Feb. 8, 1949. E. B. MURPHY ET AL 2,460,842

PAPER TRIMMER

Filed April 25, 1945 3 Sheets-Sheet 1

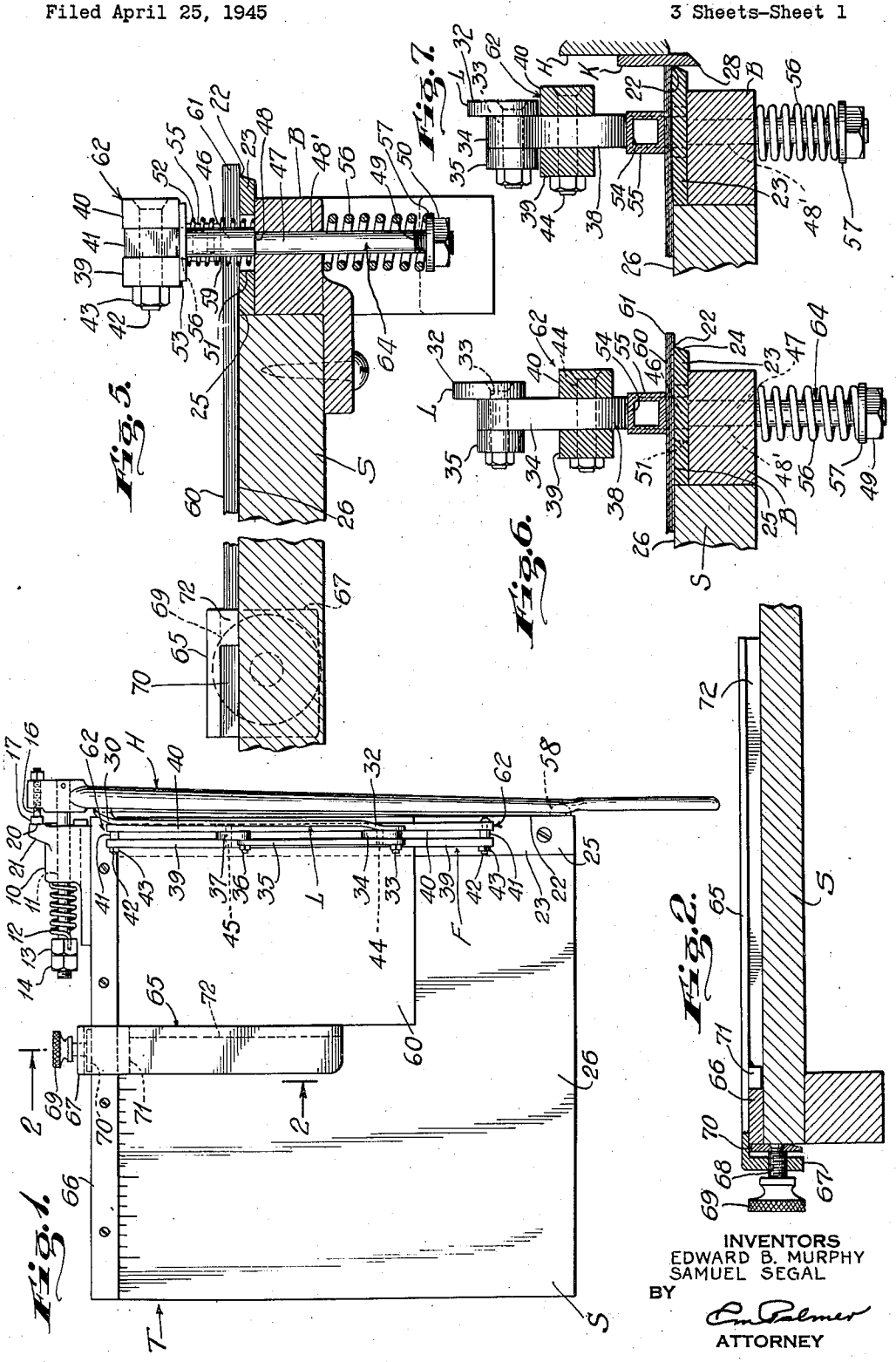


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

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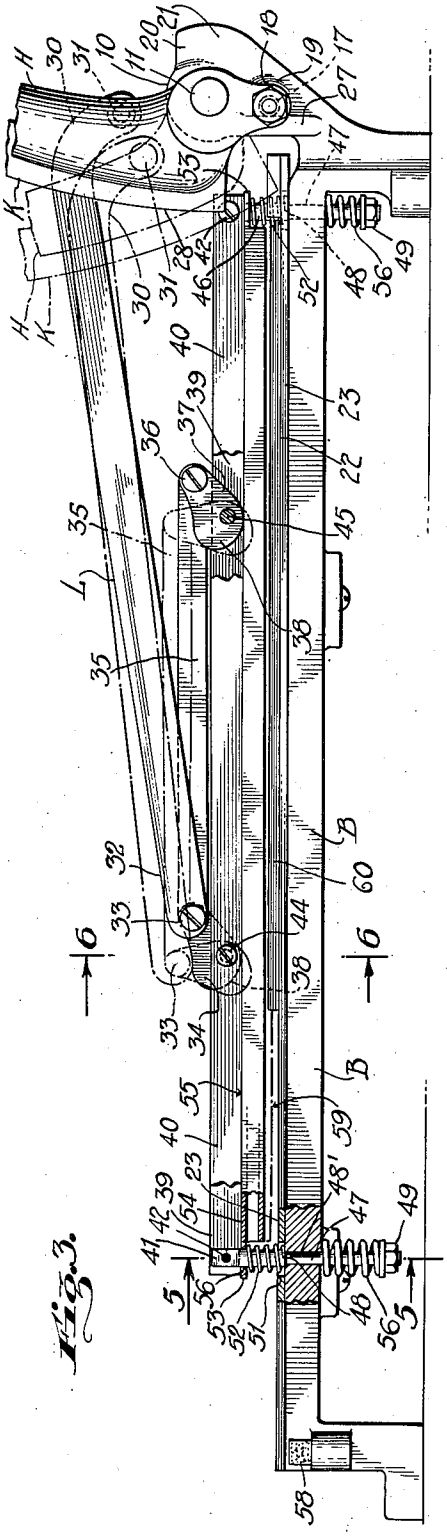


Fig. 3.

