Sept. 2, 1952 M. TROOP 2,609,028

AUTOMATIC PITTSBURGH LOCK SEAM SEALER

Filed Sept. 20, 1948 2 SHEETS—SHEET 1

Fig. 1.

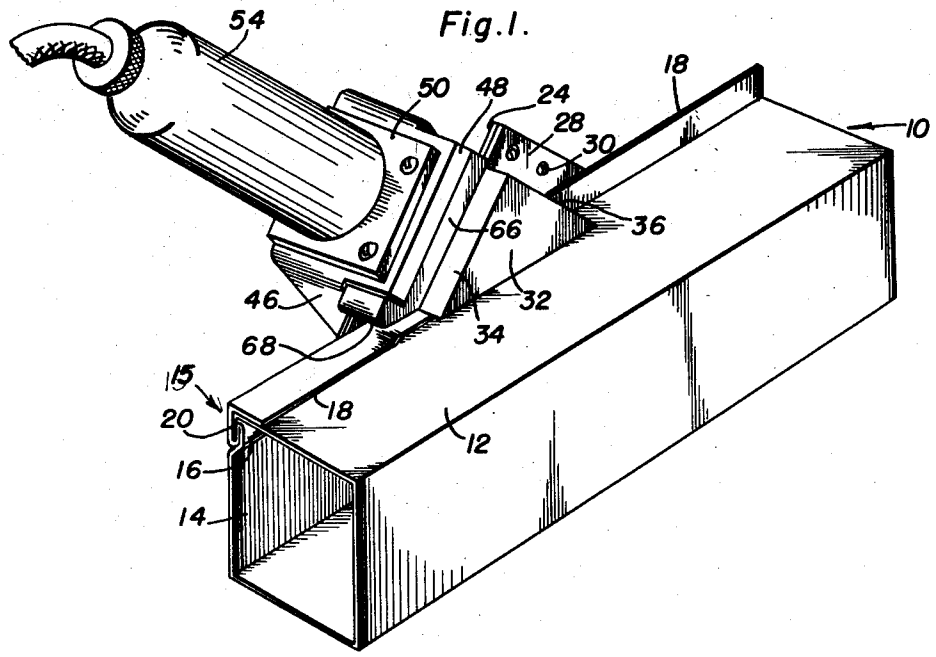
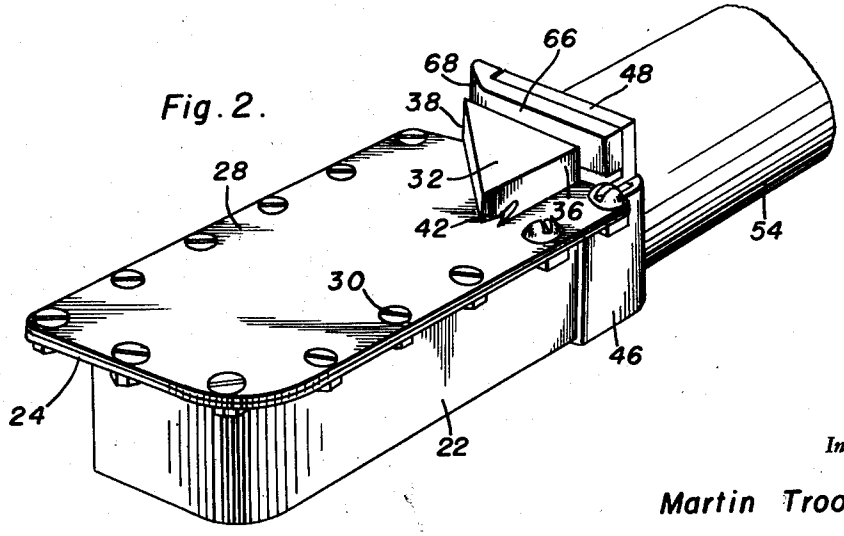


Fig. 2.



Inventor

Martin Troop

By Clarence A. O'Brien and Harvey B. Jacobson

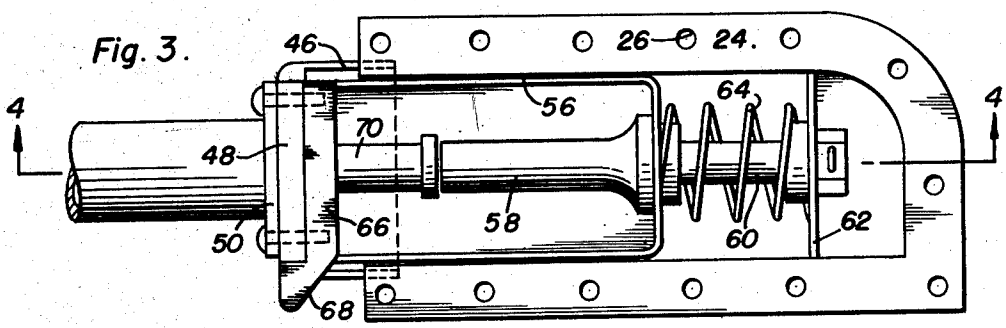
Attorneys

Sept. 2, 1952 M. TROOP 2,609,028

AUTOMATIC PITTSBURGH LOCK SEAM SEALER

Filed Sept. 20, 1948 2 SHEETS—SHEET 2

Fig. 3.



