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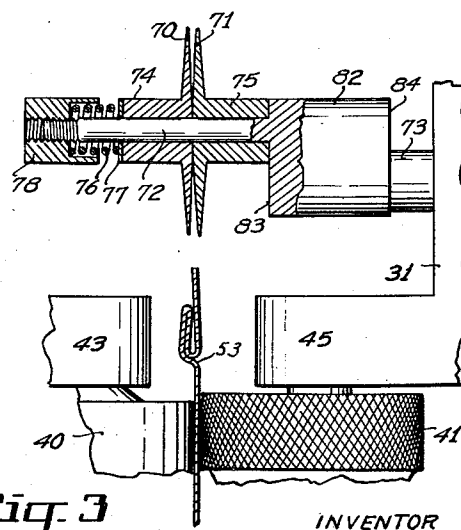
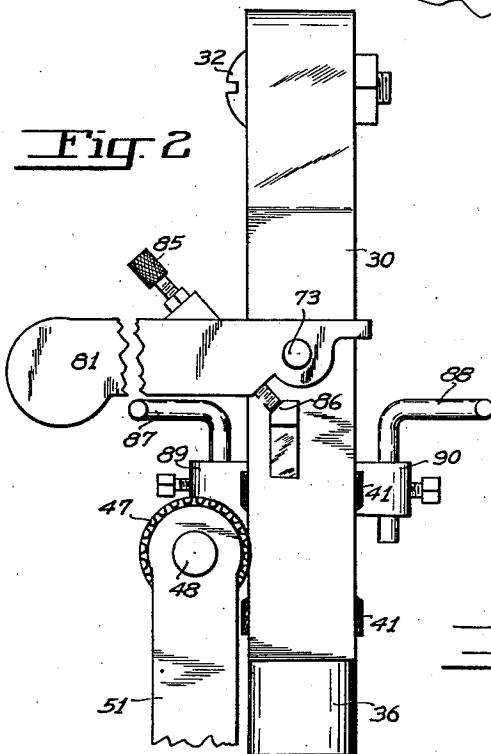
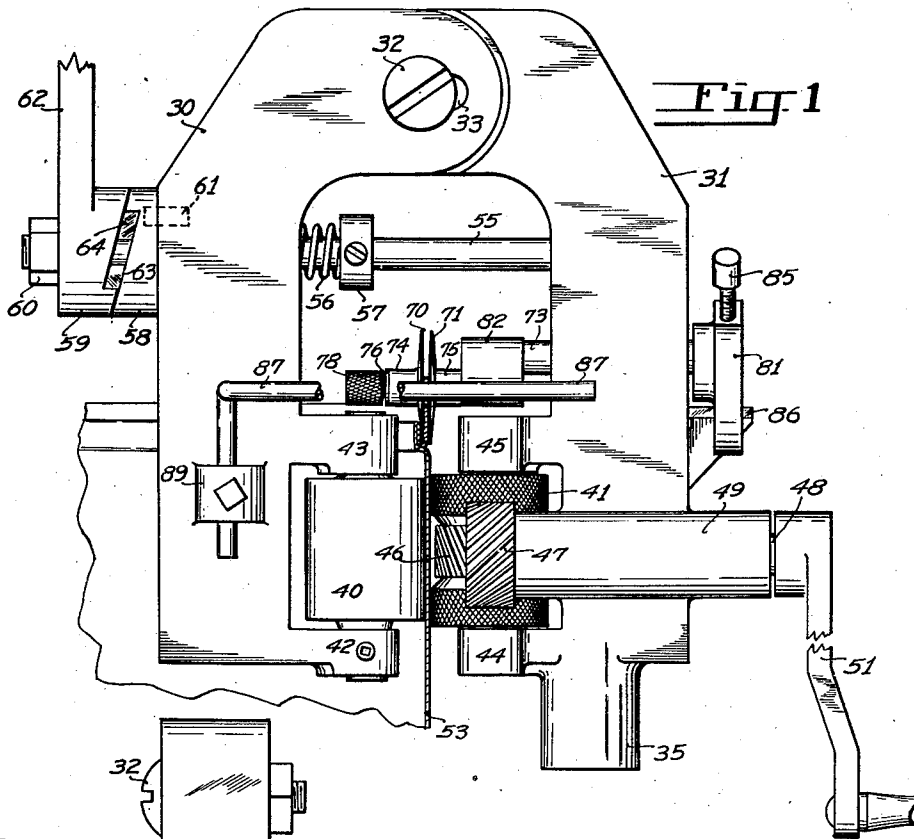
C. H. GREBE

