

(No Model.)

2 Sheets—Sheet 1.

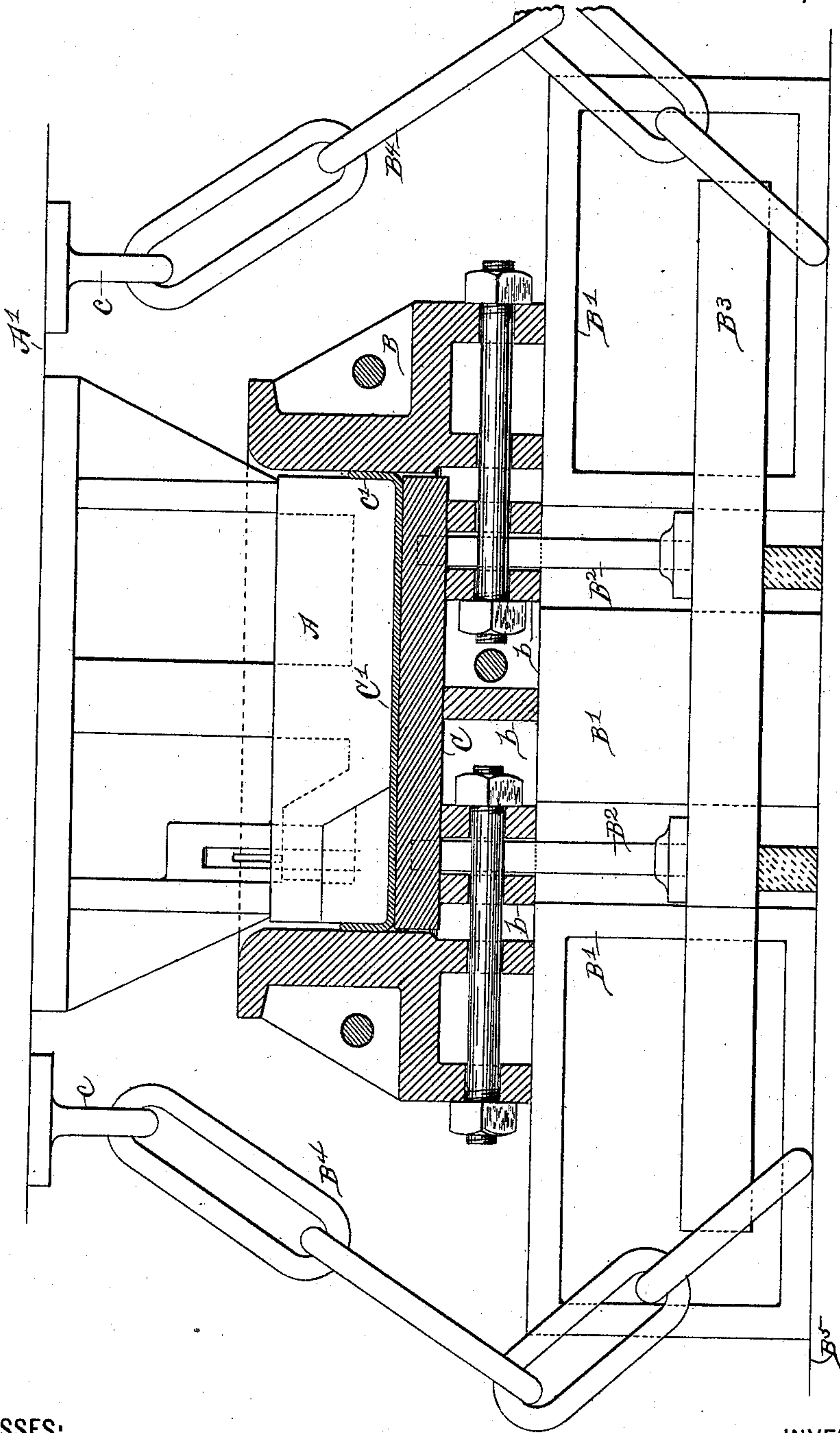
C. HACKNEY.