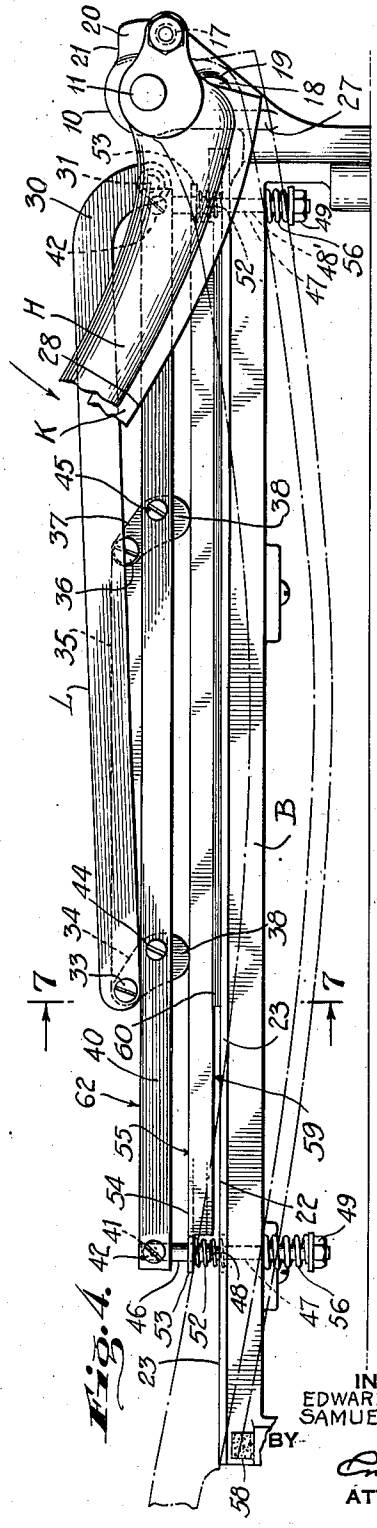


Fig. 4.

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Filed April 25, 1945 3 Sheets-Sheet 3

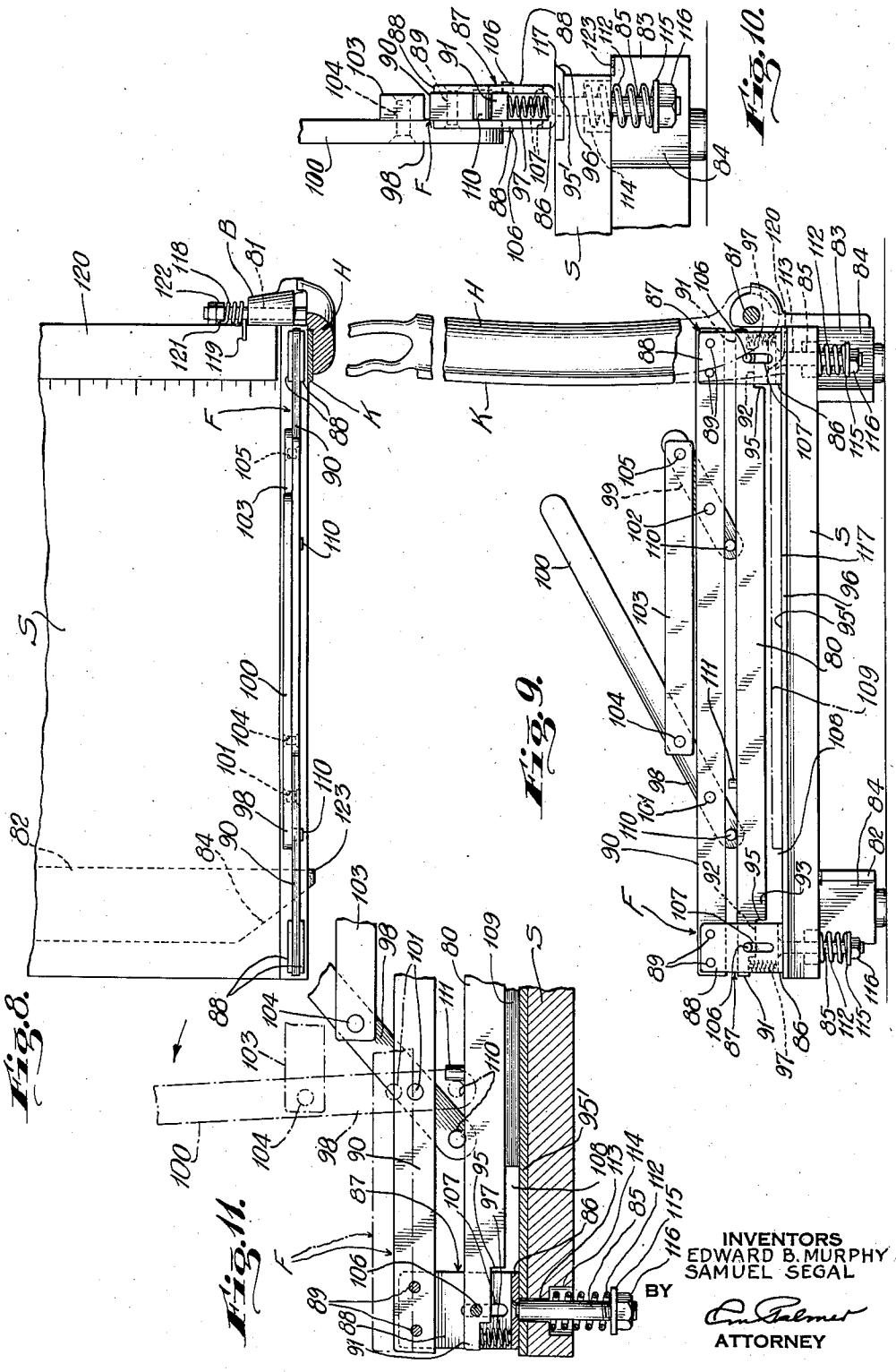


Fig. 8.

