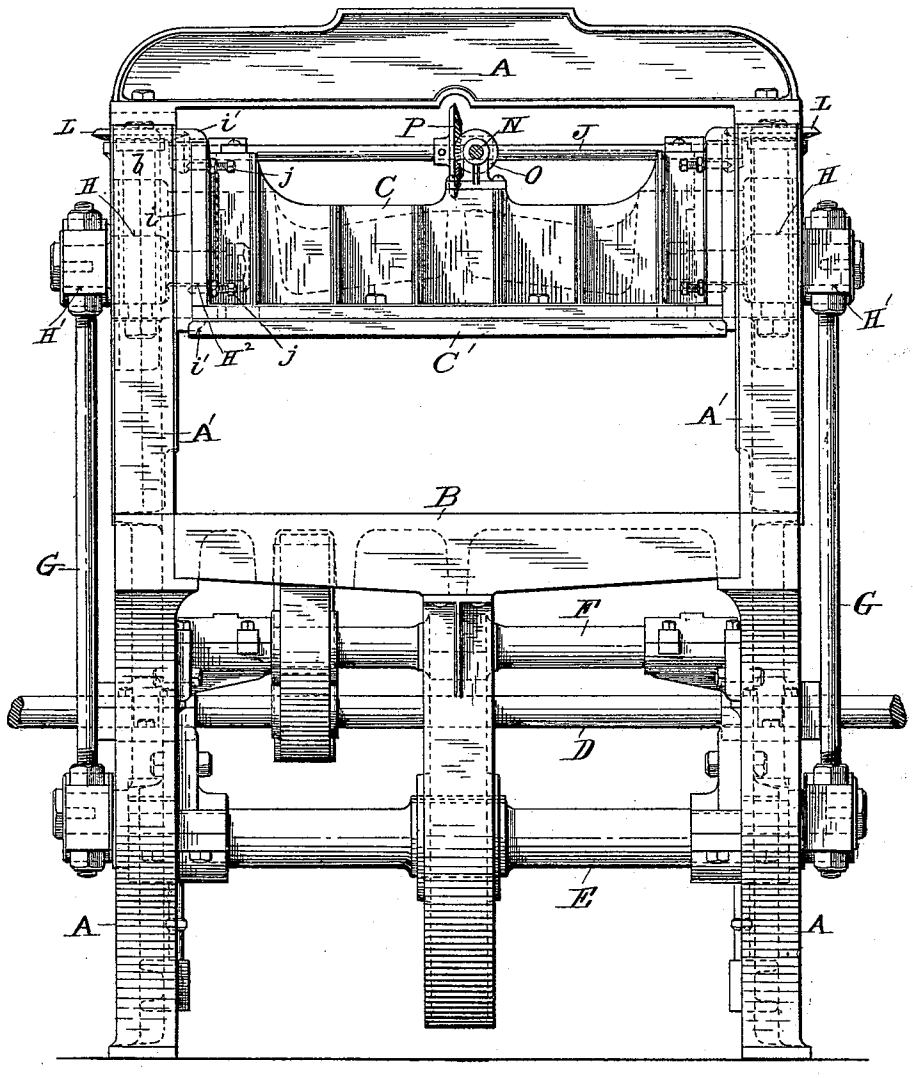
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A. A. RHEUTAN.

POWER PRESS.

No. 457,132. Patented Aug. 4, 1891.

Fig. 1.



