

A. W. ROOVERS.

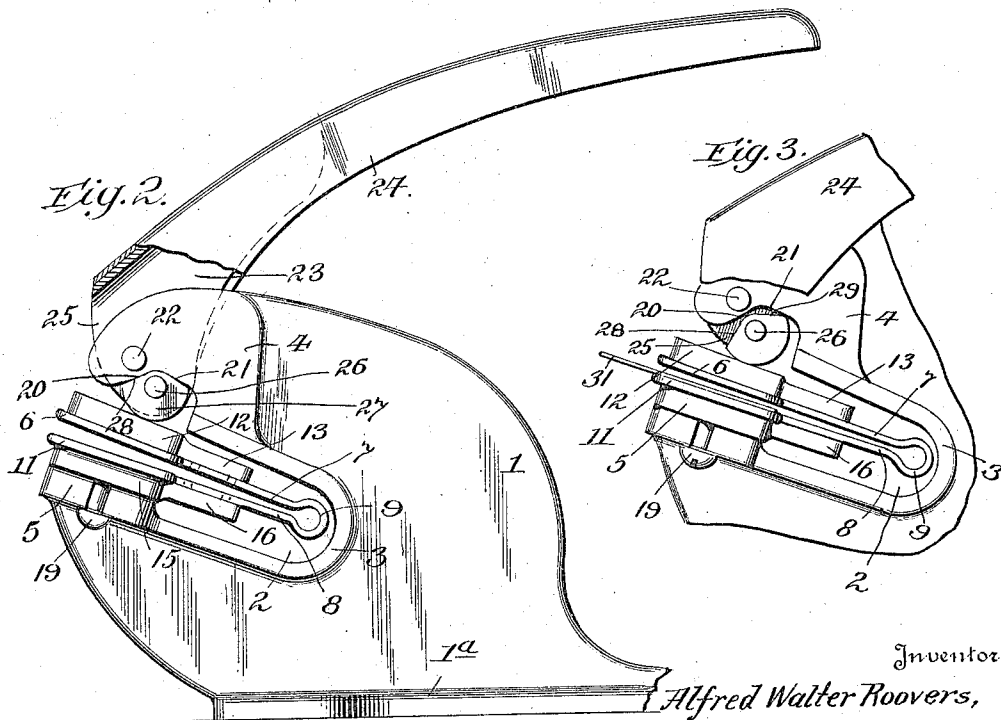
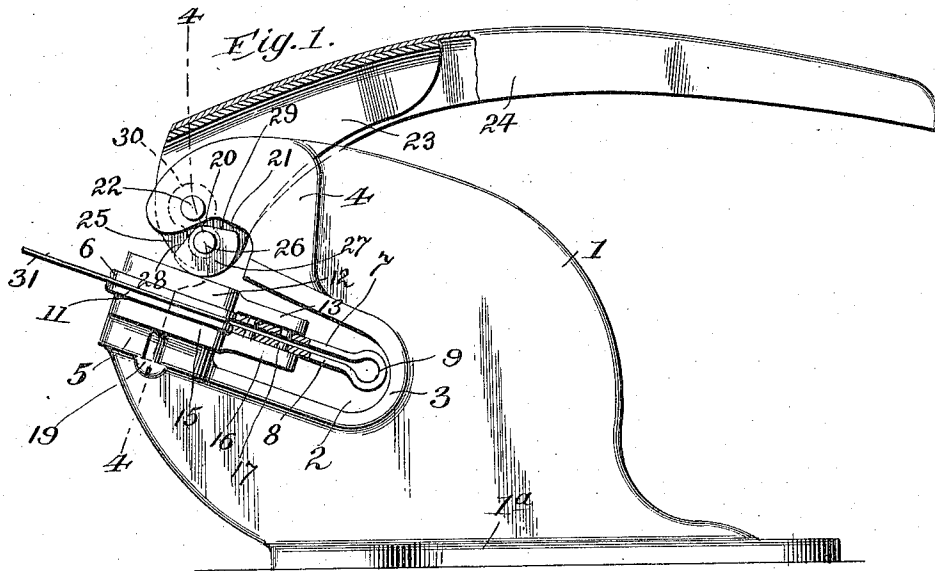
DIE PRESS.

APPLICATION FILED JULY 23, 1914.

1,162,883.

Patented Dec. 7, 1915.