Fig. 9.

Fig. 10.

Fig. 11.

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PAPER TRIMMER

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Application April 25, 1945, Serial No. 590,236

21 Claims. (Cl. 164—45)

1

This invention is concerned with paper and/or cardboard shearing means for trimming or cutting sheet material or a stack thereof desirably mounted on a suitable platform or support. The object of the invention is to provide an improved shearing device of the character referred to wherein manual clamping of the stack or work which may be paper and/or cardboard or other flexible material is not necessary to sustain the set and selected position thereof. Specifically the invention comprehends as a further object the provision of functionally and structurally improved sheet material clamping means in the form of a slidably guided compressor or pressure bar adapted to be actuated by toggle means for clamping the sheet or sheets in their selective set position prior to severing thereof. Another and important object of the invention is also realized in the provision of novel means for initially gripping the sheet or sheets against the platform or support by automatically controlled compressor means and thereafter automatically and bodily displacing frame means in which said compressor means is guided in a direction away from the support to impart supplementary clamping pressure against the sheet or sheets to be severed. A further object of the invention is to provide means for automatically controlling the operation of the slidably guided compressor or clamping means on the cutting and on the retracting stroke of the swingable severing means. Other salient and important features of the invention will more readily appear from the following detailed description taken with the accompanying drawings wherein:

Fig. 1 is a plan view of the paper trimmer or shearing means illustrating the knife in a closed position.

Fig. 2 is a transverse sectional view taken on the line 2—2 of Fig. 1, illustrating the slidable and adjustable gage bar.

Fig. 3 is a side view of Fig. 1, partly in section and partly broken away, illustrating in full lines the swingable knife in a fully raised position, the slidably guided presser bar or compressor elevated, and the oscillatable toggle retracted; and in dash and dot lines, the knife in a partly lowered or closed position, the presser bar in a partly lowered position and initially clamping the material to cut, and the frame in its normally lowered position although about ready to be elevated by the pivoted or rotatable cam shaped links of the toggle coacting with the presser bar.

Fig. 4 is a view along the lines of Fig. 3, however showing the cams of the toggle having passed

2

their dead centre, the oscillatable toggle moving again toward a closed position even though the presser bar is in a squeezing relation with the paper to be severed, and the slidably guided frame bodily raised and maintained in such raised relation during the completion of the closing stroke of the knife.

Fig. 5 is a vertical sectional view on the line 5—5 of Fig. 3 illustrating the frame retracted and the compressor bar elevated and the paper to be severed unclamped.

Fig. 6 is a vertical sectional view on the line 6—6 of Fig. 3 but on the dot and dash line position of the latter.

Fig. 7 is a sectional and elevational view on the line 7—7 of Fig 4.

Fig. 8 is a plan view of another embodiment according to the invention, partly shown in section.

Fig. 9 is a side view of Fig. 8, illustrating the knife fully raised, the toggle closed, the presser bar elevated from the paper support and the frame which slidably guides the presser bar retracted.

Fig. 10 is a fragmentary front view of Fig. 9, and

Fig. 11 is an enlarged fragmentary view of Fig. 9, partly broken away and partly in section, illustrating the toggle shifting forwardly for actuating the presser bar.

The paper and/or cardboard trimmer is generally designated T and is characterized by the rectangular shaped support S having the bracket B appropriately fastened thereto. Offset and fixedly extending from this bracket is the bearing 10 rotatably sustaining shaft 11 encompassed at one end thereof by the helicoidal spring 12 having one end abutting bearing 10 and another end projecting into and fastened to the body of the nut 13 which together with the lock nut 14 are threadably connected to the threaded portion 15 of the rotatable shaft 11.

Fixedly mounted on shaft 11 to bodily rotate therewith is the knife guard or handle H which carries the adjustable stud 16 having head 17 adapted to be received and removably interlock with the depression or concavity 18 and adapted to coact with the cam face 19 and ride along face 20 of ear 21 projecting from the bearing 10.

By the present arrangement, the knife or blade K fixedly carried by the handle H is maintained under adequate pressure against the edge 22 of the flat metal reinforcing bar 23 fixed to the bracket B, the edge 22 being formed by the beveled face 24 and the horizontal face 25 of the

metal bar 23, face 25 being flush with the top surface 26 of the support S.

When the handle is fully elevated (Fig. 3) head 17 of the stud 16 is against the rib 27 which projects from the bracket and which serves as a stop to limit further rearward displacement of the handle. At this time, head 17 is also within the depression or socket 18 and the helicoidal spring 12 is fully expanded. As the handle starts to move downwardly, head 17 moves onto the cam face 19 thus causing the shaft 19 to be slightly slidably displaced and laterally relative to the bearing and against the resistance of the spring 12 which becomes slightly compressed. Then on the downward movement of the handle the cutting edge 28 of the knife K is urged under pressure against the cooperating paper load sustaining edge 22 of the reinforcing bar 23. On the upward or return stroke of the handle, head 27 first rides downwardly along face 20 and thereafter along the cam face 19 and into the socket 18, and due to the release or expansion of the spring 12 against the bearing, shaft 11 is slidably moved towards the bearing B.