Witnesses;
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Inventor;
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

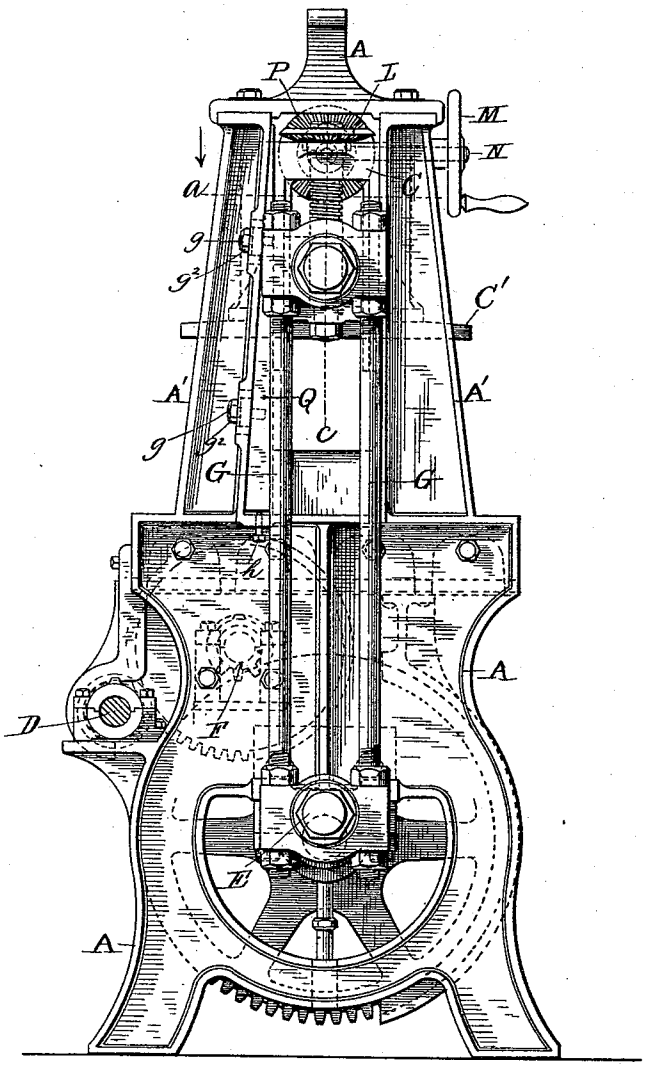
