No. 686,967. Patented Nov. 19, 1901.

M. GUETT.

PUNCH PRESS.

(Application filed Sept. 23, 1901.)

(No Model.)

Fig. 1.

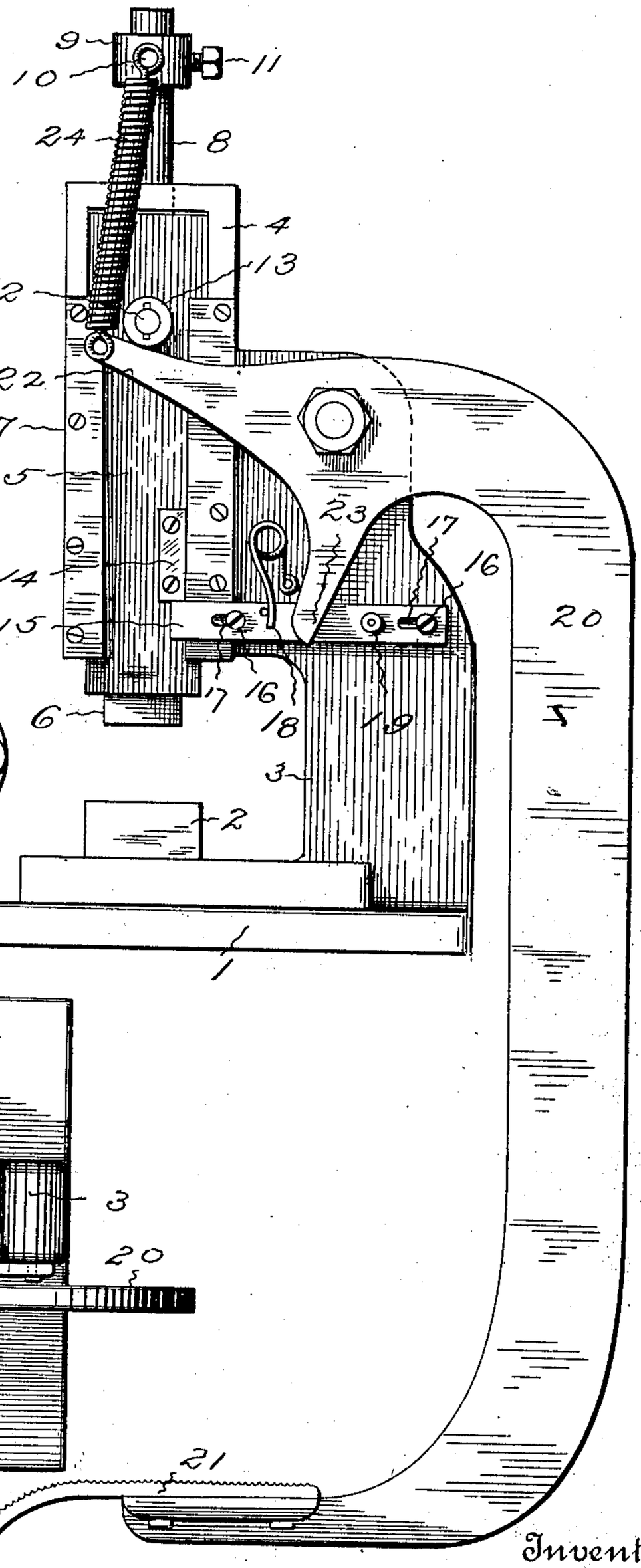


Fig. 3.