Associated with the handle H is the toggle actuating link L which has its curved end 30 pivoted on the fulcrum pin or screw 31 fastened to the handle H and has its other end 32 pivoted to the pin or screw 33 transversing cam shaped link 34 and the oscillatable link 35 which in turn is pivoted on the pin or set screw 36 pivoted to the cam shaped link 37.

Closely straddling the lower cam shaped portions 38 of the pivoted links 34 and 37 are the parallel and spaced bars 39 and 40 fastened and clamped to the cross sectionally square shaped blocks or lugs 41 by the complementary bolt and nut means 42 and 43. Fixed to these spaced and parallel bars 39 and 40 are the spaced fulcrum means or screws 44 and 45 on which the cam shaped portions 38 of the links 34 and 37 are also rotatably or pivotally mounted.

Depending from each of the spacing blocks 41 are the enlarged cylindrical guide rods 46 having the reduced cylinder portions 47 and defining therewith the annular shoulders 48 (Fig. 5) removably seated on the bracket B. The reduced cylindrical portions 47 extend downwardly through spaced guide openings 48' in the bearing B and include terminal threaded ends 49 for adjustably receiving the clamping nuts 50. The enlarged and spaced cylindrical portions 46 extend upwardly through the spaced openings 51 in the reinforcing bar 23 and are encompassed by the compensatory helicoidal normally expanded equalizing or balancing springs 52 having their lower ends seated on the bracket B and their upper ends yieldingly sustain the perforated ears 53 extending from the top wall 54 of the slidably guided presser bar generally denoted 55 which is in the form of a square shaped tube as shown.

Ears 53 at the opposite ends of the compressor bar 55 have the guide opening 56 in which enlarged rods 46 project, hence the presser bar is slidably and vertically guided by these rods and the reduced extensions 47 of the latter are encircled by the helicoidal power springs 56 abutting the bracket B and washers 57. By tightening nuts 50 against the resistance of the power springs 56, the shoulders 48 of the guide posts defined by the enlarged and reduced cylindrical portions 46 and 47 are held tightly but removably against the bracket although the paper presser bar 55 is slidably guided on these posts which in turn are slidably guided in the openings 48'.

When the swingable handle is fully closed the forward end of the movable knife has completed its shearing operation and is resting on the rubber bumper 58 fixed to the bracket, and the slidable presser bar 55 is held depressed against the paper or work by the cam shaped portions 38 of the swingably or pivotally guided links 34 and 37 which together with the interconnecting link 35 define a toggle arrangement or actuator means automatically controlled upon the displacement or actuation of the pivoted link L on the operation of the swingably guided knife carrying handle H, and in the fully closed or opened relation of the handle the toggle is collapsed or closed with the interconnecting link 35 adjacent to the bar 39 of the frame as shown in the full line positions in Figs. 3 and 7 as distinguished from the open position of the oscillatable toggle illustrated in Fig. 6 and in the dash and dot line position of Fig. 3.

If the handle H be retracted, that is, from its closed to its open position, the pivoted link or actuator L has its rear end raised upwardly, thus actuating pin 33, causing the interconnecting link 35 to rise until the cam portions or projections 38 reach their dead centre, and thereafter oscillatable and interconnecting link 35 again falls and abuts the guide bar 39 at which time the head 17 of stud 16 of the handle is within locking socket or depression 18 and against the rib or stop 27 projecting from the bracket.

On the retracted stroke of the handle and after passing through their dead centres, the cam portions 38 progressively release their grip on the slidably guided compressor bar 55 and thereafter the latter is automatically retracted or raised by the compensatory and equalizing springs 52, thus defining gap or throat 59 between the reinforcing bar or fixed knife 23 and the compressor bar 55, permitting the reception of the sheets of paper, and/or cardboard or work 60 preparatory to shearing thereof by the knife on the down stroke of the latter.

If it be assumed that the handle is raised and a load of sheet material or stack of papers 60 is positioned on the board or support S and on the reinforcing bar 23 so that a portion 61 of the work to be ultimately severed projects through gap 59 and overhangs the beveled face 24, it is obvious that the projecting portion 61 above the edge 22 will be sheared off when the handle is moved to its closed position. However on such downward stroke of the handle, the latter again actuates link L, thus simultaneously operating the cam shaped links 34 and 37 of the oscillatable toggle, and cam portions 38 thereof coact to shift the slidably guided presser bar 55 downwardly against the resistance of the compensatory springs 52. As the compressor bar 55 moves downwardly, it meets the paper or papers to be severed, thus firmly clamping or squeezing the latter against the reinforcing bar 23. This action or initial squeezing takes place before the first half part of the downward stroke of the handle is completed. Since the toggle arrangement is directly and automatically controlled and in fact actuated by the handle, the toggle could not close on the last half of the downward stroke of the handle and the handle would be resisted against completion of its downward stroke after a sheet or sheets 60 have been clamped by the presser bar unless relief means were provided for elevating the frame generally designated 62 comprising the

parallel bars 39 and 40, blocks 41, and the slidable guide posts which embody the enlarged and reduced cylindrical portions 46 and 47.

Such relief is provided by the cam portions 38 coacting with the presser bar 55 to cause the yoke or frame 62, that is, the parallel guide bars 39 and 40 together with its fixedly secured blocks 41 and consequently the depending posts 64 to be elevated bodily relative to the platform or support S, after the presser bar 55 has initially clamped and squeezed the papers to be severed against the support and specifically the reinforcing bar 23 secured thereto. This relief action takes place towards the completion of the downward stroke of the handle even though the sheet or sheets of paper 60 have been clamped firmly by the presser bar 55 and such relief action is possible since the end posts 64, namely, those defined by the enlarged and reduced portions 46 and 47 fixedly carried by the parallel guide bars 39 and 40 are slidably guided and liftable in openings 48' in the bracket B and against the resistance of the power springs 56 which are compressed as the cams 38 cause the frame to be shifted away from the compressor bar.