2,334,407

LOCK OPENER

Filed March 15, 1943

2 Sheets-Sheet 1



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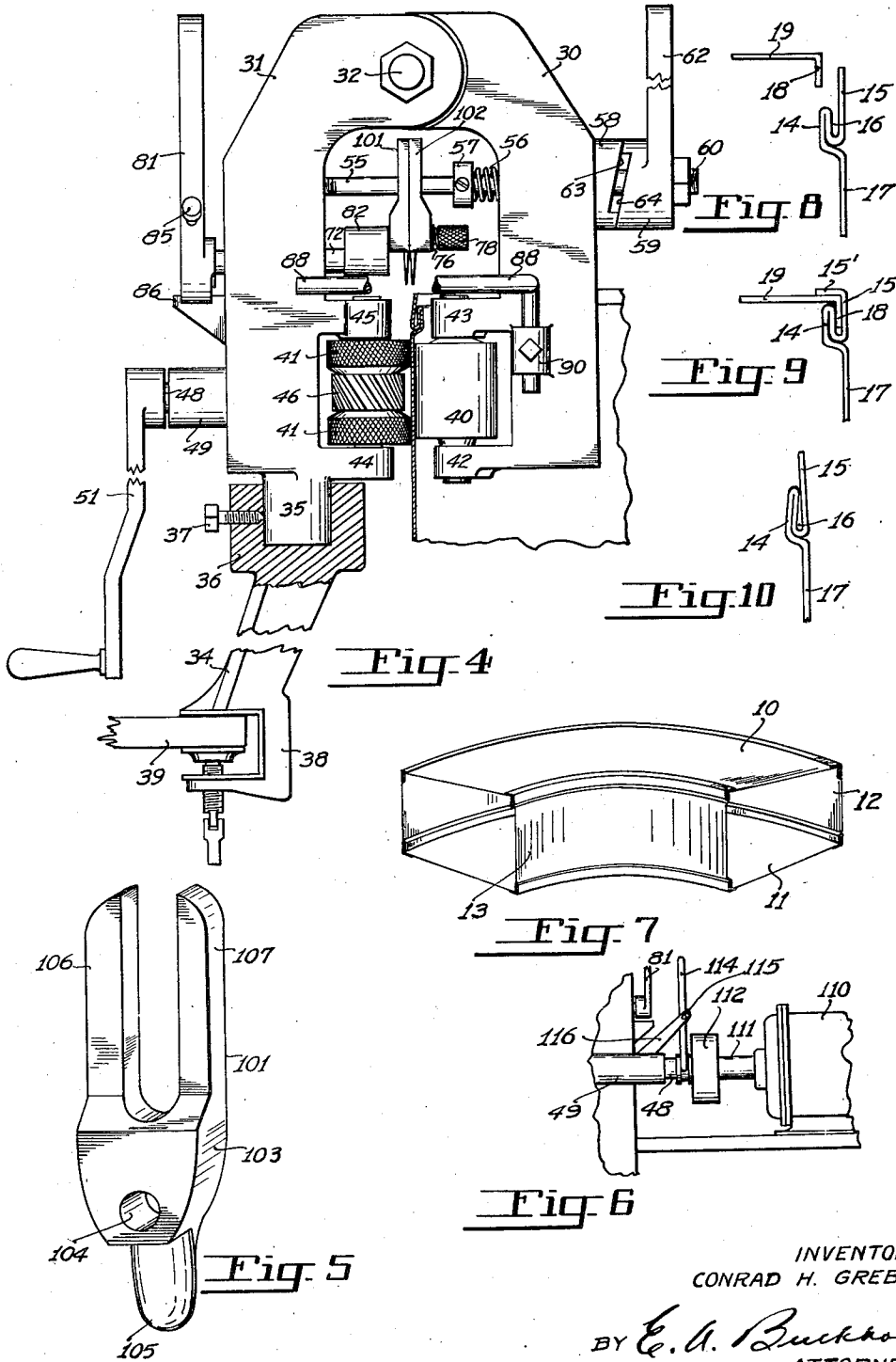
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2 Sheets-Sheet 2



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2,334,407

LOCK OPENER

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Application March 15, 1943, Serial No. 479,190

12 Claims. (Cl. 153—54)

The present invention relates to sheet metal working devices, and more particularly to machines for opening the pocket of a seam lock formed on the edge of a sheet metal member.

