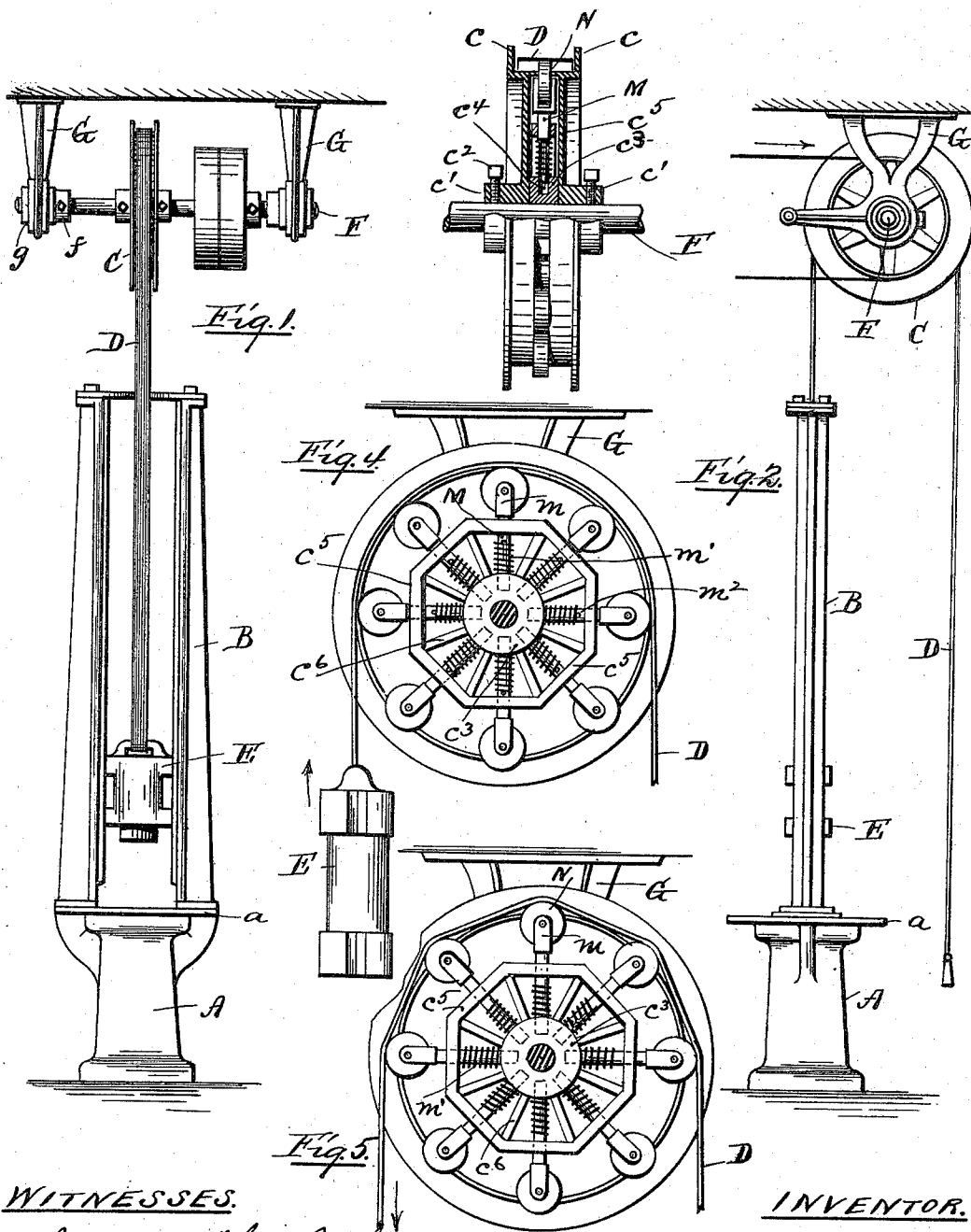


(No Model.)

J. McWILLIAMS.
LIFTING WHEEL FOR DROP PRESSES.

No. 576,324.

Fig. 3. Patented Feb. 2, 1897.



WITNESSES.

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JOHN MCWILLIAMS, OF PROVIDENCE, RHODE ISLAND.

LIFTING-WHEEL FOR DROP-PRESSES.

SPECIFICATION forming part of Letters Patent No. 576,324, dated February 2, 1897.

Application filed June 4, 1896. Serial No. 594,270. (No model.)

To all whom it may concern:

Be it known that I, JOHN MCWILLIAMS, of the city and county of Providence, in the State of Rhode Island, have invented certain new and useful Improvements in Lifting-Wheels for Drop-Presses; and I declare the following to be a specification thereof, reference being had to the accompanying drawings.