DIE FOR MAKING STEEL PLATES FOR RAILWAY ROLLING STOCK.

No. 540,247.

Patented June 4, 1895.

Fig. 1.



WITNESSES:

DN Maxon
Wm. A. Kellock

INVENTOR

Clem Hackney

BY

EN Disher
his ATTORNEY

(No Model.)

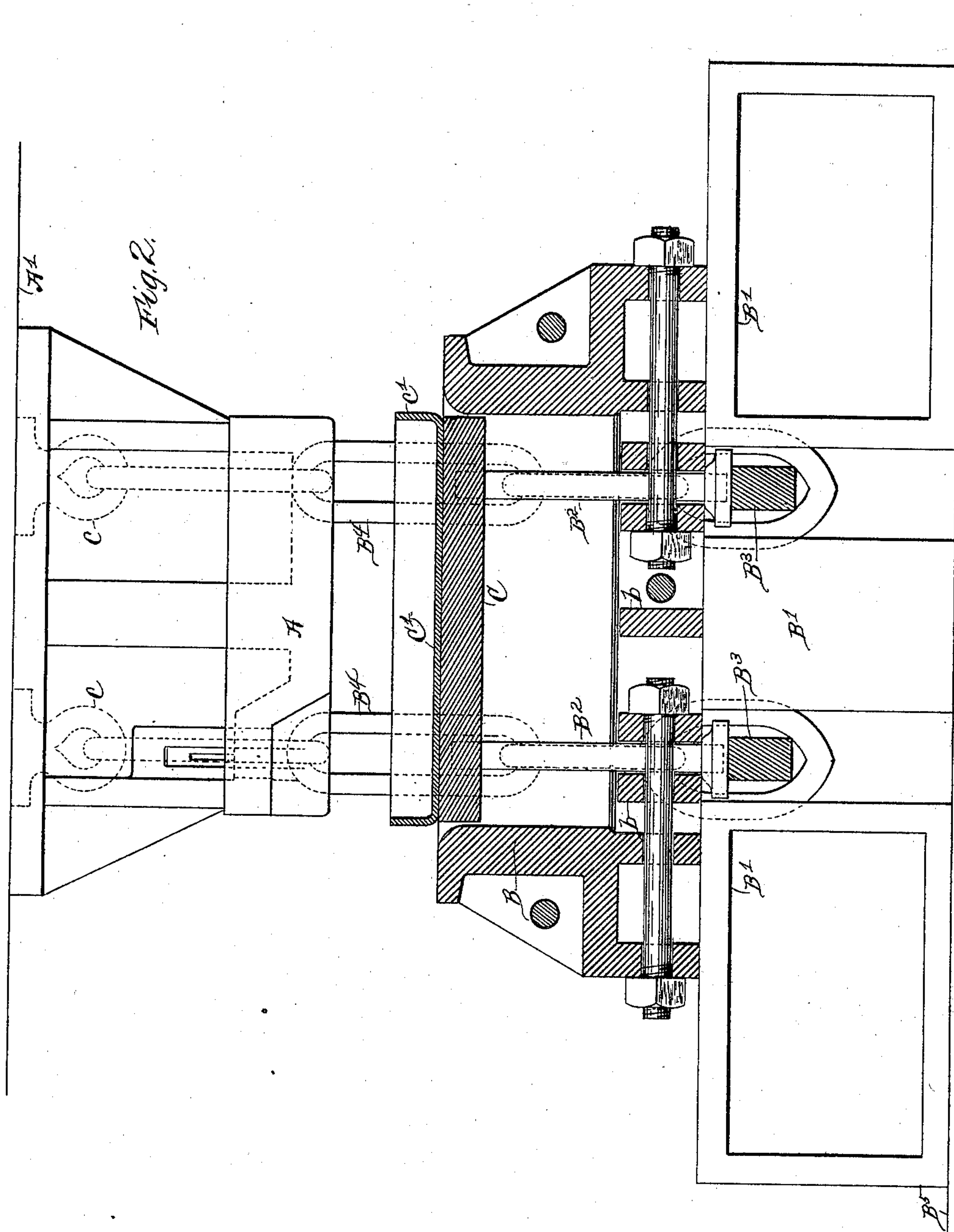
2 Sheets—Sheet 2.