This application is a continuation-in-part of the parent application, Serial Number 366,172, filed November 13, 1940, entitled Lock openers.

For seaming together a pair of sheet metal pieces, the edge portions thereof are usually preformed or folded in a suitable manner so that when assembled the overlapping edge portions may be hammered together, forming an interlocking seam firmly uniting the two members. Machines have been devised for bending or folding the edges of the sheet metal members to be thus secured together but such machines can handle sheet metal pieces only in the flat condition. In the fabrication of irregular shapes, such as duct elbows in which the throat and heel plates must be curved, the edges of these plates must be folded before they are given the requisite curvature. In curving these plates, as by passing them through a roller type bending machine, the folded edge portions are more or less flattened out, closing the lock pockets. Obviously, before the various parts can be assembled, the lock pockets must be reopened. Such closure of the lock pockets during the bending operation may be prevented by inserting therein filler strips for restricting the deformation of the pocket side walls by the bending machine rollers; and, after the plates have been curved, removing the filler strips. A disadvantage of this method of procedure is that it is necessary to provide a separate filler strip for each seam pocket, for the filler strips cannot generally be used a second time. This is due to the fact that it is clamped so tightly in the pocket during the rolling operation that it is usually mutilated beyond further usability by the removal process. The amount of time required for inserting the filler strips into the pockets and removing the strips therefrom following the rolling operation, plus the cost of the filler strips themselves, adds very materially to the total cost of making seams by this method.

A more common method of opening closed or partially closed lock pockets is to run a screw driver, blunt chisel, or some other similar tool, by hand down the pocket trough, wedging the side walls apart. Not only is such a procedure time consuming, adding to the ultimate cost of the particular job, but also the results are generally very unsatisfactory in that the metal is irregularly bent, stretched and distorted so that the cooperating parts cannot be made to fit

smoothly together for forming a smooth, tight seam and a properly squared corner.

It is an object of the present invention, therefore, to provide a new and improved machine for opening quickly and efficiently the closed pocket of a preformed seam lock provided on the edge of a sheet metal member.

A further object of the invention is to provide a new and improved sheet metal seam lock opening machine which comprises relatively few parts of rugged design and which machine is simple to operate.

The machine of the invention includes a frame having mounted therein a plurality of feeding rollers which are adapted to engage with and forcibly move through the machine a sheet metal piece having a folded seam lock on the edge thereof. The sheet metal piece is so fed through the machine that the edge travels in a substantially straight line. The machine also includes an arrangement of tool elements which are adapted to engage with the standing edge portion of the lock and straighten it into parallel alignment with the sheet body while one of the tool elements depends downwardly into the lock pocket to wedge the folded wall portion of the lock outwardly into a predetermined spaced relation with respect to the standing edge portion.

Further modifications and advantages of the invention will be described in the following specification, while the features of novelty will be pointed out with greater particularity in the appended claims.

Referring to the drawings, Fig. 1 is a side elevation of the sheet metal seam lock opening machine constructed in accordance with one form of the invention; Fig. 2 is an end view of the machine illustrated in Fig. 1; Fig. 3 is a fragmentary view illustrating operational features of certain details of the machine shown in Fig. 1; Fig. 4 is a side elevation of a machine constructed in accordance with a modification of the invention; Fig. 5 is an enlarged view in perspective of one detail of the machine shown in Fig. 4; Fig. 6 is a fragmentary view illustrating a further modification of the invention; Fig. 7 is a view in perspective of a sheet metal conduit elbow having hammered lock seams at the corners thereof; Figs. 8, 9 and 10 are explanatory diagrammatic views illustrating in enlarged detail a typical hammered lock as used in sheet metal duct construction.

In order that the function of the machine of the invention may more clearly be understood,

