UNITED STATES PATENT OFFICE.

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APPARATUS FOR COMPRESSION SCRAP METAL INTO BLOCKS.

1,026,987.


To all whom it may concern:

Be it known that I, EMANUEL KARDOS, of 233 Burdett road, Limehouse, London, in the county of Middlesex, Great Britain, engineer, have invented and useful Improvements in Apparatus for Compressing Scrap Metal into Blocks.

To compress scrap metal within consecutive hydraulic or the like presses into blocks for further treatment is well known.

The present invention relates to such presses and the object of the invention is to provide a press which besides being of simple construction will allow, when compared with existing presses of a greatly increased output while at the same time reducing the work necessary for handling the block to a minimum.

With this object in view the invention consists in employing for the final press into which the metal is compressed by the preceding press or presses a vertical box open at the bottom and in closing this box during the compression stroke by means of a false bottom which is withdrawn after the compression stroke, so that the finished block can fall away from the said press box by its own weight, the false bottom being then moved under the opening of the box again.

In the preferred form two hydraulic presses, a horizontal and a vertical press, are used and the false bottom for closing the open end of the box of the vertical press is operated by means of a hydraulic piston, the false bottom serving on its back stroke as a means for removing the finished block out of the machine.

In the accompanying drawings the preferred form of the invention is shown.

Figure 1 is a side elevation: Fig. 2 a plan view and Fig. 3 a front view of a hydraulic press, constructed according to the present invention.

The apparatus shown in the drawings consists of two hydraulic presses, a horizontal preliminary press, and a vertical final press.

The apparatus comprises a mold box a in which the ram or plunger of the horizontal press reciprocates and having an opening in its top wall closed by a cover b which extends and covers the mold box up to the forward part f thereof in which the ram or plunger of the vertical press reciprocates.

The horizontal press further comprises a hydraulic ram c operated by the piston d movable within the hydraulic cylinder e, the stroke of the ram c ending at the point marked x, thus condensing the material charged into the mold box a, to the volume of the forward part f of the mold box a in which the ram or plunger g connected to the hydraulic piston h of the hydraulic cylinder i can be moved up and down. The forward part f of the mold box a is open at the bottom at k. Below the opening k, a horizontally movable member or false bottom l is arranged by means of which the said opening k is closed. Said false bottom forms a support for the metal block when it is being compressed by the vertical plunger or ram within the forward part f of the mold box. Located below and arranged parallel to the bottom of the mold box a is a base m forming a support for the movable member or false bottom l and upon which the movable member is reciprocated during the covering and uncovering of the opening k. The base m forms a rigid support for the movable member l when the metal block resting thereon is being compressed by the vertical ram or plunger g. The false bottom l is connected to a mechanism by means of which it may be withdrawn after the compression stroke of the ram g, and moved forward again after the compressed block has been discharged from the mold box. According to the drawings, the false bottom is operated by hydraulic means. However, any other means may be used for this.

The operation of the new press will be easily understood and is as follows:—The scrap metal is charged into the mold box a, and then compressed by means of the piston or plunger c up to the point marked x into the forward part f of the mold box. The ram or plunger g of the vertical press is then moved downward by admitting the main pressure to the cylinder i of this vertical press. The opening k in the bottom wall of the mold box a is closed during the downward stroke of the ram g by means of the false bottom l. As soon, however, as the scrap metal is compressed into the desired block the said false bottom is withdrawn so that the bottom of the mold box is opened and the metal block can automatically fall out of the box or else be easily moved down.
ward by means of the hydraulic ram \( g \). As soon as the metal block is discharged from the mold box \( a \) the false bottom \( l \) is moved forward again and by means of this the compressed block is mechanically removed out of the machine.

It will be seen that with the above described press the recharging of the mold box \( a \) can be effected directly after the withdrawal of the piston \( c \). For this recharging it is not necessary to wait for the upward movement of the piston or ram \( g \) of the vertical press so that an uninterrupted working is made possible. Further the removal of the finished block is effected mechanically, so that no manual work is necessary for this.

The withdrawal of the pistons of the two presses may be effected by hydraulic means, as indicated in the drawing, but if desired they may be withdrawn by other well-known means and no claim is made to this.

What I claim as new and desire to secure by Letters Patent is:

An apparatus for compressing scrap metal into blocks comprising a mold box, a press having a plunger adapted to reciprocate horizontally within the mold box, a second press having a plunger adapted to reciprocate vertically within the mold box at its forward end, said mold box having an opening in its top wall located intermediate the initial position of the horizontal plunger and the path of the vertical plunger, a closure for said opening adapted to be opened or closed at any time during the operation of the vertical plunger, said mold box having a second opening in its bottom wall in line with the vertical plunger, a horizontally movable member closing the opening in the bottom wall of the mold box and forming a support for the scrap metal block while the same is being acted upon by the vertical plunger, a base located below the mold box forming a support for said movable member, and means for actuating the movable member to uncover the opening in the bottom of the box.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

EMANUEL KARDOS.

Witnesses:
ALBERT MUND,
A. S. BOULTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."