

H. GIER.
PRESS FOR THE MANUFACTURE OF ARMOR PLATES.
APPLICATION FILED SEPT. 12, 1914.

1,129,663.

Patented Feb. 23, 1915.

2 SHEETS-SHEET 1.

Fig. 1.

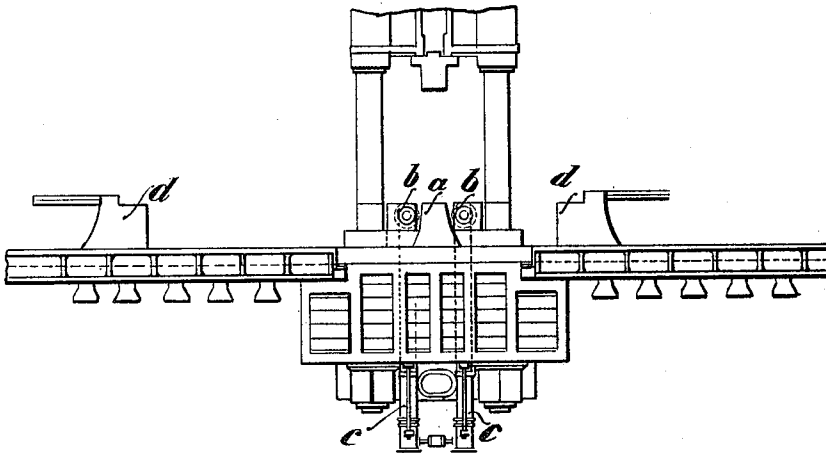
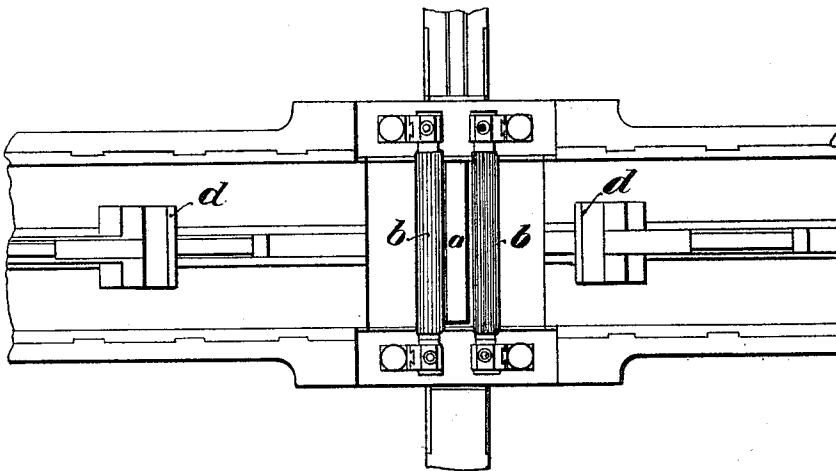


Fig. 2.



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Fig. 3

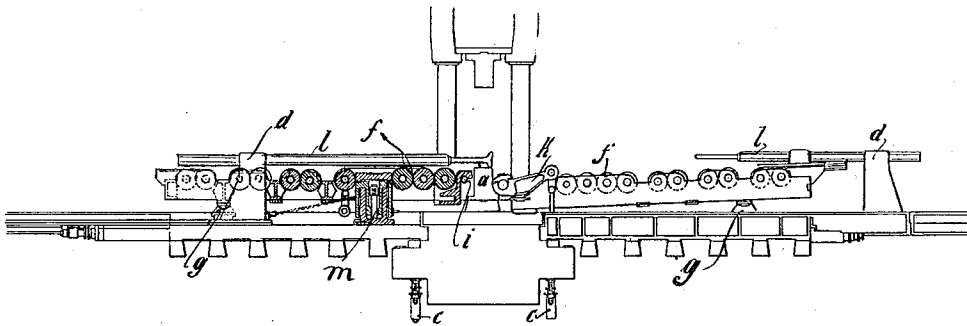
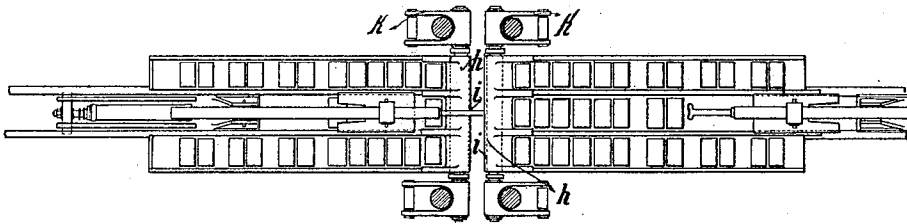


Fig. 4



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UNITED STATES PATENT OFFICE.

