

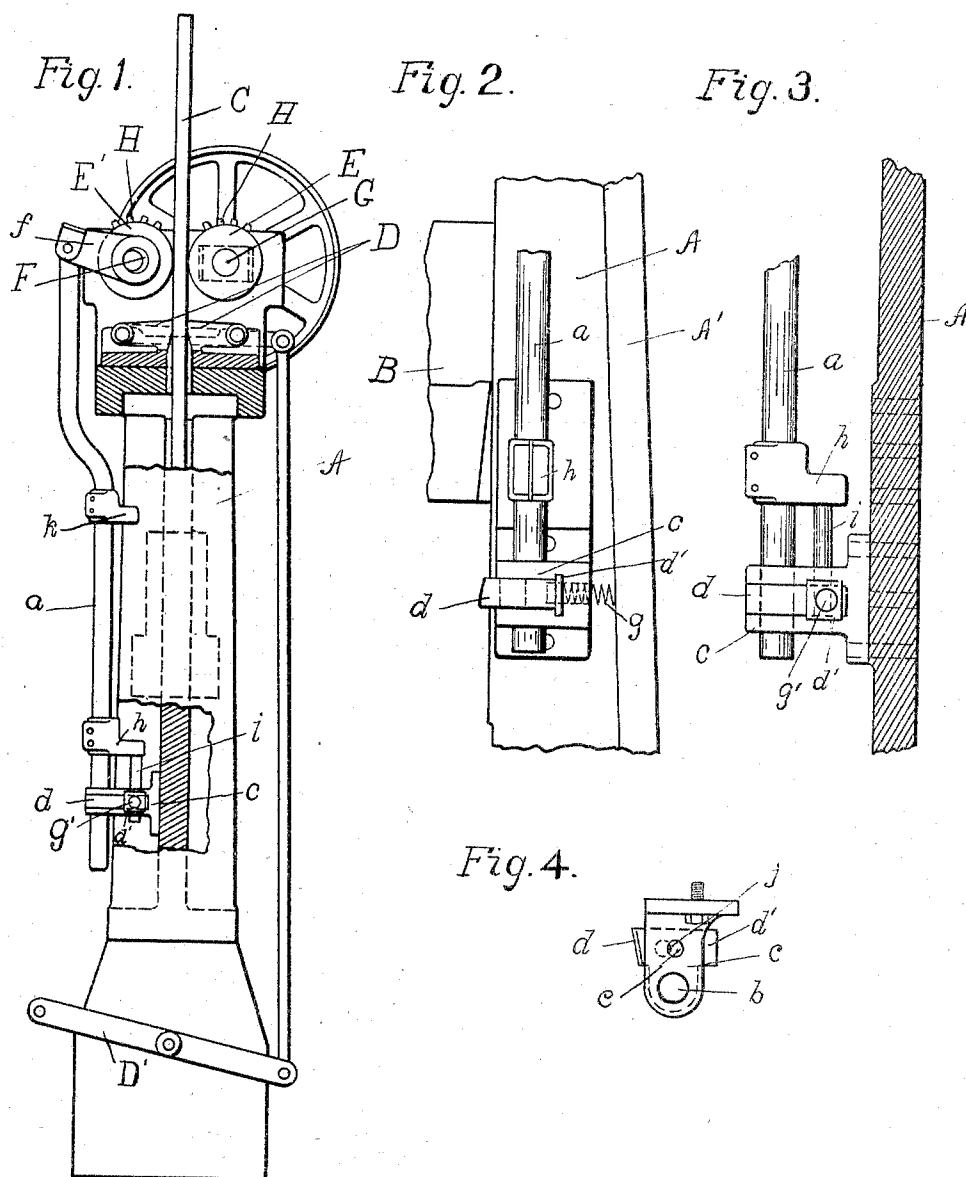
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H. J. HINDE.
CONTROLLING MECHANISM FOR DROP HAMMERS.

APPLICATION FILED FEB. 3, 1904.

NO MODEL.



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CONTROLLING MECHANISM FOR DROP-HAMMERS.

SPECIFICATION forming part of Letters Patent No. 766,950, dated August 9, 1904.

Application filed February 3, 1904. Serial No. 191,781. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. HINDE, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Controlling Mechanism for Drop-Hammers, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in the mechanism employed in forging and drop hammers for controlling the movements of the lifting-rolls, so as to cause an immediate ascent of the hammer-head after its force has been spent on the downward movement.

The object of my invention is to provide means of simplified and improved construction whereby the descent of the hammer-head releases certain parts, so as to bring the lifting-rolls into play and cause an immediate and positive elevation of said hammer-head to its normal position.

The invention is fully described in the following specification and shown in the accompanying drawings, in which—

Figure 1 is a side elevation, partly in vertical section, of a machine embodying my invention and showing the parts in position for elevating the hammer-head. Fig. 2 is a front view of the parts comprising my invention, showing the same in normal inoperative position. Fig. 3 is a side view of the same; and Fig. 4 is a detail plan view of the supporting-bracket and releasing-dog, showing the latter in normal position.

