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L. A. KINGSLEY

2,148,563

WORK SUPPORTING DEVICE

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Fig. 1.

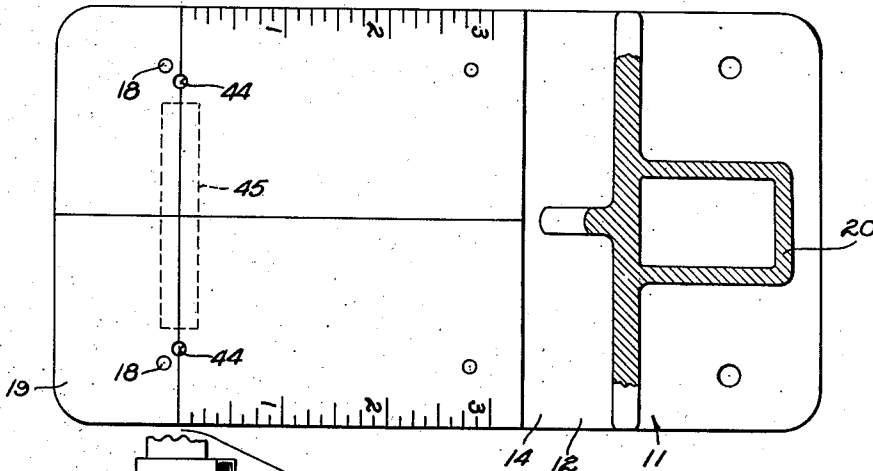


Fig. 2.

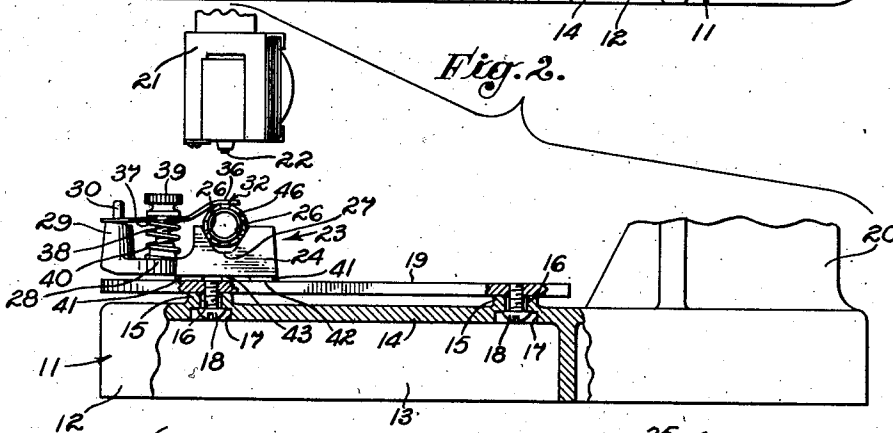


Fig. 3.

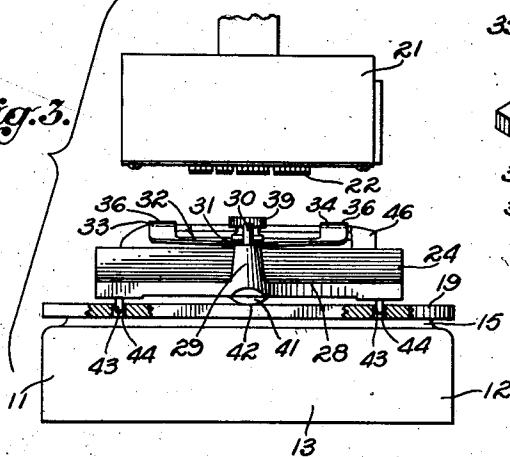
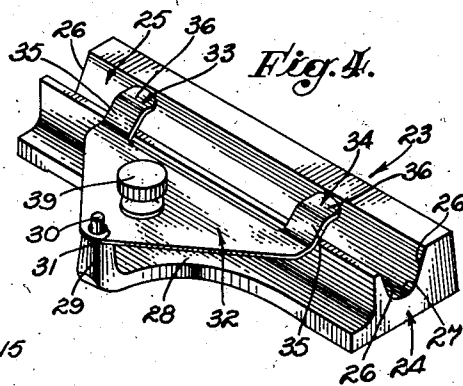


Fig. 4.