HERMANN GIER, OF COLOGNE-KALK, GERMANY.

PRESS FOR THE MANUFACTURE OF ARMOR-PLATES.

1,129,663.

Specification of Letters Patent.

Patented Feb. 23, 1915.

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To all whom it may concern:

Be it known that I, HERMANN GIER, subject of the King of Prussia, German Emperor, residing at Cologne-Kalk, Germany, have invented certain new and useful Improvements in Improved Presses for the Manufacture of Armor-Plates, of which the following is a specification, reference being had therein to the accompanying drawing.

The manufacture of armor plates or similar large and heavy articles by forging under large forging hammers involves certain difficulties, inasmuch as the handling of these large and heavy plates when carried out by means of the ordinary forge cranes is very complicated and wasteful of time.

The present invention has for its object to reduce to a minimum the use of forge cranes for the moving about of armor plates. For this object according to this invention there are provided in front of and behind the anvil two supports for the armor plate formed as rollers or as roller-tables, which supports are arranged under upwardly directed hydraulic pressure, so that the weight of the supports and that of the armor plate is entirely or nearly compensated. By this provision, the armor plates can easily glide over the anvil and therefore can be easily pushed to and fro or turned about by the ordinary means without rendering needful the aid of crane. In this arrangement the armor plate rests partly upon the anvil and partly upon the two roller supports. When the hammer reduces the thickness of that part of the armor plate, which lies upon the anvil, then the roller supports are depressed downward during operation, by the amount of the reduction of thickness. They rise, however, again as soon as the pressure ceases and the upper support returns to its original position, also that the displacing of the armor plate which then rests only upon the roller supports can be easily effected to the extent of the width of the anvil.

In the accompanying drawing, the simplest construction of the invention is illustrated in figures 1 and 2 as follows: Fig. 1 shows a side elevation. Fig. 2 a plan view. Fig. 3 shows a side elevation of a modification. Fig. 4 shows the corresponding plan view.

Referring to Figs. 1 and 2, in front and

behind the anvil *a* is placed respectively a roller *b*. The rollers are so connected with the hydraulic cylinders *c* that they are continuously pressed upward until their respective upper edge remains at the level or slightly above the level of the surface of the anvil. The armor plate consequently rests partly upon the anvil *a* and partly upon the rollers *b*, *b* serving as its support. For the support of the levers or the like used for the moving of the plate, there are provided in the usual way the displaceable lunettes or supports *d*. For larger plates the arrangement of simple rollers in combination with the lunette supports, does not suffice because owing to the larger size of the armor plate, a bending thereof takes place. In order to avoid this, the modification illustrated in Figs. 3 and 4 is devised. Instead of having a simple roller at each side of the anvil, there is here provided a roller-table *f* which table oscillates in bearings *g* at its outer end and rests with its inner hook-shaped end *h* on rollers *i*. These rollers *i* are placed like the rollers *b* of the modification shown in Figs. 1 and 2 under the influence of the hydraulic cylinders *c*. Hereby, the rollers *i* can be pressed upward by the aid of a lifting lever *k*. The pressure at both sides must be so adjusted, that the weight of the roller-table and the weight of the armor-plate are compensated. As the displacement of the plate is interfered with by the roller table interposed between the anvil and the lunette support, there are provided at the lunette supports *d*, special guide bars *l* by means of which the plate is moved about. From time to time moreover, it is necessary to turn the plate supports and the previously forged plates 90° or 180° in the horizontal plane. In order to avoid in this motion also the use of the crane, as much as possible, there is arranged for each roller table, a lifting cylinder *m* actuated from the driving train of the roller-table which is automatically supported upon the floor and passes through the roller table. By means of this lifting cylinder, the operator is able to lift the plate or block a little above the roller table so that the turning is facilitated and can be effected by the ordinary means of the forge such as levers, pressure bars and so forth.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be

performed, I declare that what I claim is:—

Improved mechanism for the production of armor plates and other similar heavy and
5 large articles, comprising an anvil, vertically adjustable roller supports in front and rear of said anvil for the armor plates, hydraulic pressure devices directed upwardly against said supports to approxi-

mately balance the weight of said armor 10 plate, and guide bars by which the plate is moved about.

In testimony whereof I affix my signature in the presence of two witnesses.

HERMANN GIER.

Witnesses:

RUDOLF FERDINLY,
LOUIS VANDORY.

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