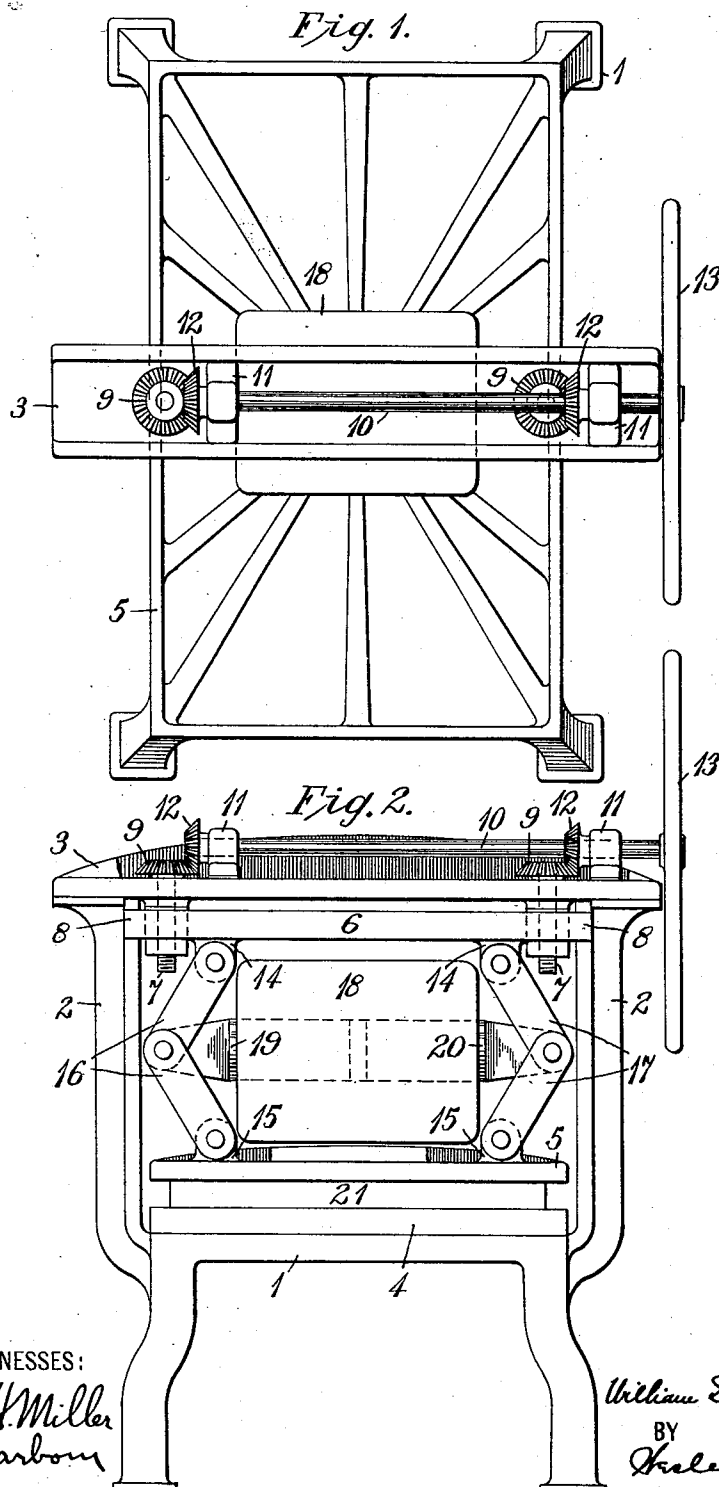


W. S. HADAWAY, JR.
MATRIX DRYING PRESS.
APPLICATION FILED MAY 1, 1909.

1,015,953.

Patented Jan. 30, 1912.

2 SHEETS—SHEET 1.



WITNESSES:

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R. J. Carbone

INVENTOR

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2 SHEETS—SHEET 2.

Fig. 3.