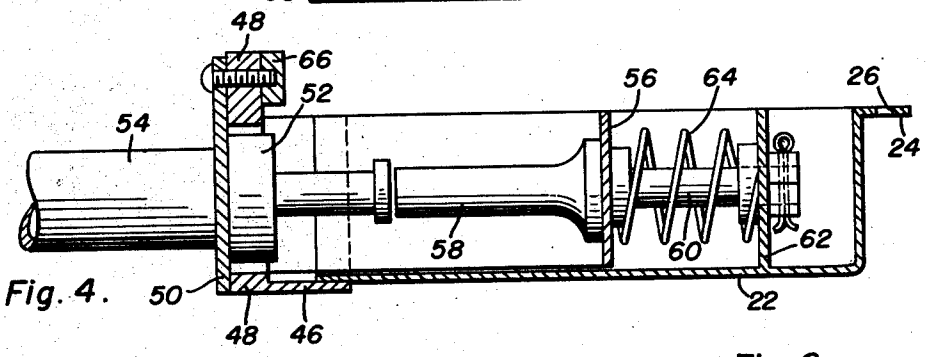


Fig. 4.

Fig. 6.

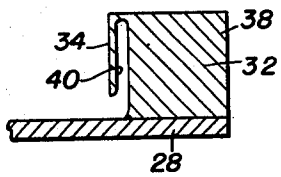
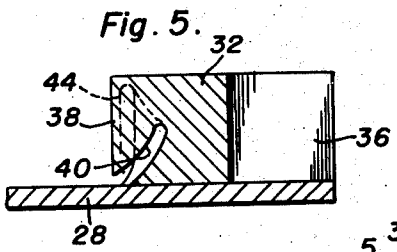


Fig. 5.



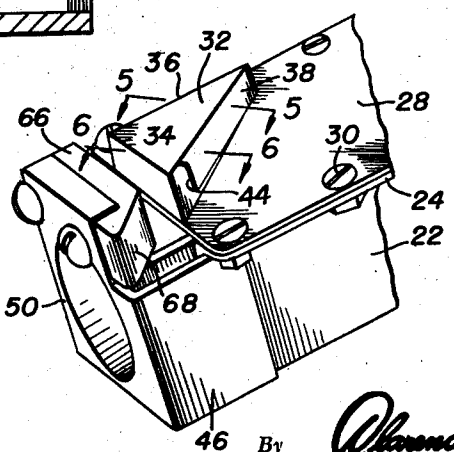


Fig. 7.

Inventor

Martin Troop

By Clarence O'Brien and Harvey B. Jacobson

Attorneys

Patented Sept. 2, 1952 2,609,028

UNITED STATES PATENT OFFICE

2,609,028

AUTOMATIC PITTSBURGH LOCK SEAM SEALER

Martin Troop, Bayonne, N. J., assignor of one-half to Edward Griffin, Bayonne, N. J.

Application September 20, 1948, Serial No. 50,226

6 Claims. (Cl. 153—11)

1

This invention relates to new and useful improvements in devices for turning inwardly the normally standing edge of a Pittsburgh lock seam and the primary object of the present invention is to provide a machine for receiving and turning inwardly the standing edge of a Pittsburgh seam and embodying novel and improved means for tapping and sealing the standing edge after the same has been turned inwardly.

Another important object of the present invention is to provide a Pittsburgh lock seam sealing tool including a die for turning the standing edge of said seam inwardly and a reciprocating hammer that will seal the said edge after the same has been turned inwardly, the hammer following the die so that the said edge will be sealed throughout its length.

Yet another object of the present invention is to provide a Pittsburgh lock seam sealer including a housing, a die carried by the housing for turning the standing edge of a Pittsburgh lock seam and having a bearing surface whereby the housing will be overbalanced at its forward portion so that as a reciprocating member carried by the housing is actuated the said housing and die will move forwardly to eliminate the necessity of an operator having to force the housing forwardly.

A further object of the present invention is to provide a Pittsburgh lock seam sealer that is extremely small and compact in structure and which embodies in its construction a group of elements that are quickly and readily assembled or disassembled in a convenient manner.