the attention is first directed to the explanatory views of Figs. 7 to 10, inclusive. In Fig. 7 is shown a sheet metal duct elbow, of more or less standard construction, comprised of top and bottom plates 10 and 11 and heel and throat plates 12 and 13, respectively. The various plates are secured together by folded seams extending along the corners of the assembly, the particular seam shown in this instance being of the well known hammered or Pittsburg lock type. The details of this type of lock are shown more clearly in the views of Figs. 8 and 9. In the formation of this lock the heel and throat plates 12 and 13 are folded along their opposite edges while in a flattened condition, either by means of a brake or other suitable sheet metal bending machine, so as to provide an offset folded wall portion 14 and a standing edge portion 15 defining pocket 16 therebetween. In a properly formed lock of this type the standing edge portion 15 extends in the same plane as the body 17 of the sheet, while the offset folded wall portion 14 extends substantially parallel to the edge 15. The top and bottom plates 10 and 11 are provided at their opposite edges with flanges 18 bent at right angles to the body portions 19, which flanges are adapted to be cooperatively fitted into the pockets 16. The sheet metal members 17 and 19 are locked securely together by hammering over the uppermost edge of the standing portion 15 in the manner as indicated at 15' in Fig. 9. If the edges of the sheets are initially properly bent, the sheets may then readily be assembled and seamed together to form straight duct sections. However, in manufacturing curved duct sections such as is illustrated by the elbow shown in Fig. 7, the heel and throat plates must first be curved, which operation deforms the locks as initially prepared so as to make it impossible to assemble the various pieces without first reshaping the lock.

The deformation of locks in the curving operation is due to the fact that in passing the plates through the rolling machine the rolls on one side of the plate bear only against the folded wall portion 14 of the lock which projects above the surface of the plate body. This results in the bending of the wall and edge portions 14 and 15 towards each other and hence the closing of the lock pocket 16 in the manner illustrated in Fig. 10. It will be obvious that before the top and bottom plates 10 and 11 can be assembled into the pockets of the throat and heel plates the lock must be reformed, that is, not only merely opening the pocket 16, but also straightening the standing edge portion 15 and the folded wall portion 14 into their initially formed condition. It is for accomplishing this result that the machine of the invention finds its greatest usefulness.

While the machine of the present invention is particularly suitable for opening closed or partially closed pockets of seam locks of the type shown in Figs. 7 to 10, it will become obvious as the description thereof proceeds that the machine of the invention is not necessarily so limited in its field of application.

The machine as shown in the drawings comprises a frame having two leg portions 30 and 31, which are loosely connected together at their upper ends by means of a through bolt 32. The opening through the upper end of one of the frame legs for receiving the bolt 32 is slightly elongate in the transverse direction, as indicated at 33, so as to allow limited transverse movement between the frame legs 30 and 31. The frame is adapted to be fixedly supported as upon the

upper end of a conventional bench bracket as is indicated at 34 in Fig. 4. For this purpose the lower end of the leg 31 is provided with a cylindrical portion 35 which is adapted to be cooperatively received in the socket 36 provided in the upper end of the bracket 34 and be secured therein by any suitable means such as set screw 37. The lower end of the bracket 34 is provided with a suitable clamp 38 for fastening onto the edge portion 39 of a work bench.

The machine as described and illustrated is in the general form of an inverted U, the two legs of which are loosely connected together at their upper ends. The lower or free ends of the legs 30 and 31 are provided with feed rolls 40 and 41, respectively, which are journaled between corresponding pairs of inwardly extending bosses 42, 43 and 44, 45 formed integrally with the lower portions of the respective frame legs. The feed rolls 40 and 41 are arranged axially parallel, extending in the direction of the frame legs 30 and 31. The roller 40 is an idler, while roller 41 is a driver, it being provided with a gear 46 intermediate its ends and which gear is of a diameter somewhat less than the opposite end portions, which end portions are knurled in order to provide for suitable frictional engagement with the sheet metal piece to be fed thereby. The gear 46 is meshed with a right angularly arranged gear 47 attached to one end of a driving shaft 48. The driving shaft 48 is journaled within a hub portion 49 formed integrally with the lower end of the frame leg 31, while the outer end of the shaft 48 is provided with a crank handle 51 by means of which rotation of the driving roll 41 may be effected. As will subsequently be described, however, the driving force may be supplied by suitable motor means connected to the end of the shaft 48.

By virtue of the loose connection between upper ends of the frame legs, they may be moved laterally apart to permit the insertion of a sheet metal piece, as indicated at 52, between the feed rolls 40 and 41, with the upper edge of the sheet metal piece extending beyond the upper ends of the rolls and substantially at right angles with respect thereto. The frame legs 30 and 31 are further adapted to be shifted toward each other so as to bring the rolls 40 and 41 into clamping engagement with the opposite sides of the sheet metal piece 53 to hold it securely in place. A rod 55 is rigidly secured at one end to one of the frame legs, such as 31, extends at right angles between two frame legs, and through a cooperating opening provided in the opposite leg 30. The two legs 30 and 31 are normally urged apart by means of a biasing compression spring 56 arranged about the rod 55 between a stop collar 57 and the adjacent inner surface of leg 30. Any suitable means are provided on the outermost end of the rod 55 for effecting movement of the frame legs toward each other against the force of the biasing spring 56. The arrangement as illustrated comprises a pair of discs 58 and 59 arranged about the rod 55 between the outer surface of leg 30 and the stop nut 60 on the outer end of rod 55. The disc 58 is fixedly secured against rotation to the frame leg 30 by means of a suitable pin 61, while the disc 59 is provided with a handle 62 for effecting rotation thereof. The facing portions of the discs 58 and 59 are provided with cooperating sloping cam surfaces 63 and 64, respectively, whereby, upon rotational movement of the outer disc 59 by handle 62, an inward thrust is imposed upon