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Fig. 2.



Witnesses;

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Fig. 3.

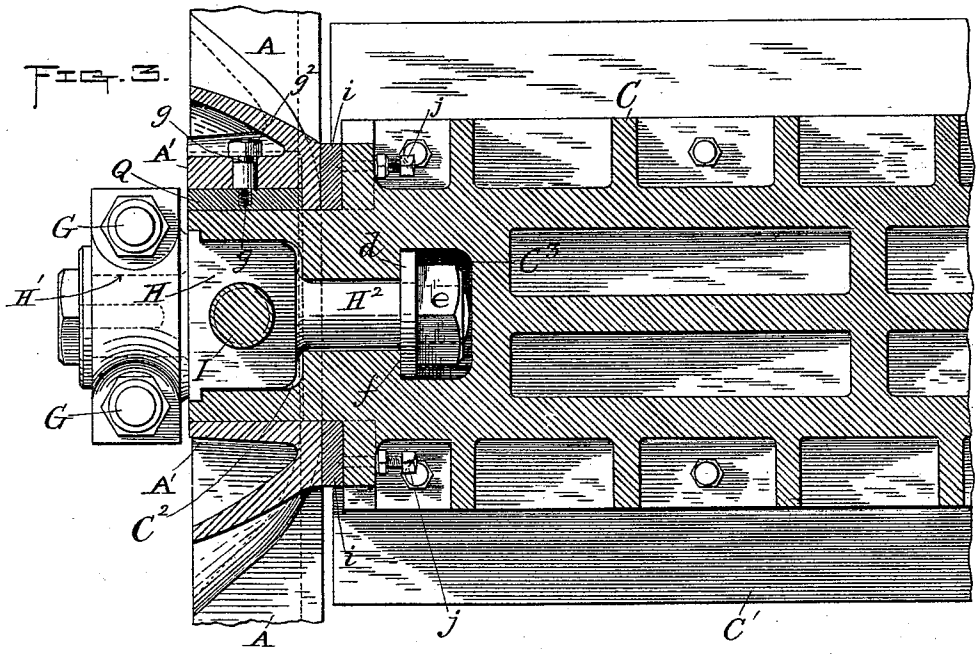
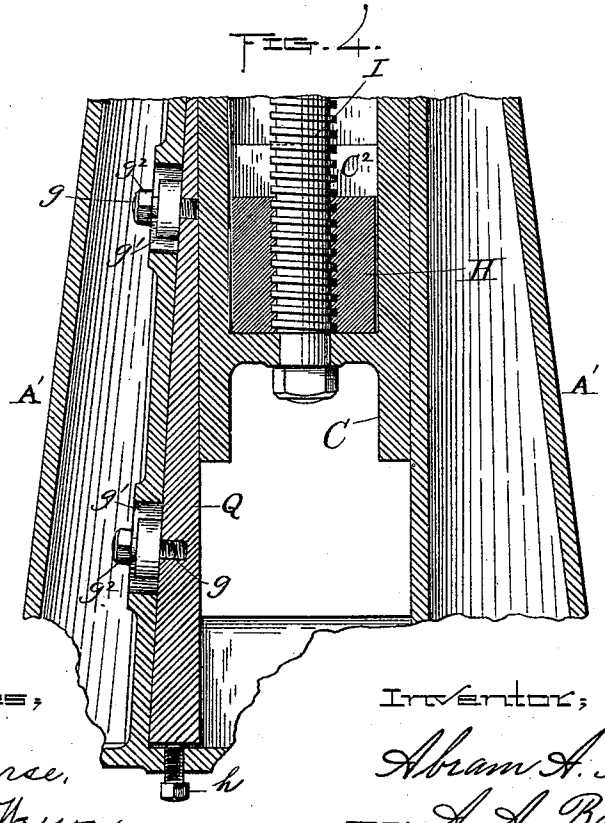


