

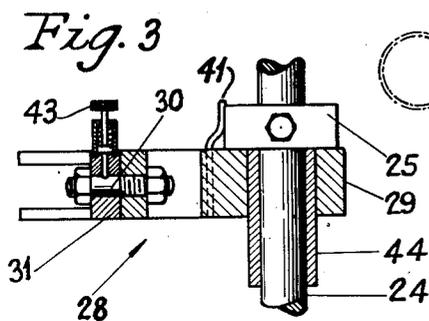
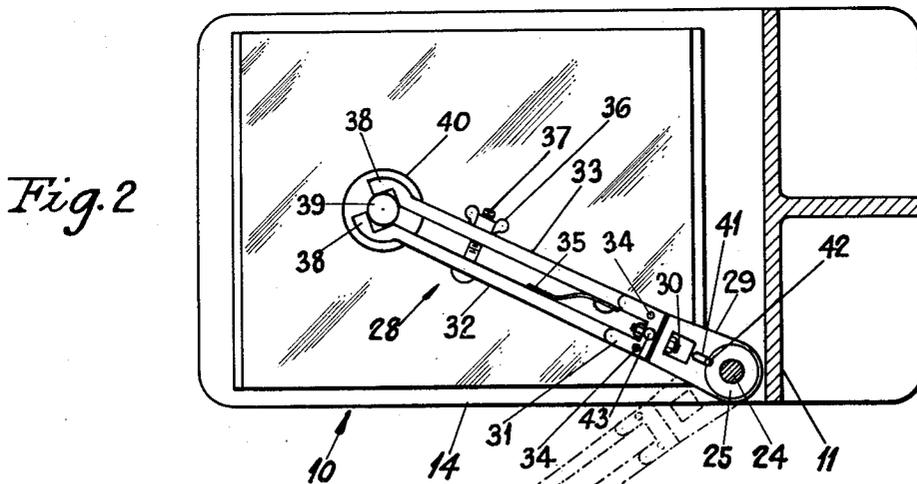
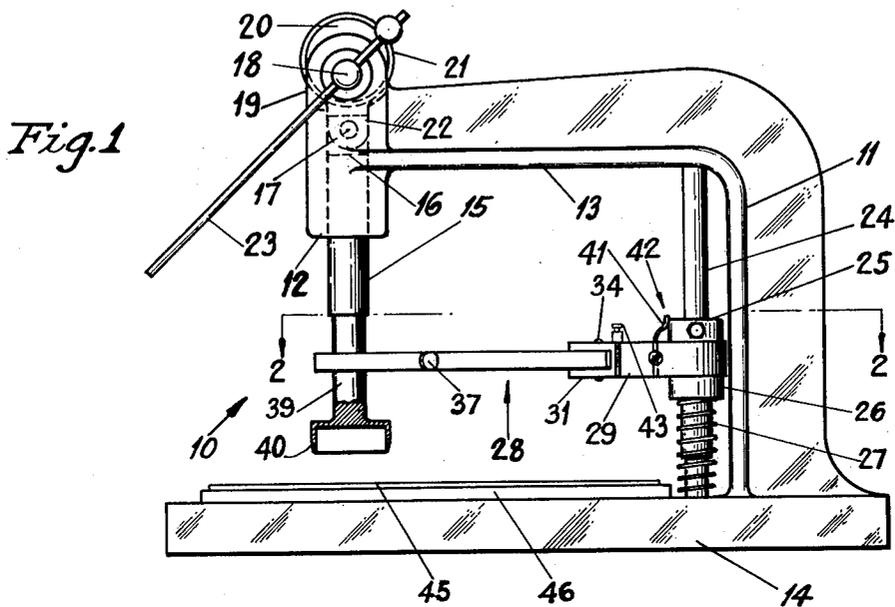
May 9, 1933.

A. DRUCKER

1,907,757

CUTTING PRESS

Filed April 30, 1932



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CUTTING PRESS

Application filed April 30, 1932. Serial No. 608,465.

The present invention relates to improvements in hand presses for converting ordinary manual pressure on the handle to enormous pressure at the working points of the mechanism.

An object of this invention is to provide an improved cutting-press suitable for cutting-dies for cutting up sheet material such as leather, cloth, or paper into all sorts of shapes.

Another object of this invention is to provide a cutter-carrier which is pivotally mounted to swing in a horizontal plane from a non-cutting position into alignment with the plunger, and in providing yielding means for maintaining the alignment of the cutter-carrier and the plunger and for centering the cutter and plunger.

