

J. D. LIPPMANN.
MICROMETER ADJUSTER FOR EMBOSsing PRESSES.
APPLICATION FILED APR. 18, 1921.

1,390,799.

Patented Sept. 13, 1921.

3 SHEETS—SHEET 1.

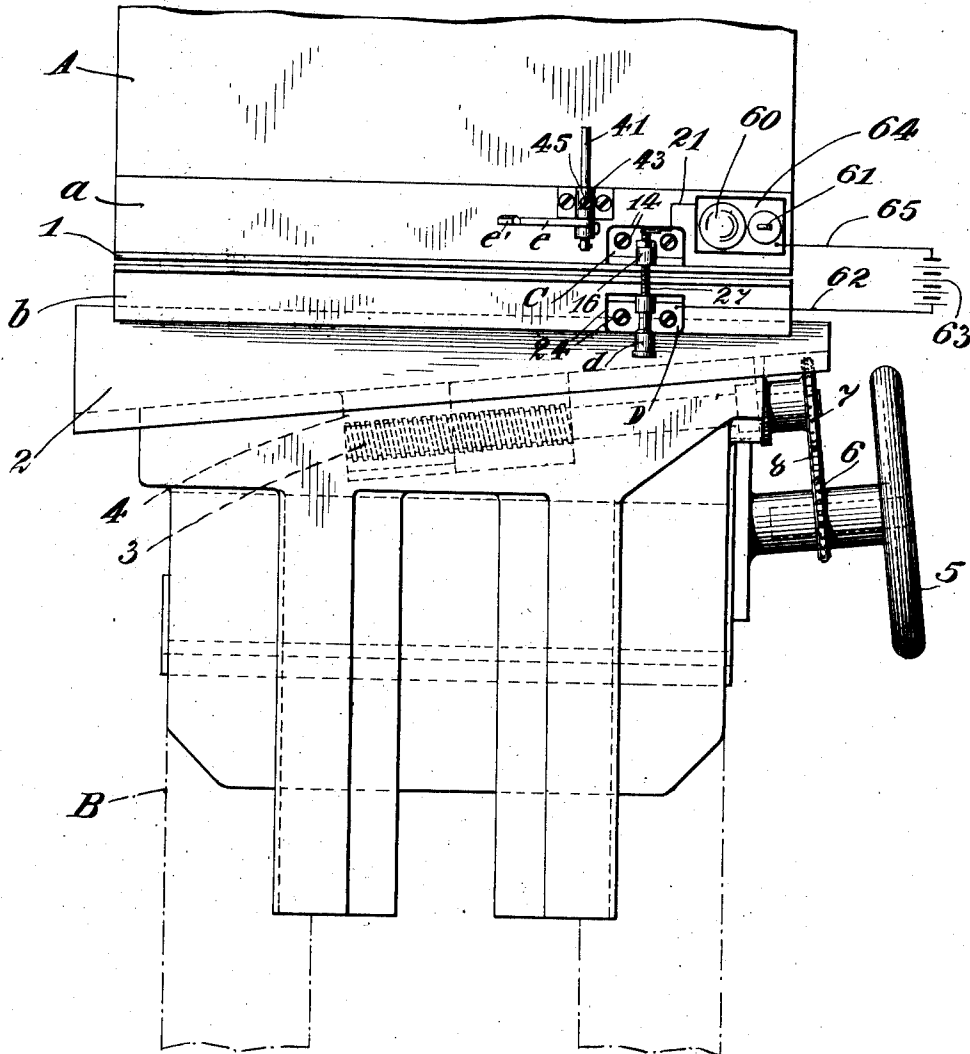


Fig. 1.

