

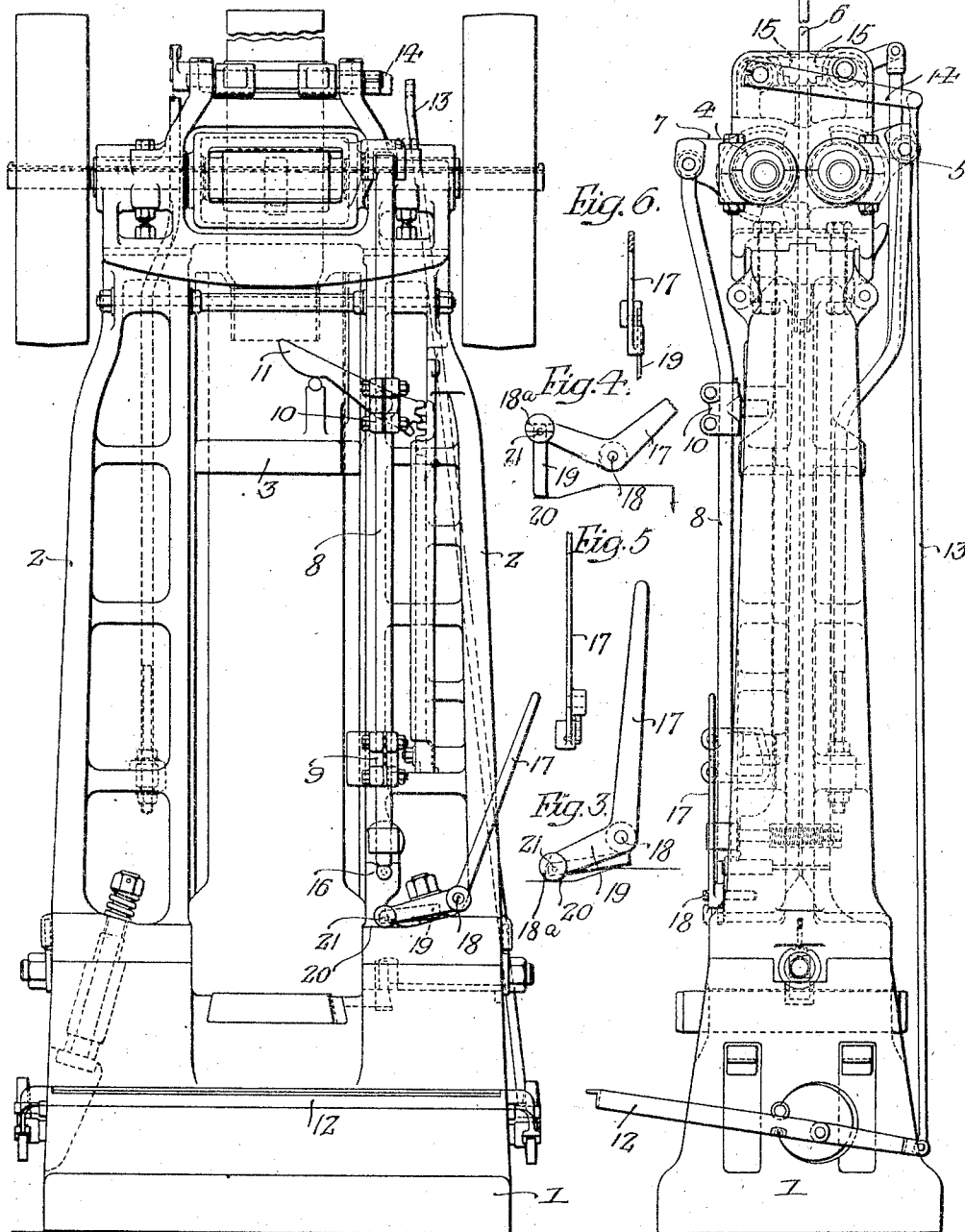
H. E. DERBYSHIRE.  
SAFETY LATCH FOR BOARD DROP HAMMERS.  
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1,037,735.

Patented Sept. 3, 1912.

Fig. 1.

Fig. 2.



Witnesses—  
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# UNITED STATES PATENT OFFICE.

HENRY E. DERBYSHIRE, OF CHAMBERSBURG, PENNSYLVANIA, ASSIGNOR TO CHAMBERSBURG ENGINEERING COMPANY, OF CHAMBERSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

## SAFETY-LATCH FOR BOARD DROP-HAMMERS.

1,037,735.

Specification of Letters Patent.

Patented Sept. 3, 1912.

Application filed November 1, 1911. Serial No. 657,937.

*To all whom it may concern:*

Be it known that I, HENRY E. DERBYSHIRE, a citizen of the United States, residing in Chambersburg, Pennsylvania, have invented certain improvements in Safety-Latches for Board Drop-Hammers, of which the following is a specification.