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WORK SUPPORTING DEVICE

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10 Claims. (Cl. 101-407)

My invention relates to a work supporting device, and more particularly a device for supporting articles during their contact with a pressing head.

5 My invention finds particular utility in the supporting of flat articles such as cards, bill folds, or the like, and articles not flat such as fountain pens and pencils, to contact with a stamping head for imprinting indicia upon such articles, 10 and the advantages of my invention will be described in connection with such use, it being understood, however, that the work supporting device of my invention is not limited to such use.

In imprinting indicia upon articles there is 15 usually employed an imprinting machine including a base upon which the article to be imprinted is supported and a reciprocating head supported by said base and carrying characters which upon the reciprocation of the head are brought into contact with the article to be imprinted. It is desirable that such a device have the capacity for imprinting indicia upon not only articles that are flat, such as cards, bill folds, or the like, but also 20 articles that are not flat, such as fountain pens, pencils, or the like.

It is an object of my invention to provide a work support quickly adaptable for supporting articles of both classes in position for imprinting by a stamping head.

30 It is another object of my invention to provide a work supporting device which includes a support for flat articles upon which a support for articles which are not flat may be quickly installed in position to support such articles in exact alignment with a stamping head and which 35 may be quickly removed from the device.

In stamping articles which are not flat, such as fountain pens and pencils, it is frequently desirable to remove the article from the machine to inspect the imprint thereon, and if this imprint 40 be imperfect it is desirable to replace the article in the machine for a subsequent imprinting coincident with the first.

It is accordingly an object of my invention to 45 provide a work supporting device which includes a supporting member for articles which are not flat which so supports such articles that the article and support may be removed from the device for inspection of the article and may thereafter be re-installed in the device with the article 50 in exact alignment with the stamping head so that a subsequent imprint will coincide with the first.

Many of the articles which it may be desired to stamp are of cylindrical cross section and hol-

low, such as the caps and barrels of fountain pens. It is an object of my invention to provide a work supporting device including a supporting member for articles circular in cross section which 5 so supports such articles as to more evenly distribute around the periphery of such articles the force of impact of the stamping head and thus minimize the destructive tendency of such force.

Many of the articles which it may be desired to imprint are in cross section in the shape of a regular polygon of twelve sides. It is an object of 10 my invention to provide a work supporting member adapted for securely holding an article of twelve sided cross section for contact with a pressing head.

Many articles, such as fountain pen barrels or caps which it may be desired to imprint, are not of uniform cross-sectional area, but may be frusto-conical. It is of course necessary, if a clear 20 imprint is to be secured, that the contact between the article to be imprinted and the pressing or stamping head should be uniform throughout the length of the characters on the head to be imprinted on the article. It is an object of my invention to provide a work supporting device which 25 includes a supporting member for articles not of uniform thickness which automatically adjusts itself to equalize the pressure of contact between the stamping head and the article throughout the length of the indicia to be imprinted.

It is still another object of my invention to provide a work supporting device which includes means for retaining articles which are not flat upon the supporting member so that the supporting member with the article retained thereon may 35 be removed from the machine and re-installed thereon without any movement of the article relative to the supporting member.

An embodiment of my invention capable of providing the foregoing objects, and others, is described in the following specification which may be better understood by reference to the accompanying drawing, in which

Fig. 1 is a plan view of the base member of the work supporting device of my invention;

Fig. 2 is an elevational view partially in section of the work supporting device of my invention with a fragmentary view of the pressing or stamping head;

Fig. 3 is a front elevational view, partially sectioned, of my work supporting device and a fragmentary view of the pressing or stamping head; and

Fig. 4 is a perspective view of the work supporting member of my device.

