

(No Model.)

W. R. HAVENS & J. W. NESMITH.

PIG IRON BREAKER.

No. 272,249.

Patented Feb. 13, 1883.

Fig. 1.

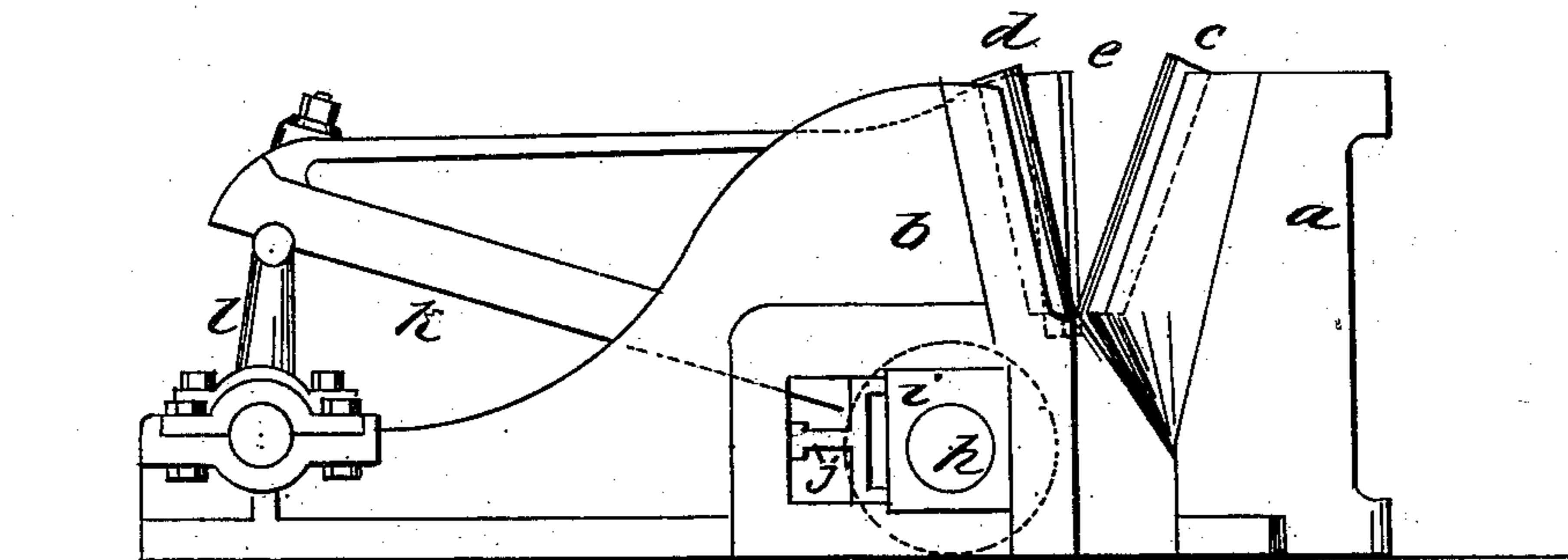
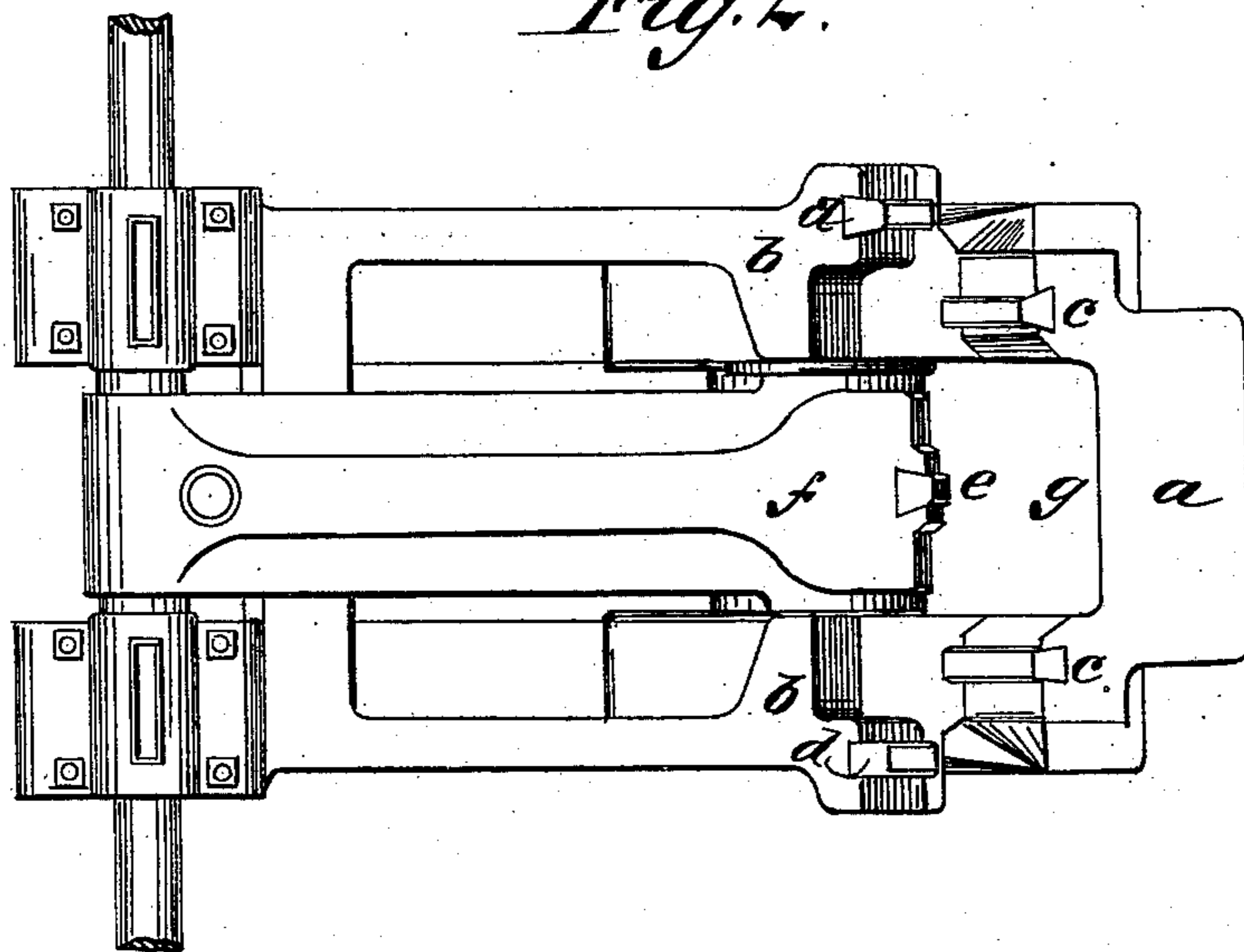