leg 30 to shift it toward leg 31. The slope of the cam surfaces 63 and 64 is such that movement of the handle 62 through an angle of approximately 180 degrees will effect movement of the frame legs between their limit positions. The slope of the surfaces 63 and 64 is also such that the frictional resistance therebetween will prevent automatic separation of the legs 30 and 31 and when once a sheet metal piece such as 53 is clamped between the feeding rolls 40 and 41.

The tool means provided for effecting the opening of the seam lock according to the first modification of the invention comprises a pair of similar relatively thin discs 70 and 71 mounted for free rotation upon an offset end portion 72 of a shaft 73. The discs 70 and 71 are preferably provided with oppositely extending hub portions 74 and 75, providing enlarged bearing surfaces therefor with respect to the shaft portion 72. The discs 70 and 71 are preferably of hardened steel, relatively thin at their edges, and beveled outwardly toward their centers to a thickness somewhat greater than at their edges. Preferably, the angle of bevel is somewhat greater on the hub sides of the discs than on the face sides substantially as illustrated in the fragmentary enlarged view of Fig. 3. The discs 70 and 71 may be biased towards each other by means of a compression spring 76 arranged about the outer end of the shaft portion 72 between the stop washer 77 and nut 78. The outer end of the shaft portion 72 is provided with a flattened side and washer 77 with a co-operatively shaped opening so as to prevent rotation of the disc hub 74 from automatically unscrewing the nut 78. By adjusting the nut 78, the degree of separation between discs 70 and 71 can be controlled for different weights of metal.

The shaft portion 72 supporting the discs 70 and 71 is secured eccentrically onto the end of the shaft portion 73 which is journaled within a cooperating bore provided through the frame leg 31. Mounted on the outer end of the shaft 73 is a manual adjusting handle 81 by means of which the shaft 73 may be rotated for raising or lowering discs 70 and 71 with relation to the edge of the sheet metal piece clamped between the feed rolls 40 and 41. The shaft 73, in addition to being freely rotatable within the frame leg 31, is also longitudinally slidable there-through in order to facilitate the adjustment of the disc tools into the operative position with respect to the standing edge of the sheet metal seam lock. The shaft 73 includes an enlarged portion 82 between the shaft portions 72 and 73 providing shoulders 83 and 84 on the opposite ends thereof. The shoulder 83 provides a thrust bearing surface for the hub 75 of the disc tool 71, while shoulder 84 provides a stop for limiting axial movement of the shaft 73 through the frame leg 31 to the right, as viewed in Fig. 1.

In Fig. 3 the disc tools 70 and 71 are shown in the elevated position, in which position they are placed during the clamping of the sheet metal member 53 between the feed rolls 40 and 41. To lower the disc tools 70 and 71 to the operative position, the handle 81 is rotated in the proper direction, counterclockwise as viewed in the end view of Fig. 2. Because of the bevel of the facing surfaces of the disc tools, the peripheral edges thereof are spaced apart a distance somewhat greater than the thickness of the metal of the piece 53, so that upon lowering of the discs 70

