Nov. 30, 1926. 1,608,954

J. O. POLLACK

TOGGLE PRESS

Filed Feb. 11, 1924 4 Sheets-Sheet 1

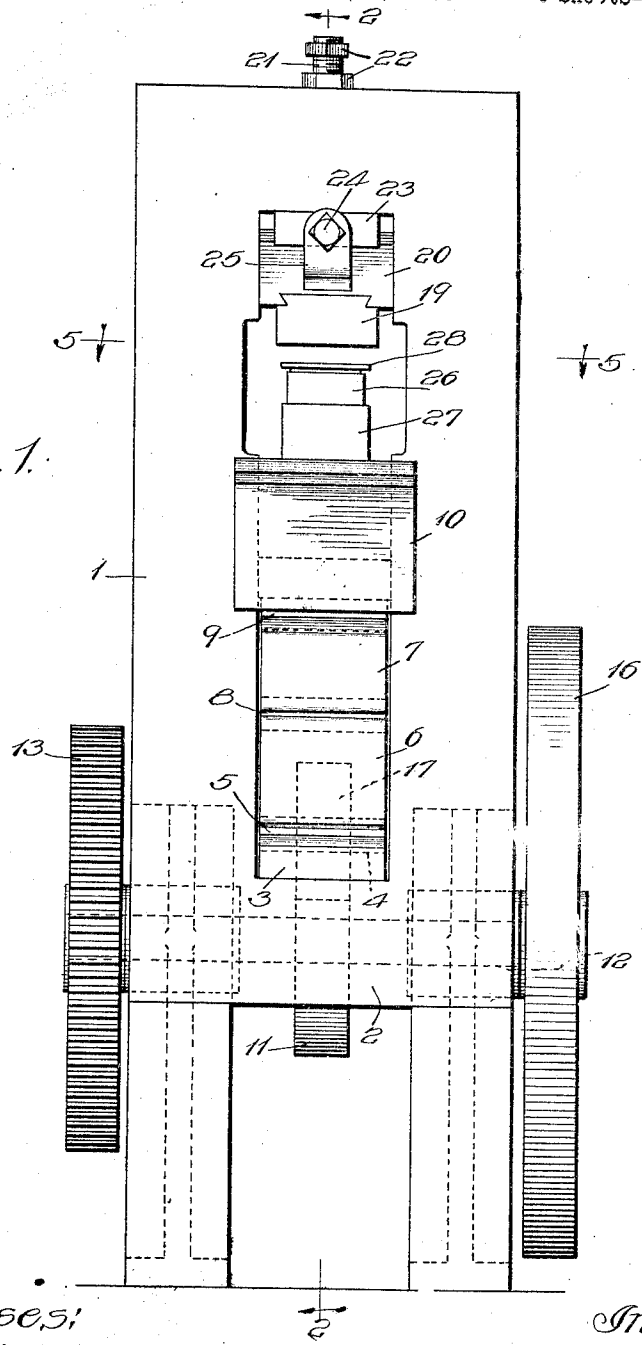


Fig. 1.