Fig. 4.



Witnesses;

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G. Forrest Mason.

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(No Model.) 4 Sheets—Sheet 4.

A. A. RHEUTAN.

POWER PRESS.

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Fig. 5.

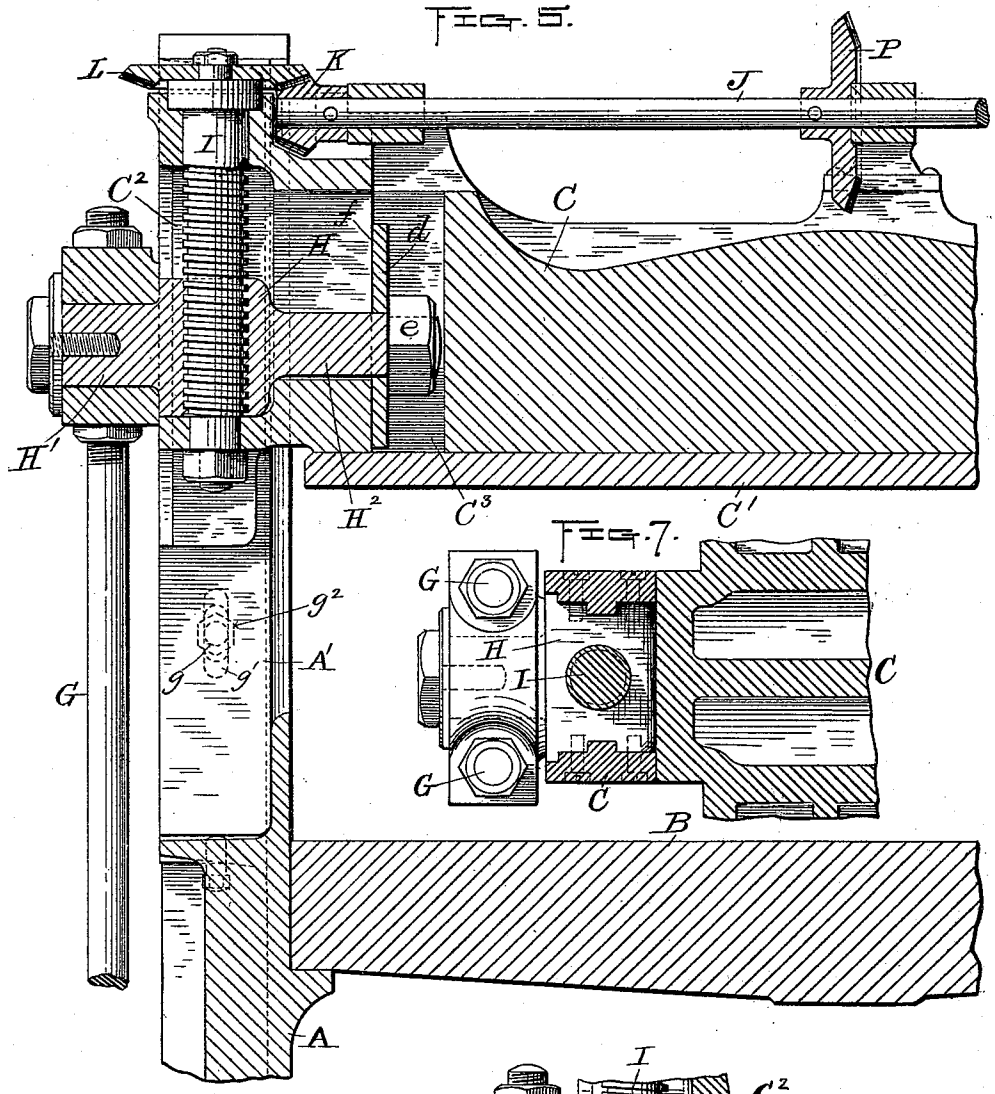
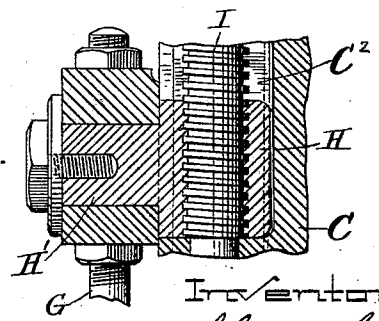


Fig. 7.

Fig. 6.



Witnesses;

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G. Forrest Wesson.

Inventor;

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UNITED STATES PATENT OFFICE.

ABRAM A. RHEUTAN, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO WADE H. HILL, OF SAME PLACE.

POWER-PRESS.

SPECIFICATION forming part of Letters Patent No. 457,132, dated August 4, 1891.

Application filed April 21, 1890. Serial No. 348,806. (No model.)

To all whom it may concern:

Be it known that I, ABRAM A. RHEUTAN, of the city and county of Worcester, and State of Massachusetts, have invented certain new and useful Improvements in Power-Presses; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 represents a side view of a power-press embodying my improvements. Fig. 2 is an end view thereof. Fig. 3 is a horizontal section, upon an enlarged scale, through one-half of the upper end of the press, taken at about the point indicated by line *a* in Fig. 2, showing my aforesaid improvements, all the following figures also being upon the same enlarged scale. Fig. 4 is a vertical transverse section through a part of the upper end of the press, taken on line *b*, Fig. 1. Fig. 5 is a vertical longitudinal section through one-half of the upper part of the press, taken on line *c*, Fig. 2; and Figs. 6 and 7 are modifications in the construction, which will be hereinafter described.

My invention relates more especially to power-presses employed in cutting envelope-blanks; and it consists in certain improvements in the construction, whereby the cross-head and "platen" may be adjusted vertically independent of the usual reciprocating vertical crank movements imparted thereto, and whereby said cross-head and platen may also be adjusted both transversely and longitudinally, as hereinafter more fully set forth.

To enable those skilled in the art to which my invention appertains to better understand the nature and purpose thereof, I will now proceed to describe it more in detail.