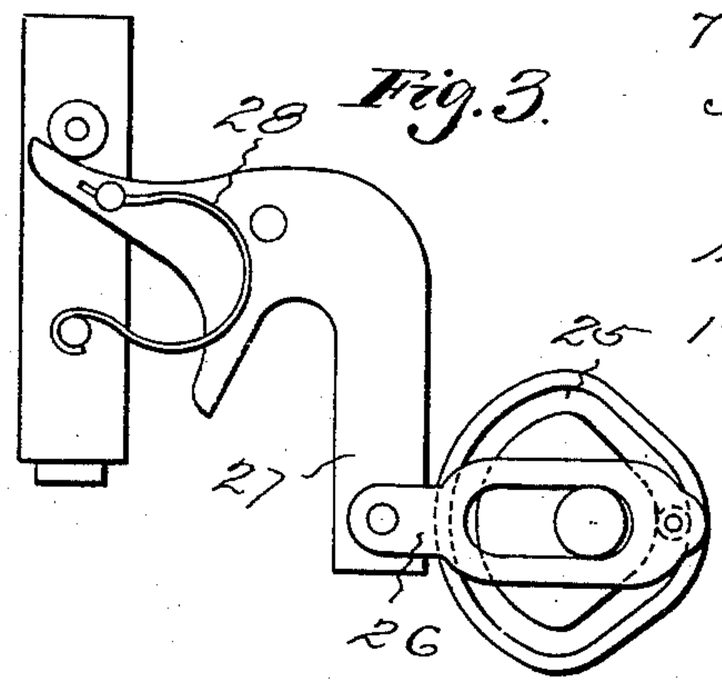
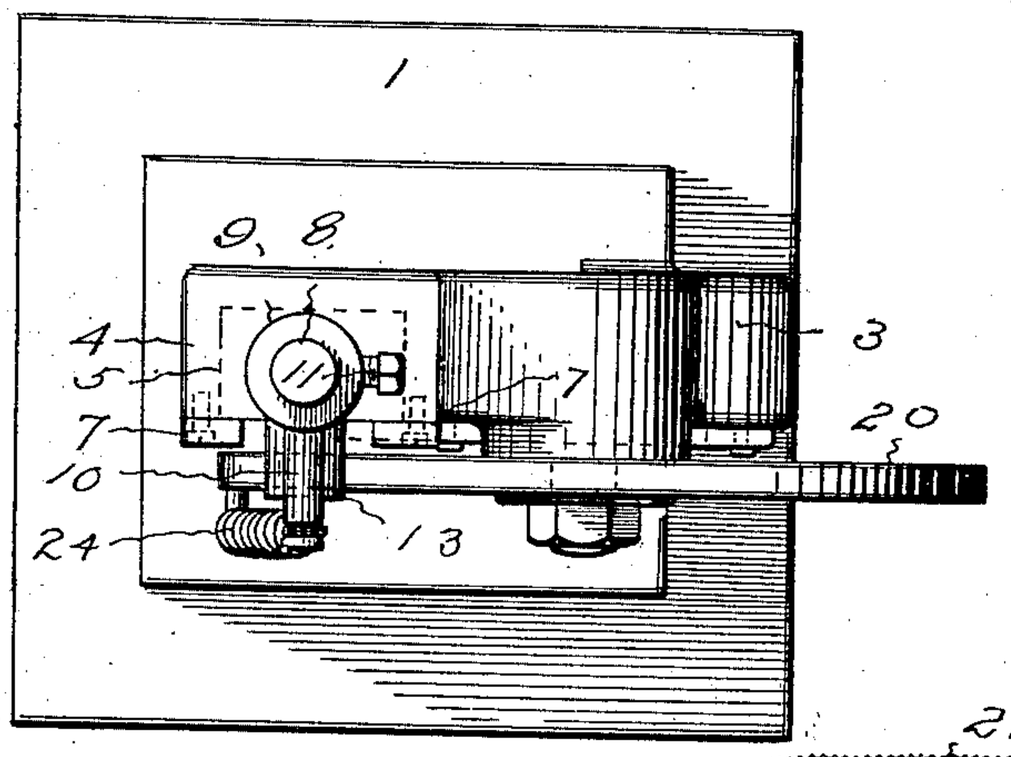


Fig. 2



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UNITED STATES PATENT OFFICE.

MONROE GUETT, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE HART & HEGEMAN MANUFACTURING COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

PUNCH-PRESS.

SPECIFICATION forming part of Letters Patent No. 686,967, dated November 19, 1901.

Application filed September 23, 1901. Serial No. 76,202. (No model.)

To all whom it may concern:

Be it known that I, MONROE GUETT, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Punch-Presses, of which the following is a specification.

This invention relates to a press that has a reciprocatory slide arranged to carry a punching, stamping, or setting die that is thrown violently for striking a blow by the tension of a spring.

The object is the production of a simple press particularly applicable for punching, stamping, or setting light metal which is so constructed that the force of the blows of the punch or die after being regulated to produce the desired result will always be the same, and thus exercise a uniform effect upon the material being worked.

The machine illustrated by the accompanying drawings as embodying the invention has a bed with a standard holding a vertically-reciprocatory slide, a horizontally-movable latch, and a pivoted lever having an operating-treadle, an arm connected with the slide by a spring, and a finger arranged to engage and move the latch from beneath a stop on the slide after the lever has been sufficiently swung to cause the spring to exert the desired tension on the slide.

