

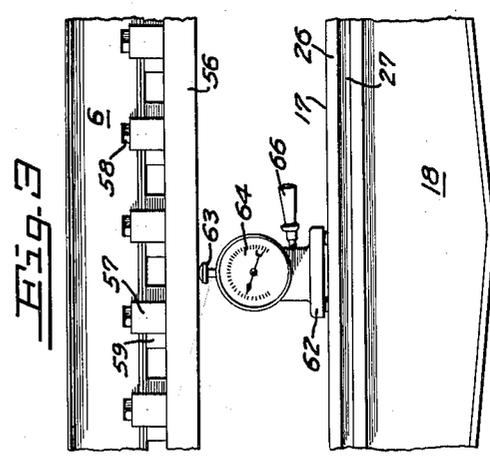
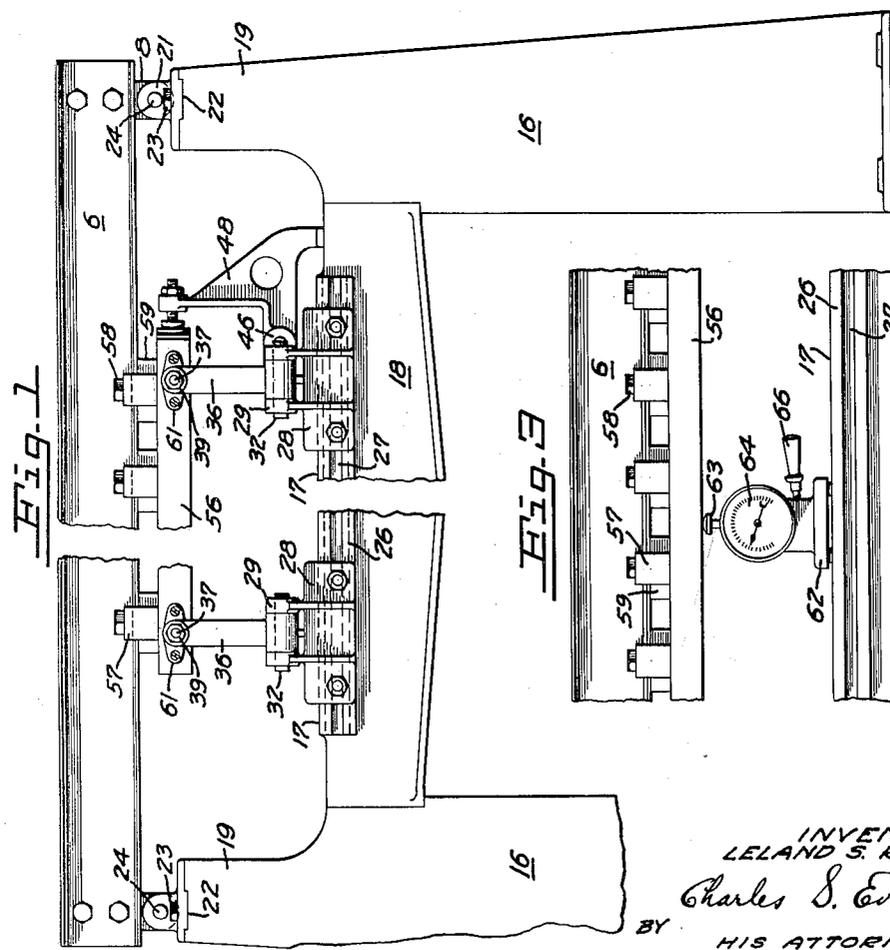
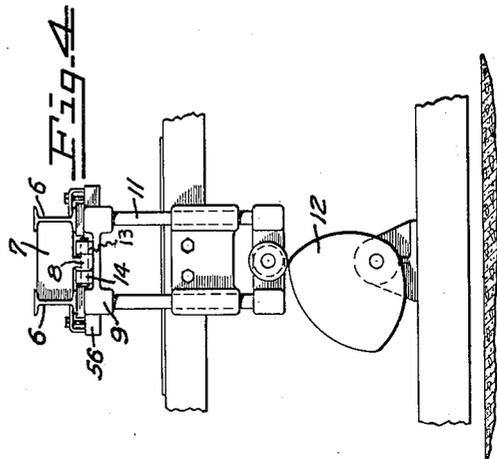
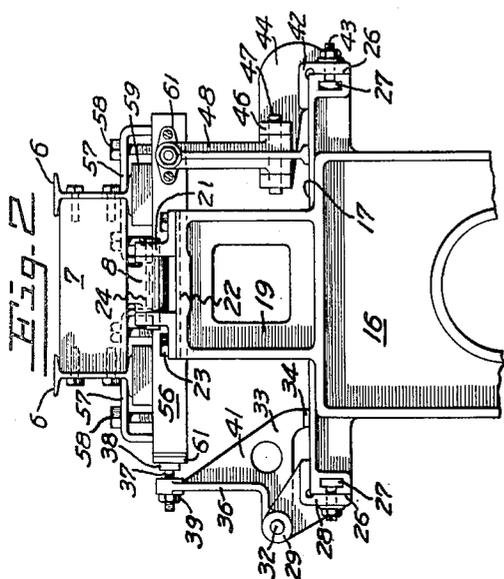
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PRINTING BLOCK ALIGNER