Like letters indicate like parts.

Figure 1 is a front elevation of a drop-press having my improvement thereon. Fig. 2 is an end elevation of the same. Fig. 3 is a view of a shaft and its pulleys with my improvement partly in elevation and partly in diametrical section. Fig. 4 is a view of my improved wheel with the weight or die in its elevated position thereon. Fig. 5 is an elevation of said wheel when not in use.

My invention relates to the class of drop-presses used by manufacturing jewelers and others for striking up sheet-metal blanks into various ornamental forms. In this kind of press a weighted die or drop-hammer, movable in vertical guides or ways, is raised by means of a strap connected with said drop-hammer and passing over a wheel or pulley, which hammer is let fall from its elevated position upon the sheet-metal blank which lies upon a corresponding die upon the bed of the machine.

My invention consists in providing such a press with a wheel comprising a series of radially-arranged arms loosely mounted on the shaft and normally kept in an extended position by the action of spiral springs on said arms, respectively, each arm having a roller at its outer end, as hereinafter particularly specified.

In the drawings, A is the standard of the press, and *a* is the bed thereof.

B is a vertical post or support having guides or ways.

C is the wheel over which the strap or belt D passes, having at its end the usual drop-hammer E, provided with a suitable die on its lower face, as usual.

F is a shaft mounted in hangers G G, which extend down from the ceiling. The hangers G G have the tubular bearings *g g*, and the shaft F has the collars *f f*, with set-screws. The fast and loose pulleys are mounted on said shaft, as shown in Fig. 1.

The wheel C is made in two sections, as illustrated in Fig. 3, each having a peripheral flange *c* and a centrally-perforated hub *c'*, by which it is mounted on the shaft, and secured in position thereon by the set-screws *c''*. Thus the wheel C turns with shaft F by the power communicated to said shaft by the fast pulley, the latter being turned by a belt, as indicated in Fig. 2.

Between the two sections of the wheel C is an independent wheel made up of a centrally-perforated block or hub *c³*, having a series of radially-arranged sockets *c⁴* and a series of angularly-arranged bars *c⁵*, supported by radial braces or spokes *c⁶* from the block or hub *c³*, each bar *c⁵* having openings or apertures therein. In the sockets *c⁴* of the hub *c³* and in the openings or holes in the bars or frame *c⁵* are mounted arms M, longitudinally movable therein and each provided with a bifurcated end or yoke *m*, within which is a roller N, pivotally mounted. A spiral spring *m'* surrounds each arm M and has its inner bearing against the edge of the hub *c³* and its outer bearing against a pin *m²*. The strap D lies on the rollers N of the upper half of said inner wheel, as shown in Fig. 3. In said figure it is seen that the arms M are normally extended outwardly by the expansive force of the springs *m'*. When the strap D is drawn to lift the drop-hammer E, the strap forces inwardly the arms M and compresses the springs *m'* in the upper half of said inner wheel, as seen in Fig. 4; but when the hammer E has fallen to position upon the blank or to the bed of the press the arms M are automatically moved outwardly again by the expansion of the springs *m'*. The rollers N thus serve to give a proper support to the strap D, which passes over them and prevents friction. Thus the strap D is not heated by a rapid sliding friction on the smooth periphery of a pulley, as heretofore, but while the wheel C rotates in one direction with the shaft F the inner wheel is wholly independent both of said shaft and the wheel C and has its own separate movement and rotation, with the practical result that the whole force of the falling hammer is utilized, whereas in the common construction fully thirty per cent. of the power of the falling hammer is lost or destroyed by the friction between the strap and the wheel.

I claim as a novel and useful invention and desire to secure by Letters Patent—

In a drop-press, the combination of the drop E and strap D, of the wheel C, made in two 5 sections, each having a tubular hub by which they are rotatably mounted on a shaft, and also having a peripheral flange *c*, the centrally-perforated circular block *c*³ with radial sockets *c*⁴, the angular frame or bars *c*⁵ having ap- 10 ertures or openings and connected with said central block by the braces *c*⁶, the radially-arranged arms M, movably mounted in the sockets of said central block and in the open-

ings of said angular frame, spiral springs *m*¹ surrounding said arms M respectively, and 15 having their inner bearing against said central block and their outer bearing against pins *m*² in said arms M, and a roller N, rotatably mounted at the outer end of each radial arm M, all operating substantially as shown and for 20 the purpose specified.

JOHN MCWILLIAMS.

Witnesses:

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