Figure 1 of the drawings shows a side elevation, and Fig. 2 a plan, of this press. Fig. 3 illustrates a modified method of operating the lever.

The bed 1 may be any desired shape and may support any form of die-block 2. The standard 3, extending upwardly from the bed, has a head 4, with a vertical mortise in one side. The slide 5, that carries any form of punch 6, is movably held in the mortise in the head of the standard by gibs 7. A post 8 extends upwardly from the upper end of the slide through a perforation in the top of the head. A collar 9, with an outwardly-projecting stud 10, is adjustably secured on this post by a set-screw 11. On a stud 12, projecting from a side of the slide, is a roll 13, and on the same side of the slide near the back edge is a stop-block 14. The latch 15 is held against the face of the standard by screws 16, that pass through slots 17. The latch is forced forwardly by a spring 18, so that its front end normally projects beneath the lower end of the stop. On the face of the latch is a roll 19. The lever 20, that has a treadle 21 at its lower end, is pivoted to the side of the standard, so that the arm 22 will project beneath the roll 13 on the slide and the finger 23 will project in front of the roll 19 on the latch. A spring 24 connects the lever-arm and the stud 10, that projects outwardly from the collar on the slide-post. When the lower end of the lever is pushed back by the application of the foot to the treadle, the spring is stretched and tends to draw down the slide. By the time that the spring has become sufficiently stretched to effect a blow of the desired force the lever-finger engages the latch-roll and withdraws the end of the latch from the stop, allowing the slide to be thrown down by the tension of the spring. When the lower end of the lever is swung forwardly, the arm engages the slide-roll and lifts the slide. The lever-finger at the same time moves forwardly, so that the latch will be pushed beneath the stop when the slide reaches its upper position.

The tension of the spring may be increased or decreased by adjusting the collar upon the slide-post, and thus the force of the blow may be determined. The backward movement of the lever is limited by the length of the slots in the latch. After the tension of the spring has been regulated each blow, which occurs every time the treadle is pushed backwardly, will have the same force as the other, for the latch will release the slide with the spring at the same tension.

This press is particularly applicable for punching, stamping, or setting thin metal, for the reason that the force of the blows is uniform, and all of the work will be the same, as the force of the blows is determined by the tension of the spring and not by the muscular effort of the foot and leg of the operator.

The lever may of course be oscillated by power, as illustrated by Fig. 3, where a cam

25 is arranged to reciprocate a link 26, attached to a lever 27. If desired, a leaf-spring 28 instead of a spiral spring could be arranged to be made tense by the oscillation of the lever.

I claim as my invention—

1. A press consisting of a die-bed, a standard, a punch-slide, a spring that when under tension tends to throw the slide toward the bed, means for making the spring tense, and a latch normally holding the slide and moved so as to release the slide, by the means for making the spring tense, after the predetermined tension has been given, substantially as specified.

2. A press consisting of a die-bed, a standard, a punch-slide, a spring that when under tension tends to force the slide toward the bed, means for making the spring tense, a latch for holding the slide while the spring is being made tense, and means for withdrawing the latch from the slide when the spring is under the predetermined tension, substantially as specified.

3. A press consisting of a die-bed, a standard, a punch-slide, a lever, a spring connected between the slide and the lever in such manner that the oscillation of the lever puts the spring under tension and causes it to force the slide toward the bed, a latch for holding the slide while the spring is being made tense, and means for withdrawing the latch from the slide when the spring is under the predetermined tension, substantially as specified.

4. A press consisting of a die-bed, a standard, a punch-slide, a lever, a spring connected between an arm of the lever and a part of the slide in such manner that the oscillation of the lever puts the spring under tension and causes it to force the slide toward the bed, a latch for holding the slide while the spring is being made tense, and a finger projecting from the lever and adapted to withdraw the latch from the slide when the spring is under the predetermined tension, substantially as specified.

5. A press consisting of a die-bed, a standard, a punch-slide, a lever pivoted to the standard, a spring connected between an arm of the lever and a part adjustably attached to the slide in such manner that the oscillation of the lever puts the spring under tension and causes it to force the slide toward the bed, a latch for holding the slide while the spring is being made tense, and a finger projecting from the lever and adapted to withdraw the latch from the slide when the spring is under the predetermined tension, substantially as specified.

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