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UNITED STATES PATENT OFFICE

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PRINTING BLOCK ALIGNER

Application filed January 9, 1929. Serial No. 331,315.

My invention relates to block printing, and particularly to the printing of linoleum and felt base rugs or other floor coverings.

The presses on which such printing is done are large and expensive, and the fixed charges of interest, insurance, etc., on these presses constitute no small part of the cost of the floor coverings they produce. It is therefore essential for economic production that they be kept in active service as much of the time as possible. One of the objects of my invention is to provide a means of reducing the time required for setting up the press to print a new pattern.

Another object of my invention is to provide an accurate means of positioning a printing block on the press head without an extended series of approximations.

Still another object of my invention is to provide a device in which both the alignment of the printing block in a horizontal plane and its flatness with respect to the press platen may be predetermined before it is placed in the press.

My invention possesses other objects and valuable features, some of which will be set forth in the following description of my invention which is illustrated in the drawing forming part of the specification. It is to be understood that I do not limit myself to the showing made by the said description and drawing, as I may adopt varying forms of my invention within the scope of the claims.

The printing of floor coverings is accomplished on presses having platens seventy feet or more in length. The web on which the printing is done is drawn from a roll and over the platen by an intermittent movement. The various elements of the design are applied by wooden blocks, which are mounted on reciprocating press heads, each of which extends across the press platen. The blocks vary in size, shape, and type of printing surface, but are usually the full width of the web, and about a foot in length, with the design they are to apply engraved on the surface. Each block therefore prints a relatively small portion of the design at a time and must be positioned with great ac-

curacy in order that the design elements may register properly. Moreover, owing to the width of the block, and the fact that it is of wood and subject to warpage, it is also necessary that careful adjustments be made to insure its flatness. The practice has been to make these adjustments on the press, by the cut-and-try method, and this has resulted in a large loss of working time when a change in design was necessary.

Broadly considered, the device of my invention comprises a surface and means for holding the press head in a fixed relation therewith. Gauging means are provided for establishing the position of one or more points on the printing block with respect to the holding means. In use the head is removed from the press and placed in the holding means, and the printing block is mounted in place on the head in the position established by the gauging means. The mounting is then adjusted to bring elementary areas on the face of the block an equal distance from the surface. The head may then be replaced on the press and used without further adjustment.

Referring to the drawing:

Figure 1 is a side elevation of the device of my invention showing the press head and printing block mounted thereon. Portions are cut away to conserve space in the drawing.

Figure 2 is an end elevation of the device of Figure 1.

Figure 3 is a fragmentary view in elevation showing the method of adjusting the spacing of the printing block from the surface plate.

Figure 4 is a view of a portion of the printing press, showing the press head mounted for use.

In more detailed terms, the embodiment of my invention shown in the drawing is especially adapted for use with a press head comprising the parallel I-beams 6 which are joined at the ends by the cross members 7, each of which has a lug 8 formed thereon for engaging with the yoke 9 of the reciprocating slide 11 of the press, the slide being operated by the cam 12. The lug 8 is drilled

to take a pin 13, which passes thru the ears 14 of the yoke, and thus holds the head in a fixed position with respect to the other parts of the press.

5 The device of my invention preferably comprises a pair of end pedestals 16 between which extends a surface plate 17, reinforced by the webs 18. Extensions 19 of the pedestals rise above the level of the surface plate, and ears 21 are secured in seats 22 formed in their tops by the cap screws 23. The ears are positioned accurately when the device is erected, and thereafter are left undisturbed, the adjustment being such that the press head may be mounted on the device and held by the pins 24 in a manner similar to its mounting on the press and substantially parallel to the surface plate.

20 Carefully surfaced faces 26 on each side of the surface plate have T-slots 27 formed therein. Secured to the T-slots on one side are two brackets 28, each bearing against the surface plate and the face 26 and having arms 29 thereon between which a gauge lever is journaled on a pin 32. The gauge lever has a substantially horizontal arm 33 carrying a knife edged foot 34 which bears against the surface plate, and a substantially vertical arm 36 which is drilled and threaded to receive the horizontal screw 37 having a flattened end or gauge button 38. This screw is adjusted and locked in place by a jam nut 39. A web 41 preferably extends between the lever arms to add rigidity. The levers are described in their normal position, but they may be rotated thru 180° to prevent their being damaged in placing the press head in position.