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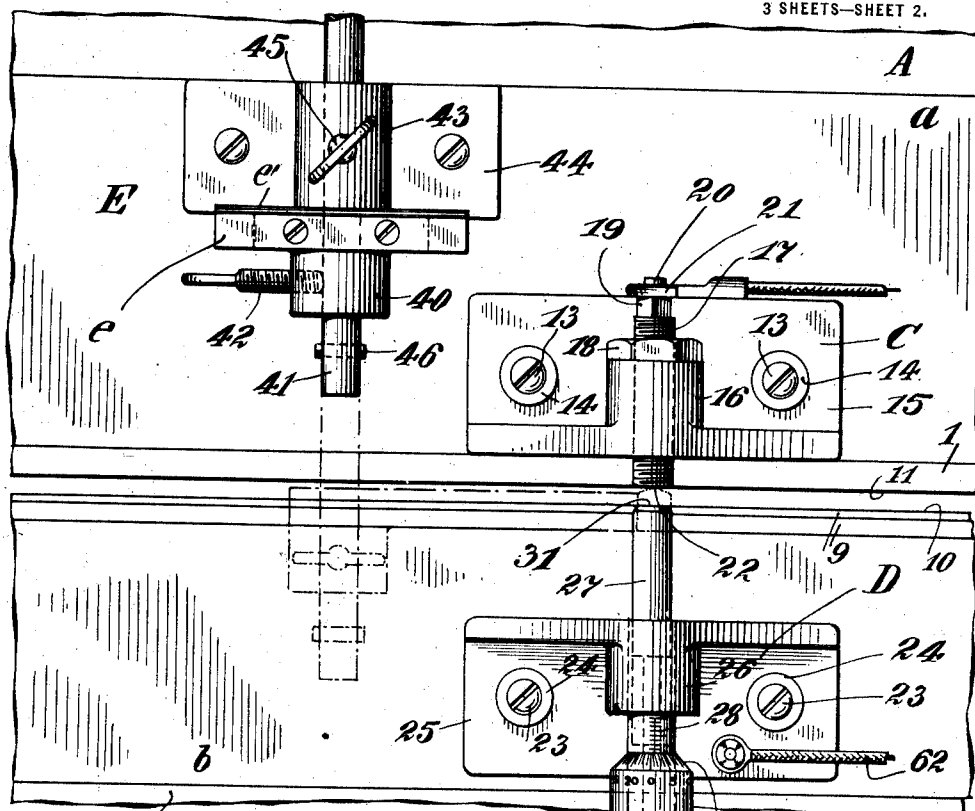


Fig. 2.

Fig. 3.

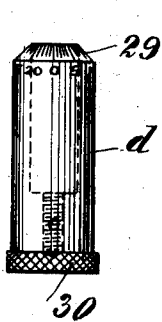
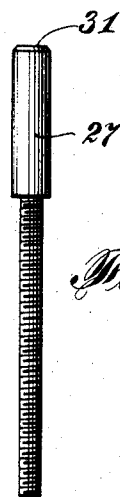


Fig. 4.



Fig. 5.