2 SHEETS—SHEET 1.



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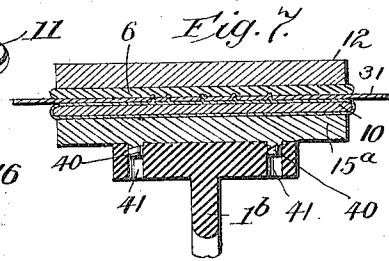
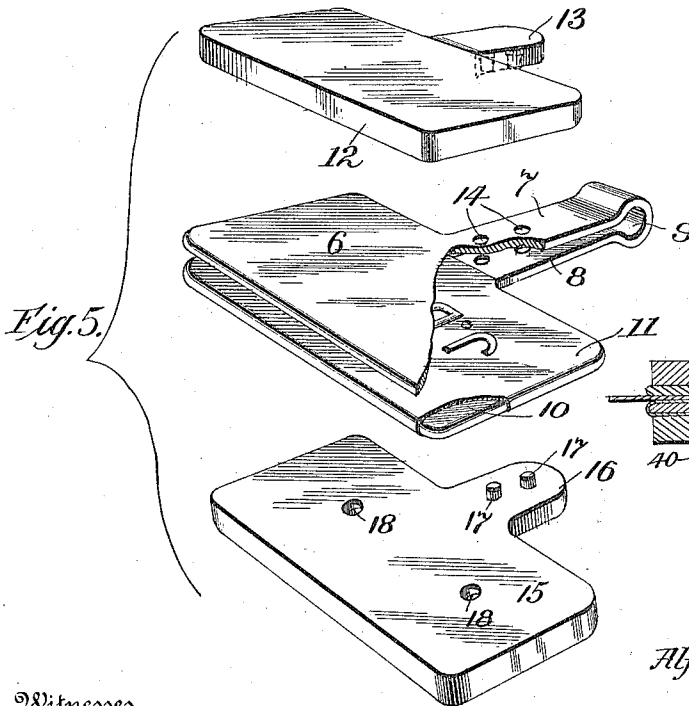
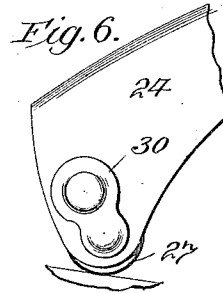
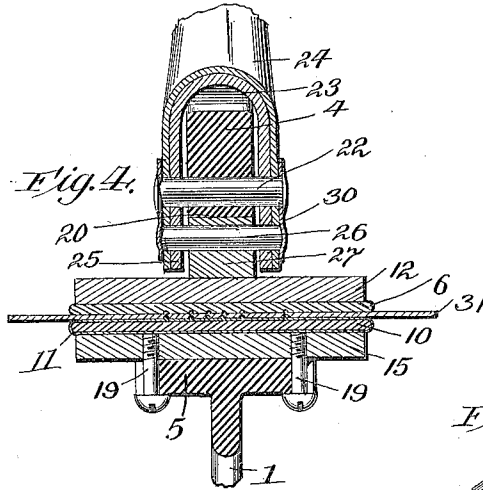
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

ALFRED WALTER ROOVERS, OF BROOKLYN, NEW YORK.

DIE-PRESS.

1,162,883.

Specification of Letters Patent.

Patented Dec. 7, 1915.

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To all whom it may concern:

Be it known that I, ALFRED W. ROOVERS, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Die-Presses, of which the following is a specification.

My present invention pertains to an improvement in die-presses, the construction and advantages of which will be hereinafter set forth, reference being had to the annexed drawings; wherein:

Figure 1 is a side elevation of the press, partly in section, the dies being shown in their closed, embossing position; Fig. 2 is a similar view, the dies being fully open; Fig. 3 a like view of the dies and a portion of the operating mechanism therefor, showing the parts in the relations which they assume between the fully-closed and fully-opened positions of the dies; Fig. 4 a vertical sectional view, taken on the line 4-4 of Fig. 1; Fig. 5 a perspective view of the dies, the spring supports and the sustaining or presser plates; Fig. 6 a side elevation of the lower end of the operating lever; and Fig. 7 a sectional view showing an elevation of the structure.

The main object of the present invention is to provide a die-press which may be placed upon a desk or suitable stand, or any convenient position for operation, the dies being so located with reference to the base of the press that the material as, for instance, a sheet of paper, bill, or the like, may be readily inserted prior to the actuation of the dies.