In the drawings, A represents the main frame; B, the bed; C, the cross-head; C′, the platen secured to the bottom of said cross-head. D is the main drive-shaft, E the eccentric-shaft, F a counter-shaft, and G G the eccentric connecting-rods, of my improved press.

As the general construction of the press from the bed down and the mode of operating the eccentric-rods are substantially the same as in other presses of this class, it is deemed unnecessary to give a detailed description thereof in setting forth my improvements, which relate wholly to the upper part of the press.

In this, as in other presses of this class, constant reciprocating movements are imparted to the cross-head and platen through the aforesaid eccentric-rods G G, whose upper ends engage with said cross-head and the same length of vertical strokes are at all times maintained when the press is in operation.

As is well known, in cutting envelope-blanks the usual die and block, (not shown,) arranged on the bed, varies in depth by wearing away or otherwise, and it is therefore desirable to provide some means whereby the vertical movements of the platen may be adjusted to correspond therewith in order to perform the work properly. I accomplish said adjustment in the following manner, (see more especially Figs. 3, 4, and 5 of the drawings:) The ends of the cross-head C are each fitted to slide vertically in suitable guideways in the side standards A′ A′ of frame A, and in a suitable socket C^2 in each of said ends is fitted a nut H, which nuts are in turn fitted to slide vertically in suitable guideways in the ends of the cross-head. Each nut also has a stud H′ projecting out horizontally therefrom, to which are pivoted the upper ends of the eccentric-rods G, and a vertical threaded opening to receive a screw-shaft or bolt I, fitted to turn in smooth openings in each end of the cross-head, but held against vertical movement therein. Being thus held, and also fitted to turn in the cross-head and nut, it is obvious that when said screw shafts or bolts are turned the nuts are made to travel vertically thereon either up or down, according to which way they are turned, and in consequence the cross-head and platen are elevated or lowered without changing the positions or lengths of the eccentric-rods or the eccentrics which actuate the same.

I reserve the right to make each nut, as shown in Figs. 3 and 5, with a holding-stud H^2 projecting in an opposite direction from the stud H′ and provided with a washer *d*

and nut *e*, or with only the stud H′, as is shown in the modification, Figs. 6 and 7. In the latter instance it is preferable to make the cross-head with detachable holding-caps at each side of the nut, provided with vertical flanges which fit in correspondingly-shaped grooves in the sides of the nut, as is shown in Fig. 7.

I prefer the first-described construction, as by said construction the nuts H H are held laterally in a more secure manner, and an easier movement of the nuts on the screw shafts or bolts I I thereby obtained. The washers *d* and nuts *e* being arranged in vertical slots C^3 in the cross-head and said washers having a bearing against the shoulders *f f* on said cross-head insures the nuts being held in their proper vertical positions against the counter strain imparted by the connecting-rods, consequently also insuring the easy action of the parts, as aforesaid. Both screw shafts or bolts I I may be turned simultaneously, so as to elevate and lower both ends of the cross-head alike by means of the horizontal shaft J, fitted to turn in suitable bearings on said cross-head through the bevel-gears K K, secured to the ends of the shaft and the bevel-gears L L, secured to the upper ends of the screw shafts or bolts I I, with which the bevel-gears K K engage. Said shaft J may in turn be operated by means of a hand-wheel M, through the shaft N, fitted to turn in a suitable bearing on the cross-head, the bevel-gear O, secured to the inner end of said shaft N, and the bevel-gear P, which is secured on shaft J and engages with the bevel-gear O.