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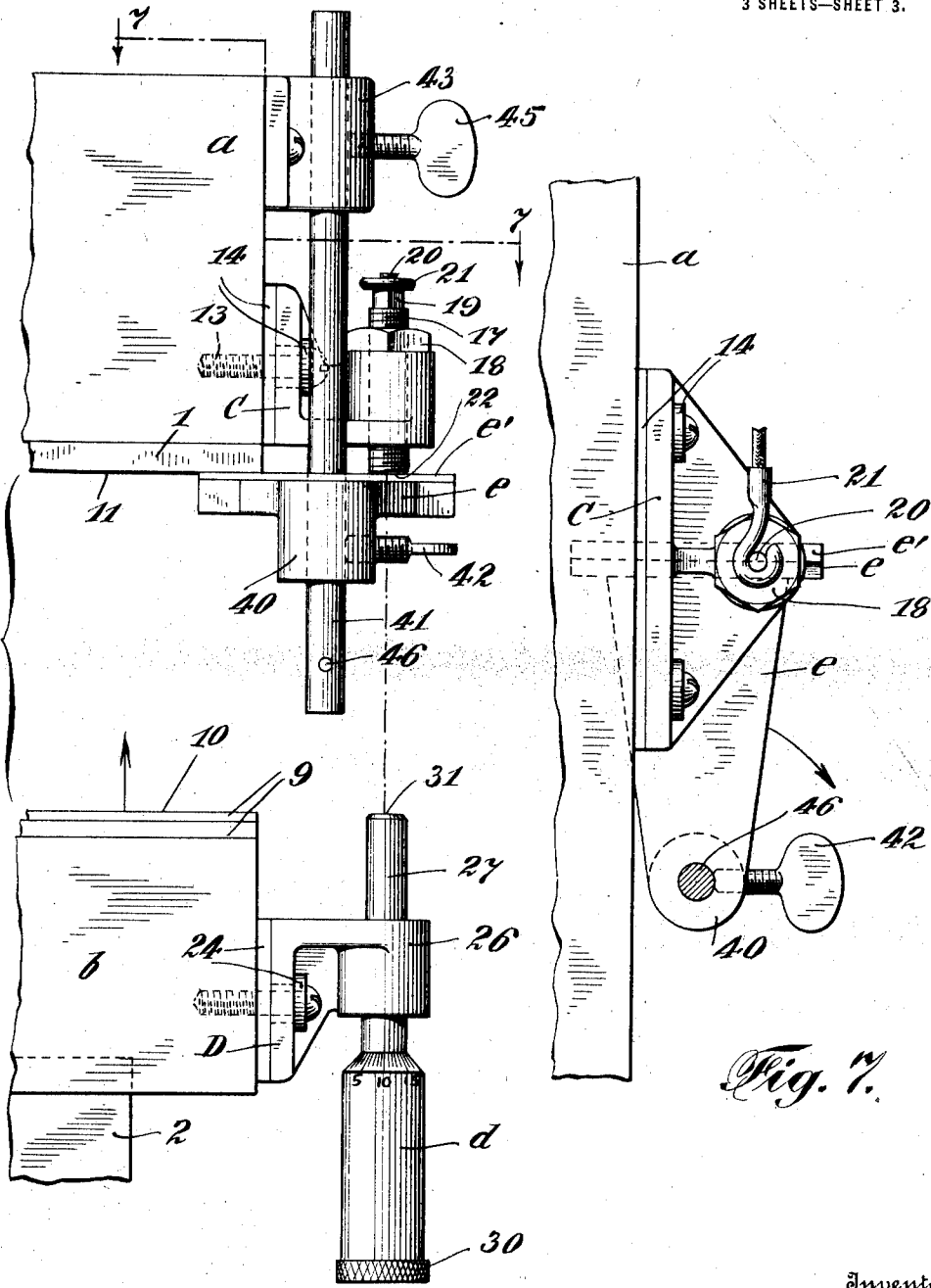


Fig. 6.

Fig. 7.

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UNITED STATES PATENT OFFICE.

JULIUS DANIEL LIPPMANN, OF NEW YORK, N. Y., ASSIGNOR TO EMIL WEINHEIM, OF NEW YORK, N. Y.

MICROMETER-ADJUSTER FOR EMBOSSING-PRESSES.

1,390,799.

Specification of Letters Patent. Patented Sept. 13, 1921.

Application filed April 18, 1921. Serial No. 462,220.

To all whom it may concern:

Be it known that I, JULIUS DANIEL LIPPMANN, a citizen of the United States, and a resident of New York, county and State of New York, have invented certain new and useful Improvements in Micrometer-Adjusters for Embossing-Presses, set forth in the following specification.

This invention relates to presses, more particularly to the accurate adjusting of the separation between the pressure plates of such presses. The adjustment of the separation of the pressure plates carried by the jaws of embossing presses is not important. Upon the accuracy of this adjustment is dependent the character of the finished work and heretofore the skill of an operator has alone been relied upon to make the necessary adjustment.

In presses of this character there are two power-operated, relatively movable pressure jaws (one of which is usually stationary) which carry each a pressure plate having parallel motion one relatively to the other and forming the flat faces or beds for the mounting of the embossing plate, which acts directly in contact with the work to give to it the desired finish. The pressure plate opposite the one carrying the embossing plate is customarily covered with a more or less compressible resilient matrix of uniform thickness, which yields upon the approach of the pressure plates and actually exerts the working pressure upon the work strip.

In presses of this character, one of the pressure plates is adjustably movable so that its face is constrained to move in parallel planes relatively to the pressure jaw with which it is associated. Parallel motion means for adjusting the position of this adjustable pressure plate must be provided to accomplish the necessary adjustment of a press of this character.