and 71 the upper extremity of the standing edge will be guided therebetween. Because of the fact that the standing edge will be variously deformed as regards its alignment with the main body of the piece 53, the supporting shaft 73 for the disc tools may be longitudinally adjusted through the frame leg 31 as necessary as the discs 70 and 71 are lowered. Following initial entry of the upper edge of the sheet metal piece between the discs 70 and 71, a continued force applied to the handle 81 will force the discs 70 and 71 downwardly until one of the discs reaches the bottom of the pocket, also forcing the standing edge portion of the lock into a parallel alignment with the body 53 and simultaneously wedging the folded wall portion of the lock outwardly into the proper spaced relation with respect to the standing edge portion. Preferably, the angle of bevel on the outer side of the discs is such that when one of the discs, as 70, is forced downwardly to the bottom of the pocket, the folded wall portion of the lock will be forced outwardly away from the standing edge portion into substantial parallel spaced relation therewith. With the disc tools 70 and 71 lowered to the operative position as illustrated in Fig. 1, the sheet metal piece 53 may be fed through the machine by rotation of the hand crank 51. The disc tools 70 and 71 will be retained in their lowered position as the sheet metal member is fed through the machine by virtue of the fact that the force applied thereagainst is in the reverse direction of rotation with respect to the supporting shaft 73 to that required for effecting upward movement of these discs. In order to limit downward movement of the disc tools 70 and 71 to the depth of the pocket in the sheet metal member 53, a screw 85 is provided in the handle 81, the lower end of which is adapted to butt against a stop 86 provided on the outer side wall of the frame leg 31 as shown more clearly in the end view of Fig. 2.

For guiding the movement of the upper edge of the sheet metal piece 53 through the machine in a predetermined straight line, a pair of guides, or gauges, 87 and 88 mounted in bosses 89 and 90 on the opposite sides of the frame leg 31 extend across the front and rear sides of the machine in parallel horizontal alignment with the upper edge of the sheet metal piece 53. These gauges may be adjusted by means of suitable set screws provided in the bosses 89 and 90, respectively.

The disc tools 70 and 71 are readily removable from the end of the shaft portion 72 by simply removing the nut 78, spring 76, and washer 77 for replacement with other tools of different sizes as may be required, depending upon the particular weight of metal being worked upon or curvature of the sheet. A second style of tools will presently be described.

Once the discs 70 and 71 are shifted to the operative position as shown in Fig. 1, the sheet metal piece 53 may be fed through the machine at a relatively high rate of speed, whereupon the seam lock is made in readiness for assembling into the final structure. The standing edge portion is straightened out smoothly and in parallel alignment with the main body of the sheet metal piece, and the folded wall portion is wedged out into a substantially parallel spaced relation with respect to the standing edge. It will be noted that while the disc 70 acts as a wedge for opening the lock pocket, it also acts as an ironer to smoothen the standing edge against the cooperating backing disc 71. While it is not essential, it is preferred that the discs 70 and 71 be of substantially

identical size and shape so that it will be immaterial as to the particular direction in which the sheet metal piece is passed through the machine. In other words, looking at Fig. 1, it is immaterial whether the folded wall portion of the lock seam edge extends to the left of the disc 70 or to the right of the disc 71. This is of importance particularly when dealing with curved heel and throat plates such as were referred to in connection with Fig. 7, which, it will be observed, while being curved in the same direction, have oppositely disposed locks formed on the opposite edges thereof.

Referring now more particularly to the modification illustrated in Figs. 4 and 5, the structure therein shown is substantially similar to that previously described, with the exception that the rotary type tools 70 and 71 as previously described have been substituted by nonrotatable, blade type tools. Referring to Fig. 4, the seam lock reforming tools in this instance comprise a pair of similarly formed elements 101 and 102 which are mounted upon the offset shaft portion 72 of the shaft 73 in substantially the same manner as the discs 70 and 71. One of the similar tool elements is shown more clearly in the enlarged perspective view of Fig. 5. Each tool comprises a central body portion 103 having an opening 104 there-through for cooperatively mounting upon the offset shaft portion 72 of the machine. Depending from the lower end of the central body portion 103 and adjacent one side thereof is a relatively thin tip portion 105 resembling a blunt chisel having rounded corners and with rounded tapered sides. The opposite sides of the tip portion 105 are tapered so that the central vertical cross section is of substantially the same dimensions as the radial section of one of the disc tools as previously described. The upper end of the tool 101 is bifurcated in the transverse plane defining two fingers 106 and 107 of such a length as to extend upwardly on opposite sides of the transverse rod 55 arranged between the frame legs 30 and 31. The slot between the fingers 106 and 107 is sufficiently long so as to permit of free up and down movement of the tools in response to movement of the adjusting handle 31.

The forming tools 101 and 102 of this modification are particularly suitable for use in connection with sheet metal pieces which have been curved with a relatively short radius. It will be understood that the rotary disc type tools such as 70 and 71, as previously described, are relatively wide across their mid section and for this reason cannot negotiate short radius turns of the seam lock without causing an excessive opening of the lock pocket. On the other hand, the tips 105 of the stationary type tools 101, 102 are relatively narrow in width so that the seam lock pocket will be opened only to the requisite degree even in the event of a short radius of curvature of the sheet metal piece being worked upon. In other respects, the mode of manipulation and function of the tools embodied in this modification of the invention are substantially the same as previously described.