Referring to the drawings, A represents a common form of frame in machines of the class described, B the forging-block or hammer-head, and C the lifting-board, secured to the upper end of said hammer-head. The board C extends upwardly between the locking or retaining clamps D, which are released by pressure on the foot-lever D', and between the oppositely-rotating lifting-rolls E and E', one of which rolls is mounted on an eccentric

bushing F and adapted to be operated to tightly engage said board between said rolls when it is desired to elevate the block B. Motion is imparted to said rolls E and E' through the driven shaft G and the meshing pinions H.

I will now proceed to describe the mechanism which controls the movements of the eccentric bushing F, so as to cause the oppositely-rotating companion rolls E and E' to be automatically operated to tightly engage the lifting-board C and cause the forging-block to be elevated as soon as it has spent its force on the downward stroke, and in the particular features of which my invention resides.

A vertically-disposed plunger-rod *a*, which is pivotally suspended from the horizontal lever *f*, projecting laterally from the eccentric bushing F, has its lower end extended through and guided by the vertically-disposed aperture *b*, provided in the supporting bracket or boss *c*. The boss *c* is secured by any suitable means to the lower portion of the frame A in close proximity to leaders by which the forging-block B is guided and is provided with a horizontal slot or bifurcated portion, as shown in the drawings, in which is mounted the oscillatory dog *d*, which has an aperture provided through a portion thereof for the reception of the end of the rod *a*, about which it is adapted to have a limited pivotal movement. The dog *d* has its inner portion widened to extend slightly beyond the edges of the boss *c*, one side of which widened portion is provided with shoulders or flanges *d'* to limit its movement in one direction within the boss *c* and the other side being beveled and normally projected in the path of said block B in position to be engaged and forced outward by the beveled portion of said block in its descending movement. The normally projecting position of the dog *d* is maintained by means of the spring *g*, which has one end secured within the socket *g'*, provided in the side of said dog, and its other end disposed against the flange A' on the frame A.

Secured in any suitable manner to the plunger-rod *a* at a point above the bracket or boss *c* is the horizontally-projecting arm *h*, from which the plunger *i* is rigidly suspended in suitable position to adapt its lower end to

project into the aperture *e*, provided through the bracket *c*, and to rest upon and be normally supported by the dog *d*, which intersects the plane of said aperture, thus retaining the connected plunger-rod *a* in elevated position, as shown in Figs. 2, 3, and 4, and the eccentrically-mounted roll *E'* out of engagement with the lifting-board *C*. As the dog *d* is forced outward by the descent of the forging-block *B* the vertical aperture *j*, which is provided in the dog *d* in a normally offset position from the aperture *e*, is brought into alinement with said aperture *e*, thereby permitting the end of the plunger *i* to drop through the bracket *c* and throwing the connected parts into proper position for causing an elevation of the forging-block *B*. The plunger *i* and connected parts remain in this position until elevated by reason of the block *B* on its upward movement engaging and lifting the arm *k*, which is rigidly secured in any suitable manner to the plunger-rod *a* at a point where it is desired to stop the elevation of said block.

It will thus be seen that my invention consists in the provision of simple and efficient means whereby the descent of the forging-block causes a support to be knocked from under a mechanism-controlling member and the connected parts to be simultaneously thrown into operation for causing a return of said block to its normally elevated position.

It is obvious that such changes in the form, proportion, and minor details of construction of the parts as fairly fall within the scope of my invention may be made without departing from the spirit or sacrificing any of the advantages thereof.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine of the class described, the combination with a drop-hammer, mechanism for lifting said hammer, and an operating-rod connected to said mechanism, of a bracket having a horizontal slot therein, a vertical aperture provided through said bracket for

loosely receiving the end of said rod, a dog pivoted to said rod within said slot and having a portion normally extended in the path of said hammer and adapted to be oscillated by the descent thereof, a second aperture through said bracket, an aperture through said dog in normally offset position from said second aperture, a plunger rigidly fixed to said rod and resting on said dog in position to adapt it to drop through the aperture therein when said dog is oscillated, substantially as and for the purpose described.

2. The combination with a controlling-rod of a horizontally-slotted bracket having a vertical aperture therethrough for loosely receiving the end of said rod, a dog pivotally attached to said rod within said slot and having an aperture therethrough, a spring for normally retaining said dog in one position, an aperture provided in said bracket in normally offset position from the aperture in said dog, and a plunger fixed to said rod and seated on said dog and adapted to drop through the aperture therein when said dog is moved and cause a movement of said rod, substantially as described.

3. In a machine of the class described the combination of a controlling-rod having connection with the operative mechanism thereof, a plunger rigidly fixed to said rod, a bracket having an opening therein for the reception of the end of said plunger, a dog pivoted to said bracket and adapted to oscillate in a plane intersecting the plane in which said plunger reciprocates and to normally support said plunger, means for moving said dog from under said plunger, and means for raising said plunger to permit said dog to return to its normal position.

In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

HENRY J. HINDE.

Witnesses:

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