One object of my invention is to provide a conveniently operated and relatively simple supporting device for temporarily preventing movement of the bar which controls the action of the lifting rolls of a board drop hammer in order to render possible the changing of the dies and the making of adjustments with greater safety to the operator than has hitherto been possible. This object I attain in the following manner, reference being had to the accompanying drawings, in which:—

Figure 1, is a front elevation of a board drop hammer, showing my invention as applied thereto; Fig. 2, is a side elevation of the hammer shown in Fig. 1; Figs. 3 and 4, are side elevations of the safety latch and its operating lever, showing the parts in their inoperative and operative positions respectively; Figs. 5 and 6, are front elevations of the parts shown in Figs. 3 and 4 respectively.

In the accompanying drawings, 1 represents the base of a hammer having side frames 2 providing guideways for a ram 3. On these frames are mounted lifting rolls 4 and 5 which, under operating conditions, may be made to cooperate to engage the lifting board 6, which is attached to the ram 3 to raise the latter. Said rolls are mounted on eccentrics carried in the well known manner by the frames 2 operated by a lever 7 to cause said rolls to engage or disengage the lifting board 6. Said lever is actuated through a bar 8, which has clamped to it a knock-off bracket 9 and a roll release lever bracket 10 on which the release lever 11 is pivoted. A treadle 12 is pivoted to the base of the frame 1 and has connected to it a long rod 13, acting through a lever 14, to operate a pair of clamps, whereby the lifting board and the ram attached thereto may be held in the raised or upper position. Under operating conditions, the ram upon reaching a point near the bottom of its stroke, engages the

knock-off bracket 9 and causes the lower end of the bar 8 to be pushed off of its supporting shelf 16 so that it drops and thereby so moves the lever 7 as to cause the lifting rolls to engage the board 6. The ram is thus brought to its upper position, adjacent which it strikes the lever 11 and so moves the bar 8 and the lever 7 as to cause the rolls to release the lifting board. If the treadle 12 is depressed, the clamps 15 are out of action and the ram is free to fall and to repeat the above cycle of operations, though if said treadle be in the position shown in Fig. 2, the board is gripped by the clamps 15 and retained in raised position.

If it be desired to put the machine out of operation in order that the die may be changed or that any desired adjustment may be made without danger to the operator, it is necessary that the bar 8 be propped or fixed in its upper position and such propping of said bar 8 is unreliable and dangerous, since if the prop, or other holding means, should be accidentally dislodged or removed, the consequent unintentional operation of the hammer would endanger the operator. In order to prevent the possibility of such an accidental starting of the hammer, I provide a hand lever 17 pivoted to the frame at 18 and provided with a notch in its short arm, as indicated in Figs. 3 and 4. This notch provides an abutment 18<sup>a</sup> for a bar or strut 19 forming a latch which is pivoted to the outer end of the said short arm. This hand lever and the latch are so placed that under working conditions they may be operated to lock the bar 8 in its raised position. The downward movement of the long arm of the lever 17 raises its short arm from the position shown in Fig. 3 to that shown in Fig. 4, and permits the latch 19 to assume a substantially vertical position with its upper end in engagement with the abutment 18<sup>a</sup>. Under these conditions the end of the short arm of the lever 17 engages the lower end of the lifting bar 8 and effectually prevents it from dropping from its raised position, while the strut or latch 19 engages the supporting ledge 20 provided by the frame, with its upper end against the abutment 18<sup>a</sup>, as noted, so that the lever 17, with the lifting bar 8, are effectually locked in position. The various

parts are so arranged that under these conditions the upper end of the strut or latch 19 engages the abutment in such manner that its lower end rests a little to one side of the perpendicular so that, therefore, it has no tendency to become dislodged. When it is desired to again place the machine in operation, the lever 17 is pulled down for a short distance, thereby taking the strain from the strut 19, which may then be moved on its pivot until it is substantially parallel with the arm 17, whereupon this latter is given its normal position shown in Fig. 3.

15 Inasmuch as the latch or strut is permanently fixed by means of the pin 21, on the arm of the lever 17, the device is always ready for operation and in no way interferes with the working of the machine under ordinary conditions.

I claim:—

1. The combination in a drop hammer of the hammer, lifting rolls, a bar for controlling the lifting rolls; with a hand operated safety latch mounted to positively retain said bar in its raised position.
2. The combination in a drop hammer of the hammer; lifting rolls; a bar for controlling the lifting rolls; a device for positively retaining said bar in its raised position;

tion; and a hand actuated member for operating said device.

3. The combination in a drop hammer of the hammer; lifting rolls; a bar for controlling the lifting rolls; a latch for retaining said bar in its elevated position; and a lever for operating said latch.

4. The combination in a drop hammer of a frame, a hammer; lifting rolls, a roll controlling bar; a lever pivoted to the frame of the hammer; and a member pivoted to the lever in position to cooperate with said frame to positively hold the bar in its elevated position or to permit movement of said bar.

5. The combination in a drop hammer of a frame having a ledge, hammer lifting rolls; a roll controlling bar; a lever pivoted to said frame and having an abutment on one of its arms; with a latch piece pivoted to said lever arm adjacent said abutment in position to be moved between the roll controlling bar and the ledge on the frame.

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

HENRY E. DERBYSHIRE.

Witnesses:

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SARAH T. FROMMEYER.