More specifically, the object of the present invention is to provide for the adjustment of the adjustable pressure plate through the parallel motion means under the control of an accurately graduated mechanism so that relatively unskilled labor is capable of effecting an accurate adjustment of the press, according to any predetermined direction sheet. To this end I propose to provide an abutment contact fixed relatively to one of the pressure plates and a coöperat-

ing, graduated, adjustable contact mounted on the adjustable pressure plate, so that an adjustment of the adjustable contact to accord with any predetermined scale measurement may be made by a relatively unskilled laborer whereby the two contacts, when brought together by an adjustment of the parallel motion means, will fix the correct adjustment for the entire press.

A further object of the invention is to provide for the most convenient embodiment of these contacts; for the most efficient positioning of the same relatively to the mechanism of the press; to provide means for setting the tip of the abutment contact in the plane of the embossing plate; and to provide an electrical telltale for the contacting of the adjustable contact with the abutment contact.

The above will better be understood by reference to the illustrative embodiment of my invention, described in the following specification in connection with the accompanying drawings which form a part hereof and in which like characters designate corresponding parts in the several figures. In the drawings—

Figure 1 is a side elevation of an embossing press fitted with my invention, with parts broken away;

Fig. 2 is a view drawn to an enlarged scale, corresponding to Fig. 1, showing the contact mechanism proper;

Figs. 3, 4 and 5 are details of the micrometer contact;

Fig. 6 is a rear view, with parts broken away and with parts shown in section, of the adjustable contact mechanism associated with the pressure plates; and

Fig. 7 is a plan view, part shown in section, of my mechanism showing the operation of the finder for the plane of the embossing plate.

The top jaw of any commercial press (in the present embodiment an embossing press) is indicated by A and the bottom jaw by B. It is usual for the top jaw A to be stationary and the bottom jaw B to be power-driven to reciprocate toward and away from the top jaw A. The pressure plate *a* is fixed to the jaw A and, in the present instance, carries the embossing plate 1. The adjustable pressure plate *b* is constrained to move with the jaw B but is ad-

justable relatively thereto, as is customary, through some suitable parallel motion means such as the wedge-block 2, which is operated by the worm-screw 3, and threaded boss 4.

5 The handwheel 5 actually serves to effect the adjustment, which is shown in the drawings as vertically upward or downward for the pressure plate 3, suitable guides being provided to constrain the plate 3 against lateral
10 movement. The hand-wheel 5 operates through sprockets 6 and 7 and chain 8.

Any desired thickness of resilient sheet material such as card-board provides a compressible cushion or matrix 9 carried on the face of the adjustable plate 3. Thus it is
15 between the top face 10 of the matrix 9 and the bottom or embossing face 11 of the embossing plate 1 that the work strip is gripped. The reciprocation of the jaw B is not adjustable but, on the contrary, of
20 constant amount, so that the degree of pressure between the faces 10 and 11 is determined by the adjustment of the wheel 5 and by the thickness of the matrix 9. Calibrated work sheets or tables are made up
25 to accord with any given matrix 9 for the adjustment of the adjustable plate 3 and it is to effect this adjustment quickly and accurately that my present invention is particularly adapted. For this purpose I
30 mount an abutment contact C fixed relatively to the plate *a* and preferably affix it directly to the edge of this plate through the medium of screws 13 and suitable electrical insulation 14. This mechanism comprises
35 a bracket 15 having a boss 16 providing a threaded vertical opening for the adjustable threaded contact screw 17, which may be fixed in adjustment by the check-nut
40 18, the upper end being preferably provided with a square head for the reception of a turning tool and also providing a terminal 20 for the electrical connector 21. This
45 abutment contact mechanism and, as is obvious, specifically the tip 22 of the screw 17 cooperates with the adjustable contact mechanism D.

The adjustable contact mechanism D is suitably mounted preferably upon the edge
50 of the adjustable pressure plate 3 as by means of screws 23 and the electrical insulation 24, so that the entire mechanism is insulated from the press, as is likewise the case for the abutment contact mechanism C.
55 The mechanism D comprises the bracket 25 providing a boss 26 which mounts any relatively adjustable contact stem 27, the position of which is indicated by a suitable scale such as the scales 28 and 29 of a standard
60 micrometer gage *d* through the usual mechanism of which the stem 27 may be caused to move up or down in response to a turning of the knurled head 30.

