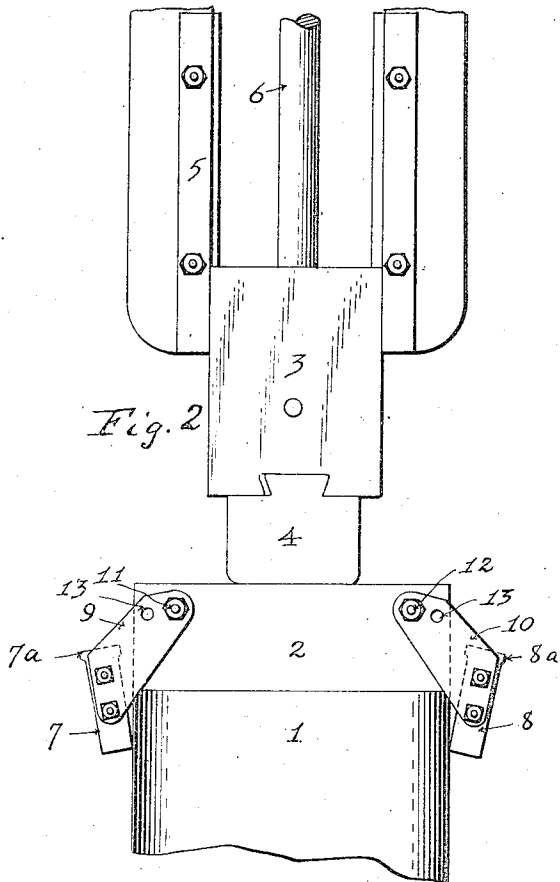


Fig. 2

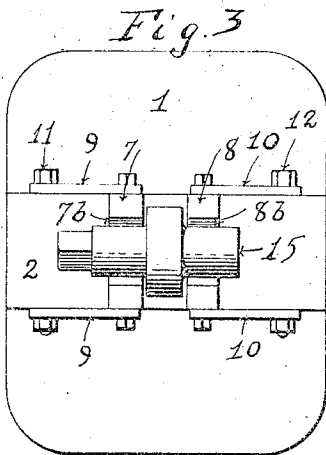


Fig. 3

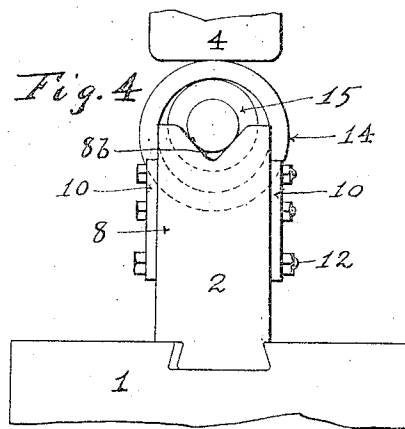


Fig. 4

WITNESSES:

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POWER-HAMMER.

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To all whom it may concern:

Be it known that I, WILLIAM J. GAMBLE, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a certain new and useful Improvement in Power-Hammers, of which the following is a specification.

My invention relates to improvements in power hammers.

More particularly it relates to mandrel supports for power hammers for making hollow forgings and the like which are auxiliary to and adjustable upon the anvil die of a standard straight-faced hammer, so that the hammer may be used either for straight work or for forming hollow or other irregular-shaped forgings.

The objects of my invention are to provide adjustable and removable mandrel supports or standards which may be swung into position upon an anvil die of standard straight faced type to receive and support a mandrel over which a hollow or other forging made over a mandrel can be made in a standard power hammer without the necessity of having a special die or support, which standards are adjustable to mandrels of different lengths, and which may be swung out of the way so that the hammer may be used for straight work without any change of dies.

In the accompanying drawings I have shown a typical embodiment of my invention adapted to hollow or ring forgings, the hammer being a steam-hammer or other type of power hammer.

In the drawings, Figure 1 is a front elevation showing the mandrel supports in place for use and a mandrel in position. Fig. 2 shows the same view with the mandrel supports swung out of operative position so that the hammer may be used as a straight hammer. Fig. 3 is a plan view of the anvil die, mandrel supports and a mandrel in place. Fig. 4 is a side elevation, right-hand to Fig. 1, showing the mandrel supports in operative position and a mandrel in place with a piece of metal in place ready for operation.

The anvil 1 has a standard anvil die 2 mounted upon it in the usual manner. A power hammer 3 having a hammer die 4 is mounted in guides 5 and is actuated by a piston 6 in the usual manner.

The mandrel supports or standards 7 and 8 have preferably enlarged bases 7^a and 8^a,

and have their upper ends notched or recessed, as shown at 7^b and 8^b, to receive a mandrel 15.

Rigidly secured to these standards 7 and 8 are plates or yokes 9 and 10 which are pivotally secured to the anvil die 2, front and back, by means of bolts 11 and 12, the die 2 having been bored to receive said bolts. The plates 9 and 10 have additional bolt-holes as shown at 13, so that they may be spaced apart to conform to different mandrels and different work. Any desired number of holes may be bored to regulate the spacing, but said holes should all lie in a common horizontal plane when the standards are in operative position so that said standards may at all times stand erect.

In Fig. 4 I have shown at 14 a ring or hollow piece of metal placed over a mandrel and in position to be acted upon by the hammer die 4, it being understood that the work is turned by the operator under the hammer.

As now seen, when the mandrel supports are in position as shown in Fig. 1, such hollow or irregular form forging work may be done with an ordinary power hammer with straight dies without change of the dies; and when it is desired to use the hammer as a straight hammer, all that is necessary is to swing the supports to the position shown in Fig. 2.

By this simple but most effective improvement I am able to increase the range of work; to change from straight work to hollow work or from hollow or irregular work back to straight work with practically no loss of time and no change of dies; and also to adjust the standards to different sorts of work without change of dies or having more than the single pair of supports. And this widening of the range of work of an ordinary hammer and the saving in time in changing from one form to another will be recognized at once as a distinct and valuable improvement upon former methods.

Having thus described my invention, I claim:—

1. In combination with a power hammer having an anvil die, two yoked standards designed to support a mandrel, yokes rigidly secured to the two sides of each of said standards and pivotally and adjustably secured to the anvil die of the hammer and capable of being swung upon their pivots to bring said standards to predetermined posi-

tion upon said die to support a mandrel and of being swung to either side of the anvil to permit performance of straight work.

2. In a power hammer, means for forming
5 hollow forgings and the like comprising two
mandrel standards and a mandrel remov-
ably supported thereby, yokes rigidly se-
cured to the opposite sides of said standards,
10 an anvil die of the straight type and pivots
securing said yokes to the opposite sides of
said die and a die actuated by the hammer
for coacting either with said mandrel to
form hollow forgings and the like or for co-
acting with said anvil die for straight work
15 when said mandrel is removed and said
standards are swung upon their pivots out
of operative position.

3. In combination with a power hammer
having an anvil die, two standards for sup-
porting mandrels, yokes rigidly secured to 20
the opposite sides of each of said standards
and adjustably pivoted to said anvil die to
adapt said standards to mandrels of differ-
ent lengths, whereby said standards may be
swung into position to support a mandrel 25
and adjusted to mandrels of different lengths
and whereby said standards may be swung
out of operative position to permit said die
to be used for straight work.

WILLIAM J. GAMBLE.

Witnesses:

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