Another object of this invention is to provide a fixed vertical shaft in spaced relation adjacent to the upright wall of the frame and on which the cutter-carrier is designed to pivot, the said shaft having a fixed upper collar and a slidable lower collar, and a coil spring intermediate the lower collar and the base plate of the hand press, the said cutter-carrier being mounted between the two collars and being supported jointly with the cutter in an elevated position above the work supporting surface due to the upward pressure of the spring.

Another object of this invention is to cause said mechanism to cooperate so that when the operator uses one hand to move the handle and causes the plunger to move up and down, the cutter-carrier and cutter will automatically follow the movements of the plunger, and the operator may use his other hand for shifting the material being cut up.

Another object of this invention is to form the cutter-carrier of two relatively rotatable members, a rear member pivoted to the vertical shaft and having a fixed pivot shaft projecting radially therefrom, and a front member pivotally mounted on said radial shaft and comprising cutter-gripping means, thus making it possible to reverse the cutter-gripping means and the cutter for expelling the cut blanks from the cutter.

Another object of this invention is to pro-

vide a hand press having cutter-gripping means which will quickly accommodate various styles of hollow cutting-dies for working at high speed.

Another object of this invention resides in the provision of an improvement of this nature which will be simple in construction, inexpensive to manufacture, strong and durable.

With the above and other objects in view the invention will be hereinafter more particularly described, and the combination and arrangement of parts will be shown in the accompanying drawing and pointed out in the claims which form part of this specification.

Reference will now be had to the drawing, wherein like numerals of reference designate corresponding parts throughout the several views, in which:

Figure 1 is a side elevation of my improved cutting-press in operating position.

Figure 2 is a sectional view, taken as on line 2—2 in Figure 1, and shows the cutter or cutting-die in operating position in engagement with the plunger and a dot-and-dash view of the cutter-carrier and cutter swung out of operating position and out of engagement with the plunger and reversed for removing the cut blanks from the cutter.

Figure 3 is an enlarged sectional view of a modified guide-sleeve for facilitating the reciprocating motion of the cutter-carrier and shows a spring pressed pull-pin for locking the cutter-carrier in operating position.

In the illustrated embodiment of the invention, the several views show a cutting-press 10, comprising an open-side frame having a T-shaped upright wall 11, a plunger-housing 12, depending from an overhanging T-shaped wall 13, and a flat base-plate 14. Slidably mounted for vertical reciprocation in the plunger-housing 12 is a cylindrical plunger 15, having a slotted upper end 16, and a pivot pin 17. Fixedly mounted on a shaft 18, disposed within bearings in a bifurcated extension 19, at the upper end of the plunger-housing 12, is an eccentric 20. Circumscribing the eccentric 20, is a collar 21, having a depending extension 22, which engages with the pivot pin 17. A handle or lever 23, is secured to the shaft 18, and serves

to rotate the shaft 18, and cause the plunger 15, to reciprocate in the plunger-housing 12.

A shaft 24 is fixed in the upper wall 13, and the base-plate 14, adjacent the upright wall 5 11, and in spaced relation and parallel with the plunger-housing 12. It will thus be noted that the plunger-housing 12, and the plunger 15, overhang the base-plate 14. A collar 25, is fixedly mounted at the upper portion of the shaft 24, and a collar member 26, 10 having an integral elongated sleeve portion is slidably mounted at the lower portion of the shaft 24. An open coil spring 27, is also mounted on said shaft intermediate the lower 15 collar member 26, and the base-plate 14. A cutter-carrier 28, is slidably mounted on the shaft 24, between the two collar members and is resiliently supported in an elevated position due to the upward pressure of the coil 20 spring 27. The cutter-carrier 28, comprises a rear member 29, rotatably and slidably mounted on the shaft 24, and is provided with a fixed pivot pin 30, projecting radially therefrom; the cutter-carrier also comprises 25 a front member 31, pivotally mounted on said radial pivot pin and having arms 32, 33, mounted on pivot pins 34, 34, and pressed apart by a flat spring 35, and brought into close relation by means of a wing nut 36, and 30 a bolt 37. The arms 32, 33, are each provided with V-shaped jaws 38, 38, designed to grip the cylindrical handle 39, of a cutter or cutting-die 40.

An upwardly projecting spring 41, has 35 been fastened to the rear member 29, of the cutter-carrier 28, and engages with a notch 42, in the fixed upper collar 25, the said notch being positioned in longitudinal alignment with the cutter-carrier and plunger, as shown 40 in Figure 1, and serves to align the plunger and the cutter.