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Inventor:
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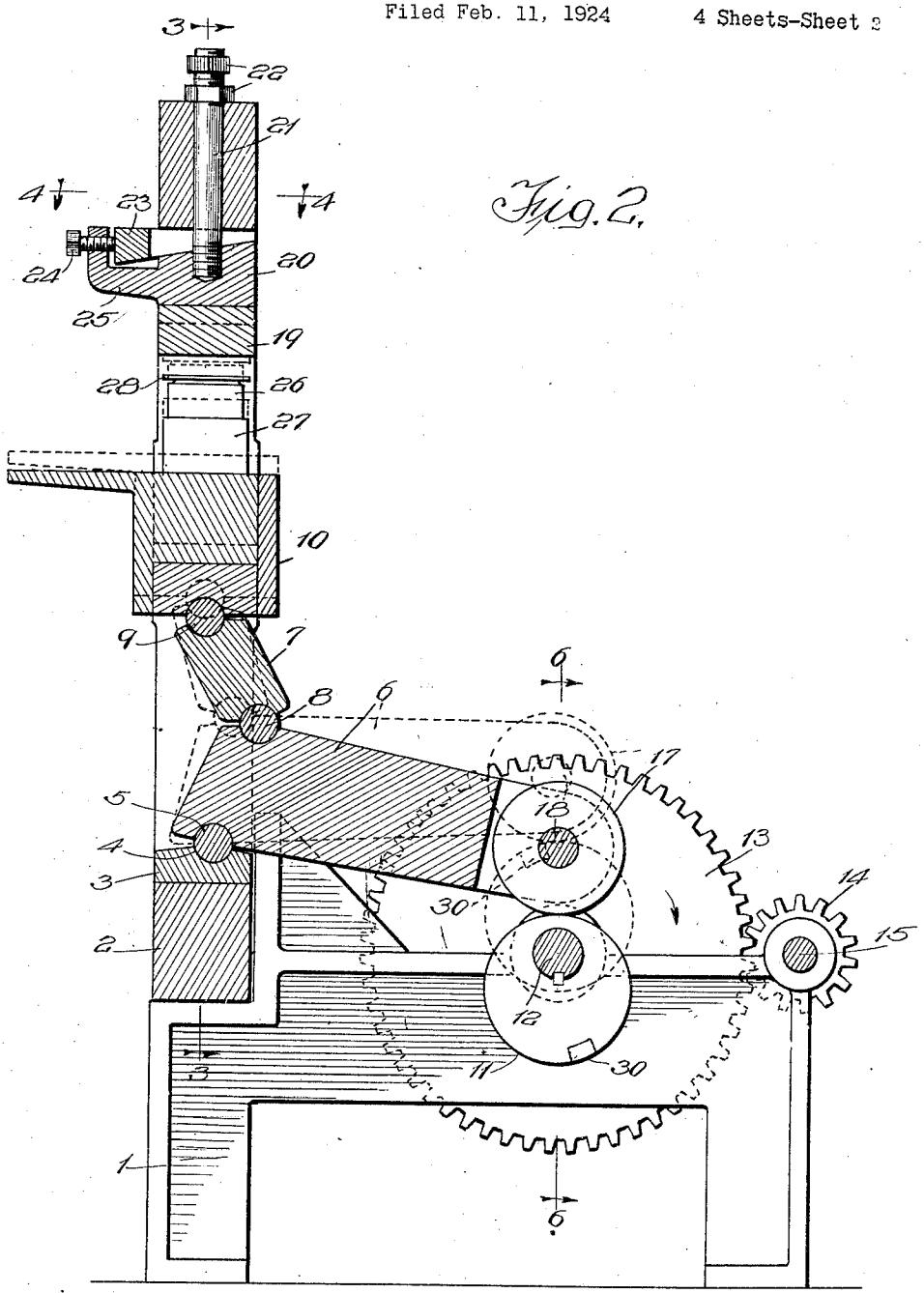


Fig. 2.

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Fig. 3.

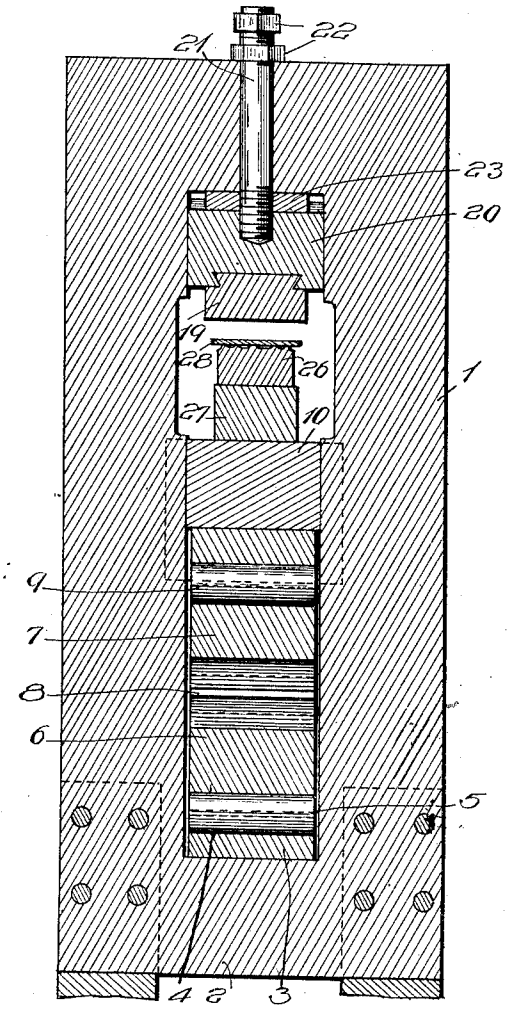
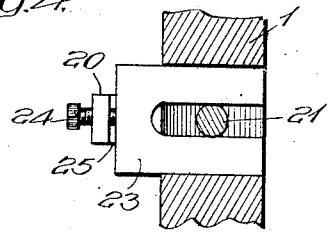