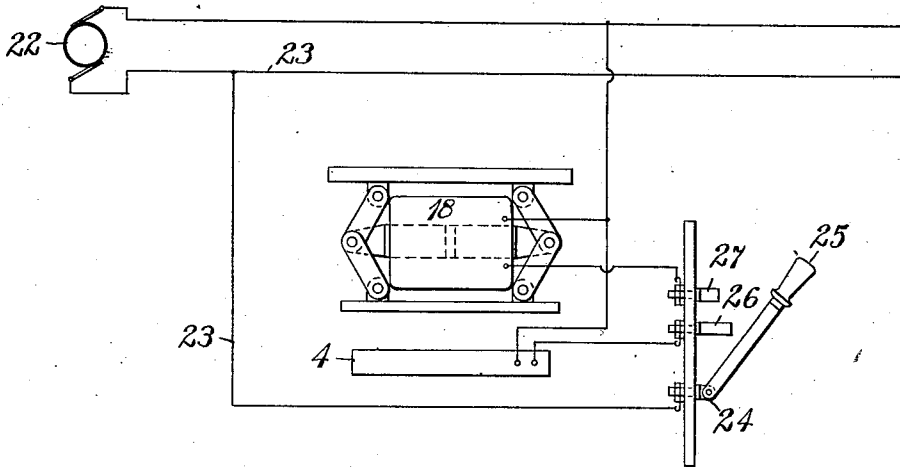
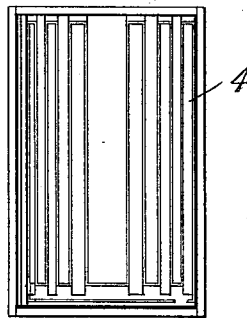


Fig. 4.



WITNESSES:
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UNITED STATES PATENT OFFICE.

WILLIAM S. HADAWAY, JR., OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

MATRIX-DRYING PRESS.

1,015,953.

Specification of Letters Patent.

Patented Jan. 30, 1912.

Application filed May 1, 1909. Serial No. 493,407.

To all whom it may concern:

Be it known that I, WILLIAM S. HADAWAY, Jr., a citizen of the United States, and a resident of East Orange, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Matrix-Drying Presses, of which the following is a specification.

My invention relates to matrix drying presses, embossing presses and similar devices, and it has for its object to provide a device of this character which shall be simple and durable in construction and electrically operated, and which may be provided with one or more electrically heated working surfaces.

Patent No. 890,858, granted June 16, 1908, to the Hadaway Electric Heating & Engineering Co., upon an application filed by me, illustrates and describes an electric heater which is well adapted for use in connection with stamping and embossing press machinery, and it is one of the purposes of my present invention to embody a like or similar heater in a book-binder press or similar device which, for purposes of simplicity, is also electrically operated. I also contemplate the employment of means for electrically operating presses of the character indicated above whether they are or are not electrically heated.

Figure 1 of the accompanying drawings is a plan view and Fig. 2 is an elevation of a press constructed in accordance with my invention, Fig. 3 is a diagrammatic view of the circuit connections for the device shown in Figs. 1 and 2, and Fig. 4 shows the electric heater which forms one of the working surfaces of the device.

Referring to Figs. 1 and 2 of the drawings, the device here shown comprises a stationary frame or base 1 having vertical guide ways 2 projecting upwardly therefrom, and a cross beam 3; a stationary working surface plate 4 which is electrically heated, and a movable working surface plate 5 which is adjustably connected to the cross beam 3 and is electrically operated. A supporting carriage 6 is adjustably secured to the cross beam 3 by means of suspension bolts 7 and is guided in its movement toward and away from the cross beam by projections 8 which register with the guide ways 2. The heads of the suspension bolts 7 are provided with beveled gears 9 and a