A sheet of material 45, to be cut up into any desired shape as predetermined by the cutting-die 40, is placed upon a piece of backing material 46, adapted to be shifted on the 45 work supporting surface or base-plate 14. When the lever 23, is operated, it causes the cutting-die 40, to cut through the material 45, and the cutting edge of the cutting-die 50 enters into the upper surface of the backing material 46. The operator then repeatedly shifts the backing material and the material to be cut up with one hand, while he operates the actuating mechanism for the cutting- 55 die with the other hand.

As shown in Figure 3, a spring actuated pull-pin member 43, has been provided in the front member 31, of the cutter-carrier 28, and engages with the pivot pin 30, and serves 60 to lock the front member of the cutter-carrier and the cutting-die in operating position. When the cutting-die gets filled with cut blanks, the pull-pin member 43, is pulled upwardly out of contact with the pivot pin 65 30, and the cutter-carrier 28, and the cutter

40, are swung out of operating position and are reversed, as best shown in dot-and-dash lines in Figure 2, when the cut blanks are removed from the cutter. The cutter is then reversed and swung back into operating position in contact with the plunger and another piece of material is cut up. Figure 3, also shows an elongated guide sleeve 44, fixed in the rear member 29, of the cutter-carrier 28, and which serves to facilitate the reciprocating motion of the cutter-carrier. The use of the guide sleeve 44, may dispense with the collar member 26. 70

Work for which my cutting-press is adapted, such as the cutting up of layers of material into blanks of any desired shape has generally been done by hand, the cutting-die being driven through the material by a mallet. As a surface for the cutting edge of the cutting die to strike on, there is usually provided a stationary block of wood. Under such conditions, the workman holds the mallet in one hand and the cutter in the other hand, the material to be cut up being stationary. The workman repeatedly carries 80 the mallet and cutter to successive portions of the material laying stationary on the block. It is to be noted that the workman operating my cutting-press stands at the end of the machine where the cutting is done, and shifts 85 the backing material and the material to be cut with one hand, while actuating the fixedly aligned cutting-die with the other hand. It is also to be noted that while I have shown the plunger of my cutting-press as operated 90 by hand by means of a lever, that I may operate the plunger by foot power or by motive power such as by an electric motor and by means of intermittent actuating mechanism. 95

While I have illustrated my cutting-press 100 as utilizing a tool member for performing a cutting action, it is obvious that I may employ tools which will perform other functions. I do not therefore limit myself to the style of tool shown in the drawing, as I contemplate in connection with my cutting-press 105 the manufacture of quite a number of tools, each of which is to be designed for performing a different function, but all being interchangeable and adapted to the structural 110 principles of my cutting-press. 115

It is also to be noted that under all modes of actuating of my cutting-press, the cutting-die or cutter is resiliently supported in an elevated position above the work supporting surface and independent of the plunger and that the cutter causes an upward pressure against the plunger when in alignment therewith. 120

Having thus described my invention, I claim as new and desire to secure by Letters Patent: 125

1. A cutting-press of the character described comprising an open-side frame having an upright wall an over-hanging plunger- 130

er-housing, a plunger and a flat base-plate, a fixed shaft positioned in spaced relation adjacent to said upright wall, said shaft having a fixed upper collar and a slidable lower collar member and a coil spring intermediate the lower collar member and the base-plate, a cutter-carrier mounted between the two collars for upright reciprocation and being supported jointly with a cutter in an elevated position due to the upward pressure of the coil spring, spring means for aligning said plunger and cutter and an eccentric for actuating said plunger; said cutter being constrained by said aligning and elevating means to follow the movements of said plunger.

2. A cutting-press comprising a frame having a fixed overhanging plunger-housing, a plunger and a base-plate, a shaft positioned in spaced relation and parallel with said fixed plunger-housing, a cutter-carrier mounted for reciprocation on said shaft and being supported jointly with a cutter in an elevated position and extending below said plunger, means for aligning said plunger and cutter, and means for actuating said plunger, said cutter being constrained by said aligning and elevating means to follow the movements of said plunger.

3. In a cutting-press, a cutter-carrier comprising a rear member rotatably and slidably mounted on a vertical shaft and having a radially projecting pivot, a front member mounted on said radial pivot and having means for gripping a cutter, resilient means for supporting said cutter-carrier and cutter in an elevated position and means for locking said front and rear members of the cutter-carrier when said cutter is in cutting position.

Signed at New York in the county of New York and State of New York this 29 day of April A. D. 1932.

ABRAHAM DRUCKER.