Referring to the drawing, which is for illustrative purposes only, the numeral 11 indicates a base member which includes a base 12 having a flange 13 around its periphery, and a top 14. Projecting upwardly from the top 14 are bosses 15 having openings 16 therethrough communicating with recesses 17 in the lower surface of the top 14. Screws 18 project through the openings 16 and are threaded into a top member or plate 19, the upper surface of which is a plane surface, to provide a support for flat articles to be stamped or imprinted. As is illustrated in Fig. 2, the upper ends of the screws 18 are flush with or slightly below the upper surface of the top member 19. The base member 11 is provided with an upwardly projecting portion 20 at its rearward end for supporting in a suitable manner, not shown, a reciprocable stamping or imprinting head 21 carrying indicia 22 to be pressed against the article supported on the base 11.

The numeral 23 indicates the supporting member of the device of my invention which includes a body member 24 having an article receiving groove 25 formed in its upper surface. The groove 25 includes plane surface side walls 26 converging downwardly at an angle of 60° with each other. The lower edges of the side walls 26 are connected by an arcuate wall 27. The supporting member 23 includes a forwardly projecting portion 28 having an upwardly extending post 29 at substantially the central transverse axis of the supporting member 23. The post 29 includes an upper reduced portion 30 adapted for projecting through an opening 31 of a retaining member 32. The retaining member 32 includes a pair of arms 33 and 34 having inclined portions 35, and portions 36 substantially parallel with the retaining member 32. The arms 33 and 34, as is well illustrated in Fig. 4, extend over the article receiving groove 25 of the work supporting member 23.

A second opening 37 is provided in the retaining member 32 and a screw 38 extends through this opening into threaded engagement with the projecting portion 28 of the body member 24. The upper end of screw 38 is provided with a head 39 which engages the upper surface of the retaining member 32. A coil spring 40 surrounds the screw 38 with its lower end bearing against the upper surface of the projecting portion 28 of the supporting member body 24 and its upper end bearing against the retaining member 32 so that it resiliently urges the retaining member 32 upwardly relative to the supporting member 23.

Projecting downwardly from the supporting member body 24 on the central transverse axis thereof are projecting portions 41, shown in Fig. 2 as two in number. As illustrated in Fig. 3, the projecting portions 41 are provided with an arcuate lower surface 42 so that the supporting member 23 may rock on the projecting portions 41 relative to the top member 19. Near each end of the supporting member body 24 and upon the axis midway between the projecting portions 41, are guides or guide members in the form of downwardly projecting pins 43. Each of the pins 43 is adapted for reception in an opening 44 in the top member 19. The relative cross-sectional areas of the pins 43 and the openings 44 are such that the work supporting member 23 may freely rock about the projecting portions 41 between the limits defined by the contact of the ends of the supporting member body 24 with the top member 19, while the work supporting mem-

ber 23 is restrained against movement in a plane parallel to the plane of the top member 19.

When it is desired to stamp or imprint indicia upon an article which is flat, such as a card or bill fold, or the like, the work supporting member 23 is removed from the base member 11 so that the top member 19 is available, as illustrated in Fig. 1, for the support of the article. It is to be noted that the openings 44 for the reception of the pins 43 are not within that area of the top member 19 covered during the imprinting operation by the indicia 22, which area is defined by the dotted lines 45 of Fig. 1. The top member 19 thus presents a plane and imperforate surface supporting the article being imprinted throughout the area covered by the stamping or imprinting head.