horizontal shaft 10 is so supported in projections 11 on the cross beam 3 that beveled pinions 12, with which it is provided, are adapted to mesh with the beveled gears 9. In this way, the concurrent rotation of the gears 9 may be effected by means of a hand wheel 13, which is secured to the outer end of the shaft 10, and an adjustment of the carriage 6 may be obtained. This carriage 6 is provided with downwardly extending projections 14 which correspond, in position, to a pair of upwardly extending projections 15 on the working surface plate 5. The plate 5 is suspended from the plate 6 by two pairs of links 16 and 17 which are pivoted to the projections 14 and 15. An operating electro-magnet 18 is located between the plates 5 and 6, with its axis horizontal, and is provided with a pair of similar armatures 19 and 20, both of which are movable and the outer extremities of which are separately pivoted to the points of connection between the links 16 and 17. The arrangement of parts is such that when the plate 5 is raised out of engagement with the work, by means of the hand wheel 13, the armatures 19 and 20 come together at the center of the coil 18, but, when some article 21 is laid in the matrix space on the plate 4 and the plate 5 is lowered into engagement with it, the weight of the plate 5 will first be borne by the article 21 and then, as the hand wheel is further adjusted in the same direction, the armatures 19 and 20 will be slightly separated, as shown in Fig. 2 of the drawings.

The operation of the device will be more readily understood by reference to Figs. 3 and 4. If it is assumed that the work to be pressed is in position and that the movable plate 5 has been brought into engagement with it, as indicated above, electrical energy may be supplied from any suitable source, such as a generator 22, through conductor 23 to terminal 24 of a control switch 25. From this point, the circuit may be completed either through the electric heating device 4, which forms the stationary working surface plate of the press, alone or through the heater and the operating coil 18, according as the switch 25 is thrown into engagement with contact member 26 or with both contact members 26 and 27. It will probably be unnecessary to separate the contact members 26 and 27 for, if it is always desired to energize the magnet winding and the heater at

the same time, these members may be electrically connected, either in series or in multiple circuit, a single switch being provided for interrupting the circuit, in either case.

5 While only the stationary working surface of the press shown in the drawings is adapted to be electrically heated, it may be found desirable to provide a heater for the movable plate or for both plates. The scope
10 of my invention is not, however, restricted to a press having electrically heated parts and this point will be determined by the service for which the device is intended.

15 It may be found desirable to insert an external variable resistance in series with the electric heating device for or to provide a controller for changing the internal connections of the heater in order to obtain an adjustment of the heat generated.

20 It will, of course, be readily understood that the operating magnet may similarly be controlled if an adjustment of the pressure exerted by the magnet is required. A certain degree of variation may be obtained in
25 the pressure exerted by the magnet by suitably adjusting the hand wheel 13, since the air-gap existing between the movable armature members may, in this way, be varied.

30 It is evident that various modifications may be effected in the device illustrated without departing from the spirit of my invention, and I desire that only such limitations shall be imposed as are indicated in the appended claims.

35 I claim as my invention:

1. A press comprising an electrically heated working-surface plate, an electrically operated working-surface plate and a single
40 means for governing the supply of energy to both members.

2. A press comprising an electrically

heated stationary working-surface plate, a mechanically adjustable movable member having a cooperating working-surface plate suspended therefrom, electro-responsive
45 means for actuating said plate and a single switching device for governing the supply of energy to both members.

3. In a press, the combination with a stationary frame, vertical guide projections extending upwardly therefrom, and a cross
50 beam mounted on the projections, of an electrically heated working-surface plate secured to the frame, a suspension plate adjustably depended from the cross beam, a
55 cooperating surface plate connected to the suspension plate by links, and an operating electro-magnet for so separating the movable surface plate and the suspension plate as to move the surface plate into engage-
60 ment with the electrically heated surface plate.

4. A press comprising a movable working-surface plate, an adjustable carriage, toggle links between the carriage and the
65 plate, and electro-responsive means for actuating the toggle links to forcibly separate the plate from the carriage.

5. A press comprising an adjustable carriage, a working-surface plate, an electro-
70 magnet between said members having a pair of similar armatures or cores, and toggle links connecting the plate to the carriage, said armatures or cores being operatively connected to the links.
75

In testimony whereof, I have hereunto subscribed my name this 20th day of April, 1909.

WILLIAM S. HADAWAY, Jr.

Witnesses:

R. J. DEARBORN,
B. B. HINES.