Fig. 4.



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Fig. 5.

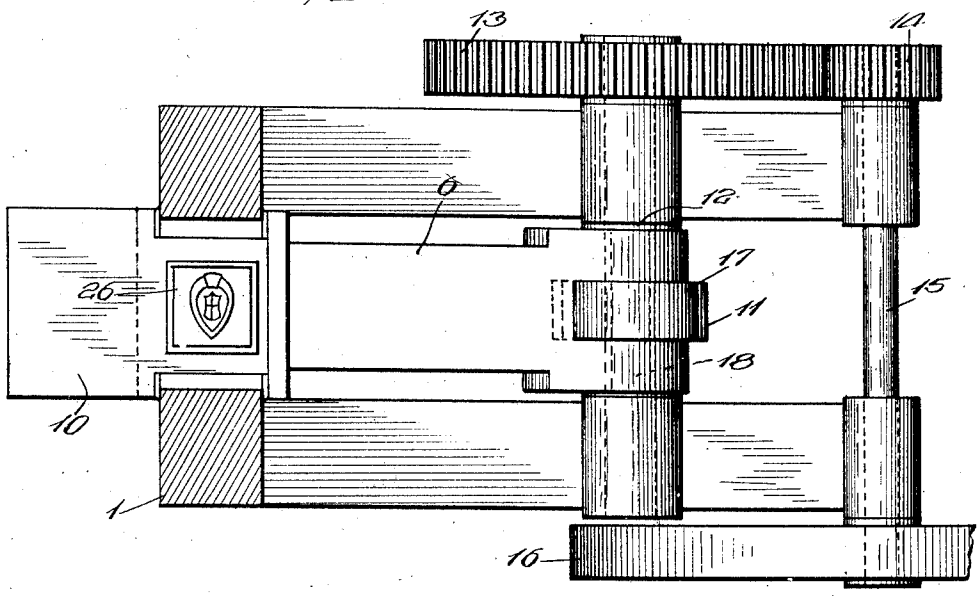
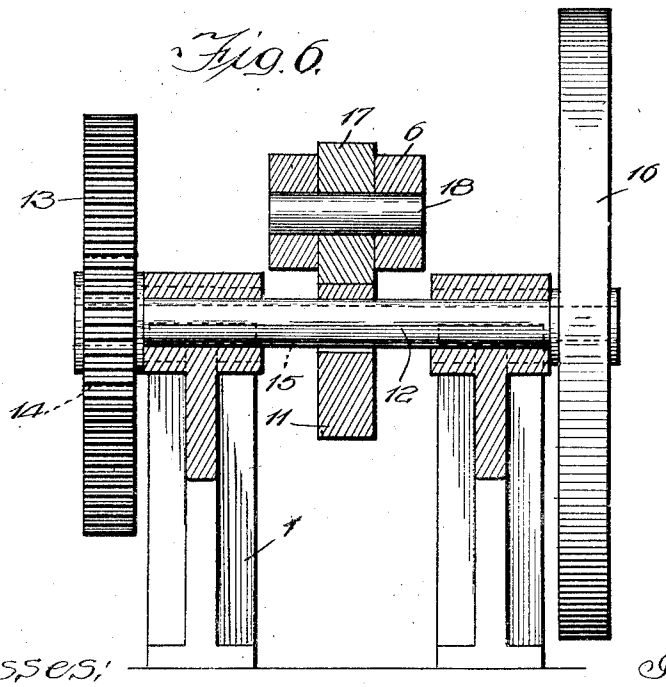


Fig. 6.