For example the full line position in Fig. 3 illustrates the presser bar 55 in an unclamped relation and elevated by the balancing springs 52, the paper 60 to be severed is projected through gap 59, and the toggle defined by the pivoted links 34, 35 and 37 is closed. In such closed position of the toggle, link L is awaiting the closing of the handle for operating the toggle. On rotation of the links 34 and 37 as the handle moves on its downward cutting stroke, the cams 38 displace the compressor or compressor bar 55 as indicated by the dash and dot lines in Fig. 3 and the toggle is moving to a fully opened position as is also indicated by dash and dot lines in Fig. 3. The stack of papers and/or cardboard 60 is now firmly squeezed together and assumes the thickness of that shown in Fig. 6 as distinguished from its unclamped thickness indicated in Fig. 5.

Since the presser bar 55 is "solid" against the squeezed paper (Fig. 6) and the handle has not completed its downward stroke, it would be impossible to complete the cutting stroke if the yoke 62 could not be bodily elevated. Consequently, on the last part of the cutting stroke the cam portions 38 of links 34 and 37 acting on the presser bar, elevate the frame or yoke 62 causing the posts 64, embodying the enlarged and reduced portions 46 and 47 to be slidably raised against the progressive compression of the power springs 56 (Fig. 7), at which time of course the toggle is again closed and the knife has completed its shearing. Thus as the downward stroke is completed the gripping pressure by the pressure bar 55 on the paper 60 to be severed is enhanced or increased in that power springs 56 tend to pull frame 62 downwardly and hence reacting on the cams 38 to more tightly bear against the presser bar.

With the paper severed by the knife and the latter closed, the yoke or frame 62 is still held elevated (Fig. 7) and the presser bar 55 is firmly clamping the sheet or sheets of paper. Now by raising the handle, the oscillatable toggle is automatically controlled, links 34 and 37 are rotated rearwardly on the fulcrum pins 44 and 45, which action causes the cams to progressively release their former lifting action on the parallel bars 39 and 40, and the latter retract or are lowered automatically upon the expansion of the power springs 56. Also at this time, the cams 38 leave the pressure bar 55, and the latter is elevated by the balancing springs 55, thus the severed stack is ungripped, permitting the severed sheets to be withdrawn from the gap 59. It is apparent that with the arrangement described, that by the operation of the knife handle, the sheets of paper are automatically gripped prior to severing.

If desired a gage may be provided for regulating the width of paper to be cut by the knife. This gage generally 65 is slidably guided along track 66 which is a bar of metal suitably fastened at the rear margin of the support or board S. The gage 65 has a depending flange 67 adjustably receiving the threaded shank 68 carrying the manipulatable head 69. Fixedly attached to shank 68 is a clamping plate 70 and fixedly fastened to the underneath face of the gage is a rectangularly shaped rod 71, which together with the clamping plate 70 removably and slidably straddle track 66, which is adapted to rectilinearly guide the gage along the support or platform S and after the distance between the beveled faces 22 and the gage is determined, plate 70 is tightened against the support by manipulator 69. By this action, the gage may be slid along the support and quickly set and clamped. A flange or rod 72 is also secured to the underface of the gage to provide a stop for the papers to be severed.

In the embodiment according to Figs. 8–11, the operation of the presser bar is independent of the control of the pivoted handle H to which the knife K is fastened. The handle H is fixed to the shaft 81 journalled in bearing B appropriately fastened to the board or support S having secured thereto the spacing blocks or mounts 82 and 83 each provided with the beveled faces 84 at the ends thereof to allow for the positioning of the slidably guided posts or rivets 85 fastened to the web 86 of the U-shaped or channeled members broadly designated 87 each having upstanding and spaced sides or legs 88 closely straddling and fixedly secured by pins or rivets 89 to the bar 90.

Interposed between the spaced sides 88 of the channeled spaced members 87 and vertically and slidably guided thereby is the clamping or presser bar 80 provided at each end with a reduced terminal 91 and the relief shoulder 92, the latter defining with the lower margins 93 of the presser bar 80 the recesses 95 to permit the presser bar to clear web 86 of the channeled members 87 and press against the metal reinforcing bar or knife 95' fixed to the support or platform S and this bar has the beveled face 96 in yieldingly pressural engagement with the knife K when the handle H is moved downwardly and to a closed position.

Helicoidal equalizing springs 97 are suitably retained between the reduced terminals 91 of the presser bar 80 and webs 86 of the channeled members 87. These springs automatically retract the clamping or presser bar 80 after the swingable links 98 and 99 have been shifted to their retracted or closed position illustrated in Fig. 9 upon manipulation of the extension or handle 100 of link 98.

Links 98 and 99 are pivoted to the upper bar 90 fixed to the spaced channeled members 87 by the fixed fulcrum pins 101 and 102 and the cross or interconnecting link 103 is pivoted to the links 98 and 99 by the fulcrum pins 104 and 105 fixedly carried by the cross link 103 which when the handle 100 is operated always moves substantially parallel to the slidably guided clamping bar 80 which in turn is also caused to be guided vertically and rectilinearly by its pins 106 project-

ing from opposing sides thereof into the alined guide slots 107 in each of the sides 88 of the channeled members 87.

When toggle arrangement defined by the pivoted links 98, 99 and 103 is closed as in Fig. 9, the clamping bar or compressor 80 has been elevated automatically to its highest position by springs 97 and such position is controlled by the upper ends of the alined slots 107 in the spaced sides 89. The upper ends of slots 107 therefore characterize stop means to limit upward displacement of the clamping bar 80 which defines with the upper face of the reinforcing bar 95' a suitable gap or throat 108 for the reception of one or more sheets of paper and/or cardboard 109 to be severed by the swingably guided knife.