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DIE FOR MAKING STEEL PLATES FOR RAILWAY ROLLING STOCK.

No. 540,247.

Patented June 4, 1895.



WITNESSES:

L. N. Maxon
Wm A Pollock

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UNITED STATES PATENT OFFICE.

CLEM HACKNEY, OF JOLIET, ILLINOIS.

DIE FOR MAKING STEEL PLATES FOR RAILWAY ROLLING-STOCK.

SPECIFICATION forming part of Letters Patent No. 540,247, dated June 4, 1895.

Application filed February 13, 1893. Serial No. 462,098. (No model.)

To all whom it may concern:

Be it known that I, CLEM HACKNEY, of Joliet, county of Will, State of Illinois, have invented a new and useful Improvement in Dies for Making Steel Plates for Railway Rolling-Stock, of which the following is a specification.

This invention relates to dies for pressing or forging metal plates, especially pressed steel plates for railway rolling stock, and it consists of means for lifting a plate out of a die.

I will describe a die embodying my invention, and then point out the novel features in claims.

In the accompanying drawings, Figure 1 is a partial side elevation and partial section of a die embodying my improvement and showing the dies in one position. Fig. 2 is a similar view, but showing the dies in another position.

In this machine there is a relative movement between the male and female dies. A lifting or supporting plate forms the bottom of the female die, and there is a relative vertical movement between said female die and the said bottom plate.

Referring by letter to the drawings, A designates the upper or male die, here shown as suspended from a fixed top plate A'.

B designates the lower or female die supported on blocks B' which are mounted on the bottom plate B⁵. The die B is here shown as movable over the die A and there is a space between the walls of said dies corresponding to the thickness of a pressed plate. The die B is open at its top and bottom. Vertical motion may be imparted to the die B by any desired means. I have not deemed it necessary to show means for raising and lowering the die. This is usually done by hydraulic power.

C is the lifting or supporting plate forming the bottom of the die B. When in the position shown in Fig. 1, this plate rests on bed pieces b in the lower portion of the die B. It is mainly supported, however, on standards B² extending upward from lifter bars B³. The ends of the lifter bars extend outward and have flexible connections with the fixed top plate A'. As here shown these flexible connections consist of chains B⁴ engaging with the ends of the lifter bars and engaging with eyes or hooks c on the plate A'.

In operation, when the dies are in the position shown in Fig. 2, a sheet of metal designed to form the flanged plate C' is laid across the top of the die B and bottom plate C. The lower die is now moved upward, the bottom plate C remaining stationary until it is reached by the bed pieces b. Then the plate moves upward with the die. By this operation the plate of metal has the flanges c' formed on it as shown. To remove the formed plate the die B is lowered and the plate C is lowered with it until prevented from further movement by the tightening of the chains B⁴. The die B continues to lower until the parts are in the position shown in Fig. 2. The chains, therefore, by holding the lifter bar stationary while the die B moves downward raises the plate C resting upon the supports B², B² forcing the finished plate out of the die B.

I have described the lower die as the female die and movable but it is obvious that the dies may be reversed to make the male die the lower die. In this event the plate to be formed would be placed on top of the male die.

Having described my invention, what I claim is—

1. The combination with an upper and lower die and means for causing a relative movement between them, of a supporting plate forming a bottom for one of the dies, bed pieces upon which said plate rests at the bottom of the die, and flexible supports for said supporting plate for moving the same relatively to the die, substantially as specified.

2. The combination with a fixed upper die, of a lower die movable relatively to said upper die, a supporting plate forming a bottom for said lower die, bed pieces upon which said plate rests at the bottom of the die, the lifter bars and flexible connections between said lifter bars and a fixed support, whereby the lower die may have a downward movement while the supporting plate is at rest, substantially as specified.

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

CLEM HACKNEY.

Witnesses:

A. M. BEATTY,
I. O. LELAND.