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Patented Nov. 30, 1926. 1,608,954

UNITED STATES PATENT OFFICE.

JOSEPH O. POLLACK, OF CHICAGO, ILLINOIS.

TOGGLE PRESS.

Application filed February 11, 1924. Serial No. 692,023.

My invention relates to improvements in toggle presses, and more particularly to a press of the kind described, particularly adapted for use in manufacturing jewelry or other small articles.

One of the objects of my invention is to provide a press of the kind described, that will be extremely smooth running and free from excess vibration and noise so that the use thereof will be permitted in office buildings and the like where the use of machinery of such nature is usually prohibited.

The invention has among its other objects the production of a device of the kind described, which shall be simple, convenient, compact, durable, efficient and satisfactory for use wherever found applicable.

Many other objects and advantages of the construction herein shown and described will be obvious to those skilled in the art from the disclosures herein given.

To this end my invention consists in the novel construction, arrangement and combination of parts herein shown and described, and more particularly pointed out in the claims.

In the drawings, wherein like reference characters indicate like or corresponding parts:

Fig. 1 is a front elevation of my device;

Fig. 2 is a longitudinal section taken substantially on the line 2—2 of Fig. 1;

Fig. 3 is a section taken substantially on the line 3—3 of Fig. 2;

Fig. 4 is a section taken substantially on the line 4—4 of Fig. 2;

Fig. 5 is a section taken substantially on the line 5—5 of Fig. 1; and

Fig. 6 is a section taken substantially on the line 6—6 of Fig. 2.

In the drawings, wherein I have illustrated the preferred embodiment of my invention, 1 indicates a suitable framework or base for the press, the same being adapted to be mounted upon a table, bench or other suitable place, so that it will be easily accessible for the work to be done thereby. 2 indicates a cross-piece or block upon which is mounted a bearing plate 3 having a concave recess 4 therein to receive a bearing pin 5. A pair of toggle arms 6 and 7 are arranged to be pivotally interconnected at one end by a pin 8, the other end of the arm 7 having a pin 9 thereat to pivotally engage with a movable work platform 10. The free end of the arm 6 is adapted to be moved vertically by any suitable means, as for instance by a cam 11 keyed to a rotary shaft 12, as shown more clearly in Fig. 2. A gear 13 is also keyed to the shaft 12 and is driven by a pinion 14 from a shaft 15. A fly wheel 16 may be arranged at the end of the shaft opposite the gear 13, the cam 11 being placed intermediate the fly wheel and gear.

The pivots 5 and 9 are arranged in vertical registry, and the pivot 8 is laterally offset therefrom, so that when the shaft 15 is driven through any suitable source of power, the cam 11 is rotated, causing the free end of the arm 6 to raise and lower, the arm 6 in turn pivoting about its stationary pivot bearing 5 and about its movable bearing 8 to cause the arm 7 to lift the work-carrying platform 10.

In the embodiment shown, a roller 17 is carried at the free end of the arm 6 upon a shaft 18 and engages directly with the cam 11. A pressure-receiving relatively stationary top plate or die member 19 is carried at the upper part of the frame, the same preferably being formed so as to dovetail with a part 20, as shown, these parts being slidable vertically in the frame.

A bolt 21 is slidable vertically through the frame and is detachably connected at its lower end to the part 20 to support the same and has lock nuts 22 at its other end so that the part 20 may be adjustably moved vertically in the frame and locked in its adjusted position.

In order to take up any play between the frame and the relatively stationary member, a wedge 23 is interposed between the top cross-piece of the frame and the upper surface of the part 20, this wedge being preferably tapered in vertical cross section, as

shown. A bolt 24 may be mounted on a part 25 projecting from the part 20 and engaging with the wedge 23 so as to adjustably lock the same in position. It will be noted that the wedge 23 is preferably in the form of a fork so that its legs straddle the bolt 21.

When it is desired to operate the press, a die 26 is positioned on the platform 10 either directly thereon or upon a block 27 and the work 28 is placed upon the die. The rotation of the cam lifts the free end of the arm 6, causing the toggle to move the die member 26 with the work thereon upwardly toward the relatively stationary die member 19, whereupon the dies will operate in the usual manner.