Each of the links 98 and 99 fixedly carries a cylindrical projection 110 serving as cam means adapted to simultaneously ride along the top face of the clamping bar 80 to actuate, depress or cam the latter for clamping the sheets of paper against the reinforcing bar 23 of course when the handle 100 is rotated counter clockwise (Fig. 9) in the matter of opening the toggle and if handle 100 is so rotated the toggle progressively opens until the pressure bar 80 initially clamps the load of paper 109 against the reinforcing bar 95'. Further rotation of the handle 100 in the same direction causes the toggle to further open and the projections or cams 110 ride along and abut the pressure bar thus more firmly causing the latter to grip the paper to be severed. However, since pressure bar is clamped against the paper and the paper is against the fixed reinforcing bar 95', further pressure on the pressure bar by the fixed projections 110 would cause the latter to jam unless some relief would be provided to permit the projections 110 to continue their movement until the fixed stop or pin 111 is reached. Such relief is provided by permitting the spaced channeled members 87 together with their interconnected fixed bar 99 to be slidably and bodily elevated relative to the pressure bar. In this way greater pressure may be applied to the clamping bar, which pressure is maintained in that the frictional relation between the actuating projections 110 increase as link 98 and its projection 110 move towards and against the stop 111 fixedly projecting from the compressor or pressure bar 80. Consequently, after cams 110 have passed their dead centres, when moving in a counterclockwise direction, increased pressure is applied by these cams or projections 110, thus move firmly frictionally locking the compressor bar on the work or paper formerly projected into throat 108 and the extent of the expansion of the toggle is controlled by stop pin 111 coacting with one of the cams 110.

The frame F, defined by the spaced channeled members 87, and their common interconnected fixed bar 90, when bodily elevated, rises against the resistance of the power helicoidal springs 112 surrounding the front and rear posts 85 slidably guided in the openings 113. These springs are normally expanded and are retained in recesses 114 in the support S and on the posts 85 by the washers 115 acted on by adjustable clamping means 116. The action of the power springs 112 is to normally hold the channeled members or spaced yokes 87 of the frame F seated against the reinforcing bar 95' when no pressure is exerted by the pressure or clamping bar 80 on the stack of papers to be severed.

By the present arrangement, it is apparent that as frame F or guide means for the compressor or clamping bar 80 is bodily elevated after the initial gripping of the sheet or sheets of paper to be severed, their spaced posts 85 likewise are slidably raised, and hence the power springs 112 are compressed, thus in fact tending to urge the frame downwardly but such action is resisted because of the frictional lock imparted by the projection or cam 110 on the pressure bar 80, and consequently the latter is held in a set and in an enhanced or increased clamped position after initially gripping the paper. Because the frame F may be bodily elevated, such action provides adequate relief to permit links 98 and 99 to fully open its toggle and thus enhance supplementary gripping pressure of the pressure bar on the stack of sheet material. To unlock the handle 100, the latter is rotated clockwise (Fig. 11), thus projection 110 gradually releases its presure on the clamping bar 80, and the frame slidable guided frame F, the guide means for the compressor bar, is rectilinearly retracted and automatically due to the immediate expansion of the counter balancing springs 112 and will again reset on the reinforcing bar 23. Also the pressure bar 80 automatically rises because of the expansion of the equalizing and balancing springs 97 and the paper stack may be now readily withdrawn from gap 108.

Pressural engagement of the knife K against the edge 117 (Fig. 10) of the reinforcing bar 95' on the downward or closing swingable stroke of the knife handle H is caused by the action of the helicoidal spring 118 having its free end 119 abutting the raised and fixed bar 120 and its other end 121 is anchored to one of the lock nuts 122 adjustably held on shaft 81. By this arrangement on the downward stroke of the handle, spring 118 is compressed and consequently the blade or knife K is maintained in continuous pressural engagement with the cooperating edge 117 of the reinforcing bar 95' fixed to the platform or support S. On the return or retractive stroke of the handle pursuant to the severing of the sheets of papers, spring 118 aids to retract the handle but on the completion of its down stroke it abuts the rubber bumper 123.

In each of the embodiments disclosed, a spring controlled and slidably guided compressor bar is utilized to initially grip the work or sheet material to be severed and subsequently the frame which slidably guides the compressor bar but which is normally held retracted relative to the support or platform is bodily elevated or raised against the resistance of power spring means and thus reacting through toggle or actuator means to provide added or enhanced pressure on the pressure bar or compressor, hence more firmly gripping the paper as desired. Such action takes place automatically either in the manual control of the embodiment according to Figs. 8–11 or by the oscillation of the handle H of the form illustrated in Figs. 1–7.

Various changes may be made in the details of construction and arrangement of parts without departing from the spirit of the invention or sacrificing any of the advantages therein.

We claim:

1. In combination, a platform for supporting sheet material, balancing spring means above said platform, a compressor normally held by said spring means above and away from said platform for removably clamping said material against said platform, guide means linearly shiftable relative to said platform for movably directing the displacement of said compressor to clamp

or unclamp said material, means operative during the clamping relation of said compressor against said material for displacing said guide means bodily in a direction away from said compressor and platform for increasing said clamping relation, and shearing means for severing said material in the clamped relation of the latter.

2. In combination, a platform for supporting sheet material, balancing spring means above said platform a compressor normally sustained by said spring means above and away from said platform for removably clamping said material against said platform, guide means slidably mounted on said platform for movably directing the displacement of said compressor to clamp or unclamp said material, power spring means, means operative during the clamping relation of said compressor against said material for displacing said guide means bodily and linearly in a direction away from said compressor and platform against the resistance of said power spring means for sustaining and enhancing said clamping relation, and shearing means swingable relative to said platform for severing said material in the clamped relation of the latter.