By the foregoing construction and arrangement it will at once be apparent that when the hand-wheel M is turned in one direction the cross-head and platen are elevated, and lowered by reversing the operation. It is also obvious that said operations may be performed in an easy and expeditious manner at an expense of but little power from the attendant. The transverse wear incident to the reciprocating vertical movements of the cross-heads in the guideways of frame A may be taken up by means of an adjustable wedge Q, arranged vertically, one at each end of the cross-head upon one side thereof. (See Fig. 4.) Each wedge is held laterally by means of the screws *g g* and longitudinally by the screw *h*. The screws *g g* are turned transversely into the wedges and are arranged in slots *g′ g′*, formed in the side standards A′ A′. They are also provided with nuts g^2 g^2, which, when turned up tight against the standards, cause the wedges to be drawn forward and clamped tight against the inner sides of said standards, the nuts being larger than the widths of slots *g′ g′*, so as to bear at each side thereof, as is indicated by dotted lines in Fig. 5. The screws *h* turn in frame A and bear against the lower ends of the wedges. In adjusting said wedges they are first loosened by turning back the nuts g^2 g^2. The screws *h* are then turned in to force up said wedges longitudinally a sufficient distance to tighten up the parts, when the nuts are turned up tight again and the wedges thus clamped in their adjusted positions.

By the use of wedges as above described the lateral adjustment of the cross-head in its bearings may be accomplished in an easy and expeditious manner and said adjustment regulated to a nicety. As is well known, this adjustment is an important feature in this class of presses, as the wearing away of the sides is very rapid, and therefore necessitates frequent and exact adjustment to keep the press in proper working order.

Although I have shown the wedges only upon one side of the cross-head, they may be used on both sides, if desired, without departing from the principle of my invention.

The longitudinal wear of the cross-head may be taken up and a convenient and inexpensive way provided for fitting said cross-head to the inner sides of the side standards A′ A′ by arranging "gibs" *i i*, one at each side of each end of the cross-head, between said ends and the side standards, at each side of the part of said cross-head which extends in between the standards, as is fully shown in Fig. 3 of the drawings. Said gibs lap over the top and bottom edges of the cross-head, as is shown at *i′ i′* in Fig. 1, and are thereby held in position vertically in like manner to similar gibs on other machines. They are held laterally by means of suitable set-screws *j* passing through flanges on the cross-head and bearing against the gibs, as is shown in Figs. 1 and 3. By the use of said gibs in a power-press of this class it is obvious that when the cross-head becomes loose longitudinally by constant wear said looseness may be easily remedied by adjusting said screws *j*, and the convenience and expense saved in the first construction of the machine are also of considerable advantage, the cost of fitting the cross-head being much reduced over the old way of fitting the same.

Although I prefer in practice to construct the various parts relating to my improvements as hereinbefore described, I do not limit myself thereto, but reserve the right to make such modifications therein as may be considered advisable under different circumstances coming within the principle of my invention, as set forth in the claims.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a power-press, the combination of cross-head C and screw shafts or bolts I I, the latter fitted to turn and also held vertically in the ends of said cross-head, with the nuts H H, fitted to travel on the screw shafts or bolts, and the eccentric-rods G G, attached at their upper ends to said nuts, substantially as and for the purpose set forth.

2. In a power-press, the combination of the cross-head C and screw shafts or bolts I I, the latter fitted to turn and also held vertically

in the ends of said cross-head, with the nuts H H thereon having a bearing on the cross-head to hold them from being pulled outward, as well as fitted to travel on the screw-shafts, and the eccentric-rods G G, attached at their upper ends to the outer ends of said nuts, substantially as and for the purpose set forth.

3. In a power-press, the combination of the cross-head C, screw shafts or bolts I I, fitted to turn and also held vertically in the ends of said cross-head, and nuts H H, fitted to travel on the screw-shafts, with the eccentric-rods G G, attached at their upper ends to the nuts H H, the gears L L, secured to the screw-shafts, gears K K, secured to rotary shaft J, and said shaft J, fitted to turn in suitable bearings and having means for turning the same, substantially as and for the purpose set forth.

4. In a power-press, the combination of the screw shafts or bolts I I, fitted to turn and also held vertically in the ends of cross-head C, with nuts H H, fitted to travel on the screw-shafts, substantially as and for the purpose set forth.

ABRAM A. RHEUTAN.

Witnesses:
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W. B. NOURSE.