Fig. 2.



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WILLIAM R. HAVENS AND JOHN W. NESMITH, OF DENVER, COLORADO.

PIG-IRON BREAKER.

SPECIFICATION forming part of Letters Patent No. 272,249, dated February 13, 1883.

Application filed August 26, 1882. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM R. HAVENS and JOHN W. NESMITH, of Denver, in the county of Arapahoe and State of Colorado, have invented a new and Improved Pig-Iron Breaker, of which the following is a full, clear, and exact description.

Our invention consists of a pair of stationary jaws with breaking-dies arranged so as to receive the pigs and hold them between two or more points each side of the middle, while a movable jaw with a single die is made to press against and break the pigs at the middle, and also break them each side of the middle, between the holding-dies each side thereof, all as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a side elevation of our improved pig-iron breaker, and Fig. 2 is a plan view.

We provide two strong stationary holding-jaws, *a b*, on a suitable bed-plate, said jaws being preferably cast solid with the bed-plate, and are provided with dies *c* and *d*, respectively, which are set so as to range up and down the sloping faces of the dies, with the upper ends sufficiently wide apart to receive the pigs sidewise between them, and the lower ends sufficiently convergent to hold the pigs across them, while the middle die, *e*, of the movable jaw *f* closes on and first breaks them between dies *c*, and then by continuing its motion breaks them between dies *c* and *d*, thus by one operation breaking the pig into four pieces. If desired, the stationary jaws may be extended and have more breaking-jaws; or the dies may be placed closer together and more used. Between dies *c* jaw *a* is recessed at *g* to afford the requisite range of movement for the movable die, and jaw *b* is recessed between dies *d* to provide space for the movable jaw. The said movable jaw is pivoted at *h* in

boxes *i*, and is worked by the link and toggle device *l*, such as is employed in stone-crushing and other machines. The thrust of the pivots of the movable jaw is delivered on the bar *j*, which rests against the box *i*, as shown in Fig. 1, and is designed to be the weakest part to break in case of overstrain, for the protection of the more expensive parts.

The sockets or grooves for the breaking-dies are to be so formed that said dies may be readily removed when too much worn or broken and others put in. The dies may consist of hardened steel or chilled iron, as preferred.

The dies *c d e* may, if desired, be cast solid with their respective jaws; but we prefer to have them made separate and removable, as shown.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination of stationary holding and breaking dies *c d*, arranged substantially as described, and a movable breaking-die, *e*, as set forth.

2. The combination of stationary and recessed jaws *a b*, having dies *c* and *d*, and the movable jaw *f*, having die *e*, said jaws *c d* being arranged to receive and hold pigs of iron, and jaw *e* being operated to break said pigs in said dies, substantially as described.

3. In a pig-iron-breaking machine, a pair of stationary jaws, each provided with two dies, *c* and *d*, said dies being located in the sloping and confronting sides of the jaws, and diverging from the bottom upward to receive and hold the pigs between them, in combination with the movable breaking-jaw, substantially as described.

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Witnesses:

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H. W. HANNUM.