3. In combination, a platform for supporting sheet material, a frame having means slidably guided relative to said platform, a compressor bar slidably guided by said frame, power spring means for normally holding said frame retracted relative to said platform, means for actuating said bar for clamping or unclamping of said material, means effective during clamping of said material for bodily elevating said frame away from said bar and relative to said platform against the resistance of said power spring means, and means for shearing said material during clamping thereof by said compressor bar.

4. In combination, a platform for supporting sheet material, a frame having means slidably guided relative to said platform, a compressor bar slidably guided by said frame, power spring means for normally holding said frame retracted against said platform, actuating means for operating said bar for clamping or unclamping of said material, means carried by said actuating means and effective during clamping of said material by said bar against platform for bodily elevating said frame away from said bar and relative to said platform and against the resistance of said power spring means, and means for shearing said material during the clamping thereof by said compressor bar.

5. In combination, a platform for supporting sheet material, a frame having spaced posts slidably guided relative to said platform, a compressor bar slidably guided by said frame, power spring means about said posts for normally holding said frame against said platform, actuator means for operating said bar for clamping or unclamping of said material, means carried by said actuator means and effective during clamping of said material for bodily elevating said frame away from said bar and platform and against the resistance of said power spring means, and means for shearing said material during the clamping thereof by said compressor bar.

6. In combination, a platform for supporting sheet material, a frame having spaced posts slidably guided relative to said platform, a compressor bar slidably guided by said frame, equalizing spring means for normally holding said bar elevated and away from said material, power spring means about said posts for normally holding said frame against said platform, actuator means for operating said bar for clamping or unclamping of said material, means carried by said actuator means and effective during clamping of said material for bodily elevating said frame away from said platform against the resistance of said power spring means, and means for shearing said material during the clamping thereof by said compressor bar.

7. In combination, a platform for supporting sheet material, a compressor bar for removably clamping said material, guide means for linearly directing said bar towards or away from said material, a toggle pivoted to said guide means and having projecting means for shifting said bar to removably clamp said material, means for automatically shifting said bar away from said material upon removal of the clamping relation of said bar from said material, and swingably guided means for severing said material in the clamped relation thereof.

8. In combination, a platform for supporting sheet material, a bar, a frame having means for slidably guiding the ends of said bar, balancing spring means at said ends for holding said bar normally elevated and away from said platform, swingable means connected to said frame for actuating said bar for initially clamping said material against said platform, means for rectilinearly guiding said frame, power spring means cooperating with said frame to normally hold the latter against said platform, said swingable means pursuant to said initial clamping of said paper by said bar progressively increasing pressure on the latter by elevating said frame away from said platform against the resistance of said power spring means, and a swingable knife for severing said sheet material in the increased pressural engagement of said bar on said material.

9. In combination, a platform for supporting sheet material, a compressor bar for removably clamping said material, a frame having means for linearly guiding said bar towards or away from said material, means for movably guiding said frame towards or away from said material, toggle means pivoted to said frame and having means for shifting said bar to clamp said material, spring means for automatically shifting said bar away from said material upon removal of the clamping relation of said bar from said material, spring means for resisting movable displacement of said frame away from said material, and swingably guided means for severing said material in the clamped relation thereof.

10. In combination, a platform for supporting sheet material, a compressor bar for removably clamping said material, a frame for linearly guiding said bar towards or away from said material, means for slidably guiding said frame relative to said platform, spring means to resist slidable displacement of said frame away from said material, a toggle pivoted to said frame and having means for shifting said bar to removably clamp said material, means for automatically shifting said bar away from said material upon removal of the clamping relation of said bar from said material, swingably guided means for severing said material in the clamped relation thereof, and means connected to said toggle and severing means for automatically actuating said toggle upon displacement of said severing means relative to said platform to displace said bar against said material and to bodily displace said

frame away from said bar against the resistance of said spring means.

11. In combination, a platform for supporting sheet material, a compressor bar, a frame, means for linearly guiding said bar relative to said frame to removably clamp said material, toggle means pivoted to said frame for operating said bar, cutting means swingably connected to said platform, means for automatically displacing said toggle means in response to displacement of said cutting means, means for slidably guiding said frame relative to said platform, and spring means for yieldingly resisting displacement of said frame relative to said platform.

12. In combination, a platform for supporting sheet material, a compressor bar, a frame, means for linearly guiding said bar relative to said frame to removably clamp said material, actuator means for operating said bar, cutting means swingably connected to said platform, means for automatically displacing said actuator means in response to displacement of said cutting means, means for slidably guiding said frame relative to said platform, spring means for yieldingly resisting displacement of said frame relative to said bar in the clamped relation of the latter against said material, and spring means for automatically displacing said bar away from said material pursuant to the removal of said clamped relation.

13. In a paper trimming machine, a platform for supporting sheet material, a compressor bar, a frame above said platform, means for slidably guiding said bar in said frame, equalizing spring means interposed between said platform and bar for normally holding the latter spaced from said platform, means for slidably guiding said frame relative to said platform, cam means for shifting said bar to removably clamp said material against said platform, power spring means for yieldingly resisting displacement of said frame in a direction away from said bar and platform in the clamped relation of said bar against said material, means for operating said cam means for displacing said bar to initially clamp said material and for subsequently bodily elevating said frame away from said platform and against the resistance of said power spring means, and a knife for shearing said material during the clamped relation thereof.