When it is desired to imprint an article which is round, such, for example, as a fountain pen, pencil, or the like, the stamping head 21 is moved to its uppermost position and the article supporting member 23 is installed on the base member 11, as illustrated in Fig. 2, by simply lowering the supporting member 23 on the base member with the pins 43 in the openings 44. The article to be imprinted, indicated by the numeral 46, is placed in the article receiving groove 25 in position to be imprinted and the screw 38 is then threaded into the body member 24 by rotating the head 39 until the arms 33 and 34 clamp the article 46 against the walls of the groove 25. The arms 33 and 34 are formed of resilient material and preferably the entire retaining member 32 is resilient so that the article 46 is firmly clamped in place. Thereafter the indicia 22 are brought into contact with the upper surface of the article 46 to secure the desired imprint. If now the supporting member 23 is withdrawn from the base 12 by simply lifting it upwardly until the pins 43 are removed from the openings 44, the article 46 may be carefully inspected and, if the imprint is not perfect, the supporting member 23 with the article 46 may be re-installed in the base 11 in a position indicated in Fig. 2. Since the article 46 is firmly secured by the retaining member 32 against movement relative to the supporting member 23, and since the pins 43 entering the openings 44 insure the same alignment of the supporting member 23 with the top member 19 that was previously attained, it will be obvious that successive imprinting operations may be made on the same article with perfect registry until the desired imprint is secured.

If the article 46 is twelve sided, as illustrated in Fig. 2, it will be apparent that two of the flat sides will contact the converging walls 26 of the article receiving groove 25, presenting another flat side of the article 46 in a horizontal plane for the reception of the imprint. With such an article, as with an article circular in cross section, the lines of force represented by the vertical pressure of the pressing head 21 and the pressure of the converging walls 26 on the article 46 intersect, forming three equal central angles of 120° each, due to the fact that the converging walls 26 make an angle of 60° with each other. Thus, the forces applied to the twelve sided or cylindrical article are three in number, spaced equidistant around the periphery of the article, thus applying, as equally as three contacts can, equal force around the periphery of the article and minimizing the destructive tendency or crushing tendency of the pressural contact of the stamping head 21 with the article. This is true although such articles be of various diameters since the walls 26 are

plane surfaced. If the angle of convergence of the walls 26 were made either greater or less than 60°, the distribution of force to the periphery of the article wall would be unequal and the destructive or crushing tendency of the force exerted on the article by the stamping head would be enhanced.

If the article 46 is of unequal thickness; e. g., triangular or frusto-conical in section, the supporting member 23 rocks in a vertical plane about the projecting portions 41 as pressure is applied to the article by the indicia 22 until the upper surface of the article 46 is parallel with the plane of the indicia so that the indicia 22 contacts the article 46 with equal pressure throughout the length of the indicia. The cross-sectional area of the openings 31 and 37 are greater than the cross-sectional areas of the reduced portion 30 and the screw 38 respectively which pass through these openings so that the retaining member 32 may adjust itself to such articles of non-uniform thickness to securely clamp them in the article receiving groove 25. Moreover, the resilience of the retaining member 32 permits the arms 33 and 34 some limited movement relative to each other, which contributes to this secure clamping of such articles.

It is frequently found that in spite of extreme care in assembly the top member 19 is not in the exact desired alignment with the stamping head 21 to cause the indicia 22 to be properly centered over the work receiving groove 25. To provide a quick adjustment for correcting such alignment, the openings 16 in the base 12 are made of larger cross-sectional area than the cross-sectional area of the screws 18 and the recesses 17 in the base 12 are made larger than the screw heads 18. Thus when the screws 18 are tightened to secure the top member 19 in pressural contact with the bosses 15 of the base 12 and the work supporting member 23 is installed on the top member 19, as illustrated in Fig. 2, if it be found that there is improper alignment between the indicia 22 and the article receiving groove 25, it is necessary only to subject the top member 19 to impact as by tapping it with a hammer to cause the slight movement of the top member 19 relative to the base 12 which will provide the desired alignment.

While that embodiment of my invention hereinbefore illustrated and described is fully capable of performing the objects and providing the advantages primarily stated, there are various other embodiments of my invention likewise capable of performing these objects and providing these advantages, and I therefore wish my invention to be understood as not restricted to the specific embodiment hereinbefore set forth.