The adjustment provided permits the use of dies of various sizes and the use of various thicknesses of metal. I have shown (see Fig. 2) a yieldable insert 30 on the cam member 11, the purpose of which is to slightly cushion the roller 17 after the roller has passed over the high spot on the cam and the cam starts to recede or permit the lowering of the roller. This insert may be of rubber, cork, fabric or any equivalent which will provide substantially a resilient bearing or face on the cam. I have found by experience that when the lever 6 is moved to close the press, upon the relieving of the pressure as the cam rotates there may be slight jar or vibration. This insert does away with this vibration or jar as well as noise, and prevents the slap or hammer of the roll on the cam. I have found that my press is permitted in office buildings and other places where light manufacturing is sometimes desirable, but in which machinery and particularly presses or stamping machines have been barred because of the noise and vibration. This is an important factor in a large city where a central display room and combined shop is a desirable feature and an office or store building is preferred by virtue of its more desirable location. As has been hereinbefore pointed out, the device is particularly intended for delicate work, such as that done by jewelers and wherein a comparatively close adjustment may be made.

As the toggle descends the operator may pick off the finished piece of work and insert a new blank on the die in position for the upstroke of the movable die member. The face of the die is always in view, thus permitting accurate placing of the work thereon, and also permitting the operator to see that the die is always clean so that fresh, sharp impressions are secured.

Having thus described my invention, it is obvious that various immaterial modifications may be made in the same without departing from the spirit of my invention; hence I do not wish to be understood as limiting myself to the exact form, construction, arrangement and combination of parts herein shown and described or uses mentioned.

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

1. A toggle press comprising a movable die member, a stationary die member, and toggle means for actuating said movable die member to and from said stationary member, said toggle means comprising a pair of pivotally interconnected arms, the other end of one of said arms pivoted to said movable die member, the pivoted end of the second arm pivoted to the frame of the press, the other end of said last-mentioned arm having a roller thereat, a cam engageable with said roller to actuate said toggle and move said movable die to and from said stationary die member, and cushioning means on said cam face.

2. A toggle press comprising a movable die member, a stationary die member, and toggle means for actuating said movable die member to and from said stationary member, said toggle means comprising a pair of pivotally interconnected arms, the other end of one of said arms pivoted to said movable die member, the pivoted end of the second arm pivoted to the frame of the press, the other end of said last-mentioned arm having a roller thereat, and a cam engageable with said roller to actuate said toggle and move said movable die to and from said stationary die member, said cam provided with an insert of cushioning material.

3. A toggle press comprising a movable die member, a stationary die member, and toggle means for actuating said movable die member to and from said stationary member, said toggle means comprising a pair of pivotally interconnected arms, the other end of one of said arms pivoted to said movable die member, the pivoted end of the second arm pivoted to the frame of the press, the other end of said last-mentioned arm having a roller thereat, and a cam engageable with said roller to actuate said toggle and move said movable die to and from said stationary die member, said cam provided with an insert of cushioning material disposed to cushion the movement of the roll after the relief of the pressure on the toggle.

4. A toggle press comprising a frame, a movable die member and a relatively stationary die member therein, a pair of toggle arms hinged together at one end, a pivotal bearing between one of said arms and the movable die member, a pivotal bearing between the other of said arms and said frame, a roller carried at the free end of said last-mentioned arm, a cam engageable with said roller to actuate the toggle arms, said cam provided with a slightly yieldable insert in its face for cushioning the release of the

toggle arm after the pressure has passed its maximum and the parts have started to retrieve, means for driving said cam, and means for adjusting the relatively stationary die member in the frame, said last-mentioned means comprising a bolt slidable through said frame and threadedly engageable with said last-mentioned die member, means for adjustably locking said bolt in position, a tapered wedge adjustably engageable between said movable die member and frame, and means for holding said wedge in its adjusted position.

5. In a press provided with a toggle arm and actuating member therefor, a yieldable cushioning member for cushioning the toggle arm at its initial retrieving movement.

In testimony whereof, I have hereunto signed my name.

JOSEPH O. POLLACK.