A further object of the invention is to provide sustaining and presser plates substantially co-extensive of the dies proper, whereby relatively thin or light dies may be employed and a clear-cut impression produced over the entire extent of the sheet being embossed.

A still further object of the invention is to provide a peculiar construction of the roller (and its allied parts) which operates upon one of the presser-plates to force the dies into embossing relation.

In the drawings, 1 denotes the main frame of the machine, which is provided at its forward side with a transversely-extending and upwardly-inclined opening 2. A flange 3 is preferably provided around the margin of said opening, and the upper portion of

the forwardly-extending arm 4 of the frame is thickened or made somewhat heavier than the other portions thereof. The frame will be provided with a foot-piece or base 1^a, which may be secured to a desk or other suitable support.

Adjacent to the outer end of the opening 2 and upon the lower wall thereof, are provided two outwardly-extending slotted ears 5, which form the support for the lower bearer or sustaining plate hereinafter referred to. The dies are of substantially the form shown in Letters Patent No. 1,016,292, granted to me under date of February 6, 1912. The upper, female, die 6 is formed as an integral portion of a spring arm 7 secured to a similar arm 8 by a curved or bowed portion 9, the arm 8 having formed integrally therewith a plate 10 to which is secured a sheet-metal male die 11. The arms 7 and 8, together with the bowed section 9, are formed of spring steel, and tend to separate the dies and to throw the parts into the positions shown in Fig. 2. The die 6 and plate 10, as will be clearly seen upon reference to Fig. 5, are much longer than the width of the spring-sustained arms, which arms, when the parts are secured in position, are housed in the rear portion of the opening 2.

A presser or sustaining plate is provided for each die. The upper plate 12 is substantially co-extensive of the die 6, and is provided with a rearwardly-projecting arm 13, having studs extending downwardly therefrom, which studs enter openings 14 formed in the upper spring arm 7. These studs make a relatively tight fit with the openings and hold the parts in place. A similar plate 15 is provided for the lower die, said plate being provided with a rearwardly-extending arm 16, having studs 17 adapted to pass into and make a relatively tight fit with correspondingly-spaced openings formed in the lower spring-arm 8. Said plate 15 is likewise provided with threaded openings 18 adapted to receive screws 19 which pass up through slots in the ears 5, and to firmly hold said plate 15 upon the frame.

The lower marginal edge of the arm or thickened portion 4 of the frame is cut away, as best indicated in Figs. 1, 2 and 3, forming bearing faces 20 and 21, which stand at an obtuse angle to each other, and the purpose

of which will presently appear. Fulcrumed upon a pin 22 which extends through the forward portion of the arm 4 and relatively close to the face 21, is an operating lever or handle composed of two parts, 23 and 24. Said parts are produced from sheet metal bent to form, and nested, the part 23 fitting within the part 24, and being relatively short and designed to produce strength at the forward end of the lever, where the greatest strain comes upon the same. Said lever is fashioned so as to straddle the upper portion of arm 4, and the downwardly-projecting ears 25 thereof receive the fulcrum-pin 22 and likewise form the support for a cross-pin 26 upon which is mounted a segmental roller 27, said roller being provided at the upper side thereof with flat bearing faces 28 and 29. The pin 26 is maintained in position by plates 30, see Fig. 6, which are fulcrumed upon the pin 22, being held in position thereon by the heads formed upon said pin, while the lower end of the plates may be swung downwardly and over the ends of the pin 26, said lower portions being slightly protruded so as to fit over the projecting ends of the pin 26, whereby the plates are held against accidental movement when once positioned, and pin 26 maintained in place.

In Fig. 7 is shown a slight modification of the invention, wherein the lower presser or sustaining plate, designated by 15^a, is shown as provided with a pair of downwardly-extending pins 40, adapted to pass into openings 41, formed in the frame of the machine, denoted by 1^b. The pins might, however, as will be readily appreciated, be passed into the slotted ears such as previously described, in order to hold the plate in position. This construction is advantageous when it is desired to remove the dies and the plates for the substitution of other dies. One, by simply pressing the die-covers together with the fingers, while the lever is elevated, may bring the dies together and then lift them as a whole, in order to release the pins from the openings. Other dies may then be substituted and the parts replaced.