I claim as my invention:

1. In a device for holding an article for contact with a pressing head, the combination of: a base member having a plane surface for the support of flat articles; a supporting member for supporting articles not flat, said member being detachably installed on said base member; a projecting portion on said supporting member engaging a portion of said plane surface whereby said supporting member may rock on said base member; and means on said supporting member removably extending into openings in said base member for restraining movement of said supporting member parallel to the plane of said base member, whereby articles neither flat nor of uniform thickness on said supporting member are subjected to contact with the pressing head with

uniform pressure throughout the length of the pressing head.

2. A stamping machine work support, including: a body member; a retaining member cooperating with said body member to clamp work therebetween; a post on one of said members projecting through an opening in the other of said members, said post being of a cross-sectional area slightly less than the cross-sectional area of said opening whereby said retaining member may move vertically and rock relative to said body member; and an adjusting member extending through an opening in one of said members and into the other of said members for moving said retaining member on said post, said adjusting member being of a cross-sectional area less than the cross-sectional area of said opening through which it extends, whereby said retaining member may rock relative to said adjusting member.

3. A stamping machine work support, including: a body member; a retaining member cooperating with said body member to clamp work therebetween; a post on said body member having a reduced upper portion projecting through an opening in said retaining member, the cross sectional area of said opening being greater than the cross-sectional area of said reduced portion and smaller than the cross-sectional area of said post so that said retaining member may rock relative to said body member; an adjusting screw threaded into said body member and extending through an opening in said retaining member of greater diameter than said screw whereby said retaining member may rock relative to said body member; a head on said adjusting screw engaging said retaining member; and spring means resiliently urging said retaining member into contact with said head.

4. A stamping machine work support, including: a body member having therein an article receiving groove of substantially uniform cross section; a retaining member having arms of resilient material projecting over said groove to clamp work in said groove; means so connecting said retaining member to said body member that said retaining member may move vertically relative to said body member and may rock about a horizontal axis normal to said groove; and means for moving said retaining member vertically.

5. In a support for an article upon which indicia is to be placed, the combination of: a base having openings therein; a top member; and means projecting through said openings in said base and retaining said top member in pressural contact with said base, said projecting means being smaller in cross-section than said openings so that said top member may be moved in a plane parallel to the plane of said base by impact.

6. In a support for an article to be subjected to contact with a pressing member, the combination of: a base having openings therein; a top member having a plane surface for supporting flat articles, said surface having openings therein; a supporting member having an article receiving groove in its upper surface and projections adapted for extending into said openings in said top member to removably secure said supporting member to said top member against horizontal movement relative thereto; and means projecting through said openings in said base and engaging said top member to retain said top member in pressural contact with said base, said openings in said base being larger than said

means whereby said top member may be moved relative to said base to align said groove of said supporting member with the pressing member.

7. In a device of the character described for working on articles of various configurations, the combination of: a flat base member for the support of flat articles; a supporting member for non-flat articles; a projecting portion on said supporting member removably resting upon said base member whereby said supporting member may rock on said base member; and means limiting the movement of said supporting member relative to said base member to rocking in one plane.

8. In a device of the character described for working on articles of various configurations, the combination of: a base member for flat articles; a supporting member for articles of other configurations; a projecting portion on said supporting member removably resting upon said base member whereby said supporting member is capable of rocking motion relative to said base member; and guide means on said supporting member removably received in openings in said base member for limiting the movement of said supporting member relative to said base member to one plane.

9. In a device of the character described for

working on articles of various configurations, the combination of: a base member having a flat upper surface for supporting flat articles; a supporting member for articles of other configurations; a projecting portion on said supporting member resting upon said base portion to provide for rocking movement of the supporting member on said base member; and guide members projecting downward from said supporting member on opposite sides of said projecting portion to removably engage openings on said base member for centering said supporting member and for limiting its movement relative to said base member to a rocking motion.

10. In a stamping machine the combination with a base and a die adapted for movement toward and away from said base, of means to provide even contact between the die and an article supported by the base, said means comprising: a rocker body mounted on said base for rocking movement; and a retaining means mounted on the body to grip an article against said body, said retaining means being mounted for adjustment by rocking movement relative to said rocker body to accommodate an article of non-uniform thickness.

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