The zero position for the tip 31 of the
65 stem 27 may at will correspond to the upper

plane of the adjustable plate 11 or of the upper face of a standard matrix or, in fact, any arbitrary position, as desired, the calibration of the work sheet according with the zero position.

In using my mechanism, it is necessary to position the tip 22 of the abutment screw 17 in the plane of the face of the embossing plate 1. This I accomplish readily by the auxiliary mechanism E which essentially
70 comprises a test table *e* having parallel movement relatively to itself and capable of being swung into position so that its top face *e'* may bridge over as an extension of the plane of the face 11 of the embossing
80 plate 1 to a position beneath the tip 22 of the abutment screw 17. With this table swung into position, as indicated in Fig. 6, the screw 17 is screwed down until it contacts with the face *e'* when its position is
85 fixed by the check-nut 18.

The table *e* is provided with a boss 40 sliding upon the stem 41 and fixable by the thumb-screw 42. The stem 41 is itself vertically mounted in the boss 43 of a bracket
90 44, suitably fixed to the plate *a*. The thumb-screw 45 provides for an adjustment of the stem 41 as well as its removal and fixing. The stop-pin 46 at the bottom of the stem 41 is convenient to prevent the table *e*
95 from dropping off. It is believed to be obvious how a manipulation of the thumb-screws 42 and 45 will permit the swinging table *e* to be swung into the work position of Figs. 6 and 7 until an adjustment of the
100 screw 17 is effected, and then how it may be swung clear of this position up into an idle position such as that indicated in Fig. 1, where it may be temporarily fixed by the thumb-screws.

In operating my mechanism, the press jaws A and B are stopped in their position of nearest approach responsive to the power-driving mechanism, not shown. The micrometer *d* is then adjusted so that its stem
110 27 is set to the adjustment indicated by the work sheet for the desired run for the press. This adjustment is indicated by the scales 28 and 29 and should correspond with a direct reading from the work sheet.

The hand-wheel 5 is then operated to cause an approach of the plate 3 to the plate *a*. As soon as the stem 27 contacts with the tip 22, the desired adjustment has been effected and no more movement of the hand-
120 wheel 5 should be made. To facilitate the schooling of unskilled labor in the operation of this mechanism, it is desirable to provide a telltale signal such as a bell or lamp 60 which may be controlled by a switch 61.
125 The lamp is connected by the lead 21 with the contact 17 while a lead 62 extends from the insulated bracket 25 to a suitable source of current such as the battery 63, which may be mounted away from the press or as a part
130

of the frame 64 mounting the lamp and switch. A second lead 65 is provided for the switch 61 to connect with the battery 63.

What I claim and desire to secure by United States Letters Patent is:—

1. Adjustable setting mechanism for presses comprising in combination relatively movable compression jaws; a pressure plate carried by each said jaw; parallel motion means for adjusting the position of one of said pressure plates relatively to a compression jaw; an abutment contact fixed relatively to one of said pressure plates; and a graduated gage having an adjustable contact adapted to cooperate with said abutment contact, said gage being fixed to said adjustable pressure plate.

2. Adjustable setting mechanism for presses comprising in combination relatively movable compression jaws; an adjustable pressure plate adjustably carried by one of said jaws; a second pressure plate carried by the other of said jaws; means for determining the adjustment of said pressure plates relatively to each other, comprising

an abutment contact fixed relatively to one of said pressure plates; and a cooperating adjustable contact having a graduated gage associated with the other pressure plate.

3. Adjustable setting mechanism for presses comprising in combination relatively movable compression jaws; an adjustable pressure plate adjustably carried by one of said jaws; a second pressure plate carried by the other of said jaws; means for determining the adjustment of said pressure plates relatively to each other, comprising an abutment contact fixed relatively to one of said pressure plates; a cooperating adjustable contact having a graduated gage associated with the other pressure plate; and an electrical indicator operable in response to the contacting of said adjustable contact with said abutment contact.

In witness whereof I have signed my name to this specification, this 16th day of April, 1921, at New York, county and State of New York.

JULIUS DANIEL LIPPMANN.