As previously mentioned, the machine of the invention may be connected for operation through a suitable prime mover such as an electric motor, one such driving arrangement being illustrated in the fragmentary sketch of Fig. 6. In this instance a suitable electric motor 110 is provided, the shaft 111 of which may be connected through a suitable clutch 112 to the driving shaft 48 of the lock opening machine. The clutch 112 may be controlled by any suitable means such as a

hand lever 114 pivoted as at 115 onto a bracket arm 116 extending outwardly from the adjacent frame leg 31. It will be obvious that any suitable connection and control arrangement therefor may be provided between the motor and the driven machine.

Having described the principle of the machine of the invention in what are considered to be operative embodiments thereof, it is desired that it be understood that the various specific details shown are merely illustrative, and that the invention may be carried out in other ways.

I claim:

1. In a device for opening a lock seam on the edge of a sheet metal member, said device comprising a pair of relatively movable jaws, means for fixedly supporting a first of said jaws, means for supporting the second of said jaws on said first jaw in a generally parallel aligned relation with respect to said first jaw, axially parallel rollers journaled in corresponding free ends of said jaws, the axes of said rollers extending longitudinally of said jaws, said rollers being adapted to engage flatwise with each of the opposite sides of a sheet metal member, means for driving one of said rollers for feeding said sheet metal member between said rollers with the seamed edge of said member extending beyond the upper ends of said rollers and substantially at right angles with respect to the axes of said rollers, means adjustably secured to one of said jaws and independent of the other of said jaws for extending downwardly into the pocket of the lock seam on the edge of said sheet metal member for opening said lock seam pocket as said sheet metal member is fed between said rollers.

2. In a device for opening a lock seam on the edge of a sheet metal member, comprising a generally U-shaped frame including a pair of relatively movable leg portions loosely connected together at one end, means for adjusting said leg portions toward each other, a pair of axially parallel rollers journaled in the respective outer ends of said leg portions, the axes of said rollers extending longitudinally of said leg portions, said rollers being adapted to be moved by said adjusting means into engagement with corresponding opposite sides of a sheet metal member inserted therebetween, means for driving one of said rollers whereby said sheet metal member may be fed between said rollers with the seam edge of said member extending beyond the end of said rollers in a line at right angles with respect to the axes of said rollers, a wedging member adjustably secured to said frame, means for holding said wedging member in the pocket of the seam in the edge of said sheet metal member whereby said wedging member opens said lock seam pocket as said sheet metal member is fed between said rollers.

3. In a machine for opening the pocket of a seam lock on the edge of a sheet metal member, the combination comprising a frame, a pair of feed rolls for feeding through said machine said sheet metal member, a pair of relatively thin disc members for engaging with each of the opposite sides of the standing edge of the lock, one of said discs being adapted for extending into the said pocket for effecting the opening thereof, a shaft having an offset portion, said discs mounted coaxially for free rotation on said offset shaft portion, said shaft being journaled in said frame for rotational and longitudinal sliding movement therein, and control means attached to said shaft for effecting adjustment of said discs relative to said sheet metal member.

4. In a sheet metal lock opening machine, the combination comprising a frame, a pair of feed rolls for feeding through said machine a sheet metal member having a preformed lock edge, a pair of relatively flat pointed tool elements for engaging with each of the opposite sides of the standing edge of the lock, one of said tool elements being adapted to extend into the lock pocket substantially the full depth thereof for effecting the opening of said pocket, a shaft journaled in said frame, said tools being eccentrically supported on said shaft whereby said tools may be shifted toward and away from said sheet metal member, and means for maintaining said tools in a predetermined aligned position as regards the path of movement of said sheet metal member through said machine.

5. In a sheet metal seam lock opening machine, the combination comprising a frame, a pair of feed rolls for feeding through said machine a sheet metal member having a seam lock formed on the edge thereof, said sheet metal member being adapted to be fed through said machine so that said edge travels along a predetermined straight line at right angles to the axes of said rolls, a pair of similar relatively thin disc tools for engaging each of the opposite sides of the standing edge of the seam lock, means on said frame supporting said discs coaxially, the plane of said discs extending parallel with the plane of the sheet metal portion between said rolls, said discs having relatively thin edges and outwardly beveled opposite faces.