14. In a paper trimming machine, a platform for supporting sheet material, a compressor bar, a frame above said platform, means for slidably guiding said bar in said frame, equalizing spring means interposed between said platform and bar for normally holding the latter spaced from said platform, means for slidably guiding said frame relative to said platform, cam means for shifting said bar to removably clamp said material against said platform, power spring means for yieldingly resisting displacement of said frame in a direction away from said bar and platform in the clamped relation of said bar against said material, toggle means pivoted to said frame for controlling said cam means to displace said bar to initially clamp said material and for subsequently bodily elevating said frame away from said platform and bar and against the resistance of said power spring means, and a knife for shearing said material during the clamped relation thereof.

15. In a paper trimming machine, a platform for supporting sheet material, a compressor bar, a frame above said platform, means for slidably guiding said bar in said frame, equalizing spring means interposed between said platform and bar for normally holding the latter spaced from said

platform, means for slidably guiding said frame relative to said platform, cam means for shifting said bar to removably clamp said material against said platform, power spring means for yieldingly resisting displacement of said frame in a direction away from said bar and platform in the clamped relation of said bar against said material, toggle means pivoted to said frame for controlling said cam means to displace said bar to initially clamp said material and for subsequently bodily elevating said frame against the resistance of said power spring means, cutting means for shearing said material during the clamping relation thereof, and means for automatically operating said toggle upon the displacement of said cutting means.

16. In combination, a platform for supporting sheet material, bearing means mounted on said platform, a frame having spaced channeled members and including an interconnecting bar spaced from said bearing means and secured to said members, spaced posts secured to said frame and projecting through and slidably guided by said bearing means, a shiftable compressor bar below said interconnecting bar and having ends slidably guided by said members, equalizing springs within said members and surrounding said posts and cooperating with said ends for normally holding said compressor bar away from said bearing means, power spring means about said posts to resist displacement of said frame away from said bearing means, actuating means connected to said interconnecting bar for operating said compressor bar to clamp said material against the resistance of said equalizing springs and to shift said frame away from said compressor bar against the resistance of said power spring means, and a swingable knife cooperating with said bearing means for severing said material.

17. In combination, a platform for supporting sheet material, bearing means mounted on said platform, a frame having spaced channeled members and including an interconnecting bar spaced from said bearing means and secured to said members, spaced posts secured to said frame and projecting through and slidably guided by said bearing means, a shiftable compressor bar below said interconnecting bar and having ends slidably guided by said members, equalizing springs within said members and surrounding said posts and cooperating with said ends for normally holding said compressor bar away from said bearing means, power spring means about said posts to resist displacement of said frame away from said bearing means, actuating means connected to said interconnecting bar for operating said compressor bar to clamp said material against the resistance of said equalizing springs and to shift said frame away from said compressor bar against the resistance of said power spring means, a swingable knife cooperating with said bearing means for severing said material, and means to limit the retraction of said frame upon releasing of said compressor bar from said material.

18. In combination, a platform for supporting sheet material, bearing means mounted on said platform, a frame having spaced channeled and slotted members and including an interconnecting bar spaced from said bearing means and secured to said members, spaced posts secured to said frame and projecting through and slidably guided by said bearing means, a shiftable compressor bar below said interconnecting bar and having pin means slidably guided by said slotted members, equalizing springs within said members

and surrounding said posts and cooperating with said ends for normally holding said compressor bar away from said bearing means, power spring means about said posts to resist displacement of said frame away from said bearing means, actuating means connected to said interconnecting bar for operating said compressor bar to clamp said material against the resistance of said equalizing springs and to shift said frame away from said compressor bar against the resistance of said power spring means, and a swingable knife cooperating with said bearing means for severing said material.

19. In combination, a platform for supporting sheet material, bearing means mounted on said platform; a slidable frame comprising spaced guide bars, block means secured to said bars, and spaced posts depending from said blocks and slidably guided by said bearing means; a compressor bar below said guide bars and having spaced ends slidably guided by said posts, equalizing springs surrounding said posts and cooperating with said ends for normally holding said compressor bar away from said bearing means, power spring means about said posts to resist slidable displacement of said frame away from said bearing means, cam means pivotally connected to said guide bars for operating said compressor bar to removably clamp said material against the resistance of said equalizing springs and to shift said frame bodily away from said compressor bar against the resistance of said power spring means, driven means for actuating said cam means, and a swingable knife pivotally connected to said driven means and cooperating with said bearing means for severing said material.

20. In combination, a platform for supporting sheet material, bearing means mounted on said platform; a slidable frame comprising spaced guide bars, block means secured to said bars, and spaced posts depending from said blocks and slidably guided by said bearing means; a compressor bar below said guide bars and having spaced ends slidably guided by said posts, equalizing springs surrounding said posts and cooperating with said ends for normally holding said compressor bar away from said bearing means, power spring means about said posts to resist slidable displacement of said frame away from said bearing means, toggle means pivotally connected to said guide bars and including cam means for operating said compressor bar to removably clamp said material against the resistance of said equalizing springs and to shift said frame away from said compressor bar against the resistance of said power spring means, actuating means for operating said toggle means, and a swingable knife pivotally connected to said actuating means and cooperating with said bearing means for severing said material.

21. In combination, a platform for supporting sheet material, bearing means mounted on said platform, a slidable frame comprising spaced guide bars, block means secured to said bars, and spaced posts depending from said blocks and slidably guided by said bearing means; a compressor bar below said guide bars and having spaced ends slidably guided by said posts, equalizing springs surrounding said posts and cooperating with said ends for normally holding said compressor bar away from said bearing means, power spring means about said posts and below said equalizing springs to resist slidable displacement of said frame away from said bearing means, toggle means pivotally connected to said guide bars and having spaced cam means for operating said compressor bar to removably clamp said material against the resistance of said equalizing springs and to shift said frame away from said compressor bar against the resistance of said power spring means, a link pivoted to said toggle means, and a swingable knife connected to said link and cooperating with said bearing means for severing said material.

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