40 On the opposite side of the surface plate from the gauge arms just described and adjacent the end of the plate is a bracket 42, similarly secured by bolts 43 engaging the T slot, and having an arm 44 which extends partly across the surface plate. Ears 46 on the side of this arm carry a pin 47 on which a gauge lever 48 similar to those previously described is journaled. The lever 48 is positioned at right angles as compared with the other levers, however, the gauge button 50 being on the side of the lever away from the reinforcing web instead of on the same side as in the other levers, and hence this lever cannot be swung out of the way as can the others.

55 In using the device the printing block 56 is loosely clamped to the press head by means of the dogs 57 which bear against the flanges of the I-beams 6 and are held to the block by the screws 58. Small wooden pad blocks 60 59 separate the printing block and the press head. Set into the edges of the printing blocks are three small spotting plates 61, two on the side of the block and one on the end. These plates are carefully positioned 65 to bear a definite relation to the engraving

on the face of the block at the time the block is made, and are so placed as to engage the gauge buttons on the three gauge levers.

The printing block is adjusted to bring each gauge button lightly into contact with its corresponding spotting plate, a thin steel "feeler", of the order of .001 inch in thickness, being drawn between the foot 34 and the surface plate, and between the gauge button and spotting plate to insure that the pressures are equalized at these points and are not sufficient to distort the levers and give an erroneous adjustment.

When this operation has been completed, a micrometer gauge is passed between the face of the printing block and the surface plate. The gauge has a base 62 which rests on the plate, a spring gauge point 63 which bears against the face of the printing block and whose movements are indicated on a vertical dial 64, and a handle 66 by which it is manipulated. The gauge is moved on the surface plate to bring the gauge point into contact with elementary areas on the face of the block, the face being that portion of the block which actually contacts with the rug to leave its imprint thereon. By tightening the clamping screws 58 or by loosening these screws and inserting shims, these elementary areas are brought to equal distances from the surface plate as indicated by the dial. Because of the greater accessibility of the press head when mounted on the alining device, and also because its position on the aliner is fixed instead of variable, this can be done much more easily and accurately than on the press.

By having extra press heads, the complete set up for one design can be prepared while another is in use on the press. When the time comes for the change to be made, all that is required is the substitution of the press heads, which is a matter of minutes instead of one of hours of painstaking work, as is the case where the set up is made on the press itself. Moreover, since the positioning of the blocks on the heads is absolutely fixed, the cut-and-try process is eliminated and material is saved, as no trial rugs need be produced in which the design elements fail to register.

I claim:

1. A device for positioning a printing block carried by a press head comprising a surface plate, means for holding the press head in a fixed spaced position in relation to said surface plate, and a gauge lever mounted on the holding means for establishing the position of a point on the printing block with respect to the head holding means and in a plane spaced from the surface plate.

2. A device for positioning a printing block carried by a press head comprising means for holding the press head in a known

position, a surface in fixed relation to said holding means, and a gauge lever mounted on the holding means and having a knife edged element arranged to bear against said surface and an element arranged to bear against the printing block to position a point thereon.

3. A device for positioning a printing block carried by a press head comprising a surface plate, means for supporting the press head in a spaced position substantially parallel to said surface plate, and a gauge lever mounted on the holding means and having an arm arranged to bear against said surface plate and an arm arranged to bear against the printing block.

4. A device for positioning a printing block carried by a press head comprising means for holding the press head in a known position, a surface in fixed relation to said holding means, a pair of gauge levers mounted on said holding means and arranged to bear against the side of the printing block, and a gauge lever mounted on said holding means and arranged to bear against the end of the block, each of said gauge levers having an element arranged to bear on said surface.

5. A device for positioning a printing block carried by a press head comprising a surface plate, means for supporting the press head in a position substantially parallel to said surface plate, and a gauge lever mounted on the holding means and having an arm arranged to bear against said surface plate and an arm arranged to bear against the printing block, said gauge lever being pivotally mounted to swing clear of the block.

6. The method of positioning a printing block carried by a press head which comprises the steps of establishing a reference point on the block, mounting the printing block on the head, mounting the head separately from its press and substantially parallel with a substantially plane surface, maintaining said reference point in a predetermined position with respect to the plane surface, and adjusting the block mounting to bring elementary areas on the face of the block an equal distance from the surface.

In testimony whereof, I have hereunto set my hand.

LELAND S. ROSENER.