6. In a machine for opening the pocket of a seam lock on the edge of a sheet metal member, the combination comprising a frame, means for feeding said sheet metal member through said machine, gauge means on said frame for guiding the edge of said sheet metal member along a predetermined line, means on said frame for cooperatively engaging with each of the opposite sides of the standing edge portion of the seam lock, said means including means for depending downwardly into the seam lock pocket for simultaneously straightening said standing edge portion into substantial parallel alignment with the sheet metal piece body and wedging outwardly the folded wall portion of the lock into a predetermined spaced relation from said standing edge portion as said sheet metal piece is fed through said machine.

7. In a machine for opening the pocket of a seam lock on the edge of a sheet metal member, the combination comprising a frame, means on said frame for feeding said sheet metal member through said machine, means on said frame for guiding the lock edge of said member along a predetermined fixed line, means mounted on said frame on the opposite side of said fixed line with respect to said member for movement into cooperative engagement with the edge of said sheet metal member, said last mentioned means including a pair of tool elements for engaging with each of the opposite sides of the standing edge portion of the seam lock, one of said elements having a relatively thin tip portion for extending downwardly into the seam lock pocket, said tool elements simultaneously straightening said standing edge portion into substantial parallel alignment with the main body of said sheet metal piece and wedging the folded wall portion of the lock outwardly into a predetermined spaced relation from said standing edge portion as said sheet metal piece is fed through said machine.

8. In a machine for opening the pocket of a

lock seam on the edge of a sheet metal member, the combination comprising a frame, means for feeding said sheet metal member through said machine, means for guiding the lock on said member along a predetermined line, a pair of disc tool elements mounted on said frame on the opposite side of said line with respect to said sheet metal member, the planes of said disc tool elements extending parallel with said sheet metal piece, means adjustably supporting said elements on said frame for moving said disc tool elements into cooperative engagement with the standing edge portion of said lock, one of said disc tool elements depending into the lock pocket for simultaneously wedging the folded wall lock portion into a predetermined spaced relation from the standing edge lock portion.

9. In a machine for opening the pocket of a seam lock on the edge of a sheet metal member, the combination comprising a frame, means on said frame for feeding said sheet metal member through said machine, means on said frame for guiding the lock edge of said member along a predetermined line, a pair of disc tool elements mounted on said frame on the opposite side of said line with respect to said sheet metal member, said disc tool elements being mounted parallel with said sheet metal member, means for adjusting said disc tool elements into cooperative engagement with the seam lock on said member, the facing surfaces of said disc tool elements being beveled whereby the peripheral edges thereof are spaced apart for facilitating straddling of the standing edge portion of the seam lock by said disc tool elements.

10. In a machine for opening the seam lock on the edge of a sheet metal member, the combination comprising a frame, means for feeding said sheet metal member through said machine, means for guiding the seam lock edge of said sheet metal member along a predetermined line, a pair of tool elements mounted on said frame and adapted to be adjusted into cooperative engagement with the seam lock on said member, said tool elements having relatively thin extremities and having facing surfaces tapering outwardly whereby said extremities are spaced apart for facilitating straddling of the standing edge portion of the seam lock by said tool elements, one of said tool elements adapted for depending downwardly into the lock pocket for effecting the opening thereof as said sheet metal member is fed through said machine.

11. In a machine for opening the pocket of a seam lock on the edge of a sheet metal member, the combination comprising a frame, a pair of feed rolls for feeding through said machine said sheet metal member, a pair of relatively thin disc members for engaging with each of the opposite sides of the standing edge of the lock, one of said discs being adapted for extending into the said pocket for effecting the opening thereof, a shaft having an offset portion, said discs mounted coaxially for free rotation on said offset shaft portion, spring means on said shaft portion resiliently biasing said discs toward each other, said shaft being journaled in said frame for rotational and longitudinal sliding movement therein, and control means attached to said shaft for effecting adjustment of said discs relative to said sheet metal member.

12. In a sheet metal lock opening machine, the combination comprising a frame, a pair of feed rolls for feeding through said machine a sheet metal member having a preformed lock edge, a pair of relatively flat pointed tool elements for

engaging with each of the opposite sides of the standing edge of the lock, one of said tool elements being adapted to extend into the lock pocket substantially the full depth thereof for effecting the opening of said pocket, a shaft journaled in said frame, said tools being eccentrically supported on said shaft whereby said tools may be shifted to-

ward and away from said sheet metal member, spring means on said shaft resiliently biasing said tools together, and means for maintaining said tools in a predetermined aligned position as regards the path of movement of said sheet metal member through said machine.

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