The operation of the press is substantially as follows: Normally the dies are held apart through the action of the spring arms 7 and 8, and by reason of the upward movement of the upper die 6 and the plate 12 the handle or lever 24 will be thrown upward into the position shown in Fig. 2. By making the handle in the manner specified, that is, forming it of sheet metal and only reinforcing the forward end upon which the greatest strain comes, the spring will readily throw the parts upwardly. This movement is facilitated by the employment of the roller 27, which moves from the position shown in Fig. 1, through that shown in Fig. 3, to the final position, shown in Fig. 2. The rolling

contact between the roller and the upper plate 12 prevents binding or cramping of the parts and undue wear of the plate and roller. To positively secure the movement of the roller as the handle or lever is thrown upwardly, the inclined face 29 upon the roller and the under face 21 of the arm 4 are utilized. Starting from the position shown in Fig. 1, to a point where the dies are partially opened, as in Fig. 3, it will be seen that the rear portion of the face 29 contacts with the face 21, and as the die and plate move upwardly the roller will be positively rotated about its supporting pin 26 until it comes to the position shown in Fig. 2. Upon the downward movement of the lever, the roller will pass from the position shown in Fig. 2, to that shown in Fig. 1, in which the dies are illustrated as closed upon the sheet (designated by 31) which is to be embossed. Furthermore, by cutting away the under face of the arm 4 and the upper face of the roller, I am enabled to use a relatively large roller and still maintain the fulcrum pin 22 and the cross pin 26 in close relationship, whereby the effective leverage of the member 24 is increased over what it would be if a complete roller, formed upon the same radius as that disclosed in the drawings, were employed.

The construction as above set forth, is at once simple, strong and compact, and enables me to utilize the same frame for various forms of dies, which dies, as above noted, will preferably be formed as set forth in my prior patent above referred to.

Having thus described my invention, what I claim is:

1. In a die press, the combination of a frame provided with a transversely-extending opening in the forward portion thereof; a pair of ears projecting laterally from the frame adjacent the forward lower edge or wall of the opening; a pair of dies; a spring carrier for said dies extending rearwardly into the opening; means for securing the lower die and carrier to said ears; and means located above the upper die and mounted on the frame for moving the upper die into embossing relation with the lower die.

2. In a die press, the combination of a frame provided with a transversely-extending opening formed in the forward portion thereof; a pair of ears projecting laterally from the frame adjacent one edge or wall of the opening; a pair of dies; a spring carrier for said dies, the dies being carried at the outer ends of said carrier, and the body of the carrier extending rearwardly into the opening; die-sustaining plates secured to the ends of the carrier over the dies; means for securing one of said plates and its die to the ears; and means carried by the frame for moving the oppo-

site die into operative relation with the fixed die.

3. In a die press, the combination of a frame having an opening extending rearwardly therein; a pair of spring arms connected at one end and each carrying at its normally free extremity a die; a sustaining plate overlying each die; means for detachably connecting the lower plate to the frame of the press while the dies and arms are housed within the opening therein; and means for forcing said dies together.

4. In a die press, the combination of a frame; a pair of spring-separated dies carried thereby; a lever fulcrumed upon the frame adjacent one of said dies; a roller supported by the lower end of the lever and bearing upon one of said dies; and cooperating faces formed on the roller and frame adapted to positively rotate the roller as the dies are separated and the lever is thrown upwardly.

5. In a die press, the combination of a frame; a pair of spring-separated dies carried thereby; a lever fulcrumed upon the frame adjacent one of said dies; a roller carried by the lower end of the lever and normally resting upon the adjacent die, said roller being provided upon its upper portion with two flat faces converging upwardly; and similarly formed faces upon the adjacent portion of the frame, whereby as the dies separate the roller and frame faces will

contact and the roller will be positively rotated.

6. In a die press, the combination of a frame; a pair of spring-separated dies carried thereby; a lever fulcrumed upon the frame above one of said dies; a roller journaled upon a pin carried by the lower end of the lever, said pin lying below and in rear of the fulcrum of the lever, the roller having on its upper side two flat and upwardly-converging faces; and similarly formed faces upon the overlying adjacent portion of the frame, whereby as the dies separate when released from pressure, the faces will contact and the roller will be positively rotated.

7. In a die press, the combination of a frame; a pair of spring-separated dies carried thereby; a lever fulcrumed upon the frame adjacent one of said dies; a roller carried by the lower end of the lever and normally resting upon the adjacent die; and means for positively rotating said roller when the lever is released from pressure and the dies separate.

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

ALFRED WALTER ROOVERS.

Witnesses:

W. W. BENNETT,
WALTER LOCKETT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."