A still further aim of the present invention is to provide a device of the aforementioned character that is simple and practical in construction, strong and reliable in use, neat and attractive in appearance, efficient and durable in operation, relatively inexpensive to manufacture, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of the present invention, and showing the same in use;

Figure 2 is a further perspective view of the present invention illustrating the entrance for the die;

Figure 3 is a top plan view of the present invention, and showing the closure plate and die removed therefrom;

2

Figure 4 is a longitudinal vertical sectional view of the present invention taken substantially on the plane of section line 4—4 of Figure 3;

Figure 5 is an enlarged vertical sectional view taken substantially on the plane of section line 5—5 of Figure 7;

Figure 6 is an enlarged vertical sectional view taken substantially on the plane of section line 6—6 of Figure 7; and

Figure 7 is a fragmentary perspective view of one end of the present invention.

Referring now to the drawings in detail, wherein for the purpose of illustration, there is disclosed a preferred embodiment of the present invention, the numeral 10 represents a substantially rectangular conduit section of bendable metal generally including a pair of adjacent walls 12 and 14 that are joined by a Pittsburgh seam 15 in order to form and retain the conduit 10 in its intended shape.

The wall 14 is provided with an inwardly extending longitudinal channel 16 adjacent its free longitudinal edge 18 that receives the angulated or bent longitudinal edge 20 of the wall 12, and the edge 18 extends well outwardly from the outer surface of the wall 12, as shown best in Figure 1 of the drawings.

The present invention does not attempt to claim the above and well known conventional structure, but is merely a device that is used in conjunction therewith for turning and sealing the normally standing edge 18 against the outer surface of the wall 14 and for forcing the edge 20 tightly into the channel 16.

Heretofore many tools have been employed for turning the edge 20 inwardly, however, a further operation and frequently two operations were necessary in order to seal the edge 18 against the wall 12 and the edge 20 in the channel 16. It is therefore the principal feature of this invention to provide a tool for simultaneously accomplishing the above results.

To carry out the intended purposes of the present invention, there is provide a hollow, substantially rectangular housing or slide 22 of preferably metallic construction that is open at one side and at one end. The free edges of the walls forming the housing are turned outwardly to provide a retaining flange 24 having spaced apertures 26.

A cover plate or closure 28 bears against the flanged portion 24 and is provided with apertures registering with the apertures 26 and which

receive suitable fasteners 30 for detachably securing the closure 28 to the housing 22 for closing the open side thereof.

A substantially triangular die or block 32 is suitably fixed to the outer surface of the closure 28 adjacent the open end of the housing 22. One edge 34 of the die 32 is substantially flush with one transverse edge of the closure 28, and one edge 36 of the die 32 is spaced parallel to one longitudinal edge of the closure 28 so that the remaining edge 38 of the die 32 will form a bearing surface that is inclined relative to the longitudinal axis of the housing 22 for a purpose which will later be more fully apparent.

A guide slot 40 is provided in the die 32 and extends from the edge 36 to the edge 38 along a smooth curve to provide a substantially vertical entrance slot 42 and a substantially horizontal exit slot 44 so that as the edge 18 is fed through the slot 40 from the entrance 42 thereto, the edge 18 will be folded or turned inwardly against the outer surface of the wall 12. It being understood that the edge 38 of the die 32 will bear against the outer surface of the wall 12 and the greater portion of housing 22 will be disposed forwardly of the die since the housing 22 will be supported relative to the conduit 10 by the edge 38 of the die, and the outer surface of the closure 28 will bear against the outer surface of wall 14.

A collar 46 embraces the housing 22 at the open end thereof and is suitably secured thereto. The collar 46 is integrally formed with an apertured plate 48 to which there is detachably secured a further plate 50 having a central opening that registers with the aperture in plate 48 and of a diameter less than the diameter of the aperture in plate 50 so that the enlarged head portion 52 of a hammer body 54 will extend through the opening in the plate 48 and bear against the inner surface of the plate 50.

A substantially channel shaped guide 56 is slidably mounted in the housing 22 and the web portion thereof supports a stem 58 having a portion 60 extending from the web portion of the guide 56 and anchored to a plate 62 that is fixed in the housing 22.

A resilient member 64 is interposed between the plate 62 and the web portion of the guide 56 to normally urge the guide from the plate 62.

Removably secured to the inner surface of the plate 48, is an elongated hammer element or striking member 66 having an inclined surface 68.

In practical use of the present invention, the same is applied to the rear portion of the edge 18 and as the reciprocating plunger 70 of the hammer body 54 is actuated, by air pressure or any other suitable power means, the same will engage the stem 58 to reciprocate the guide 56 and the hammer member 66 whereby the surface 68 will tap and hammer the edge 18 after the same has been turned inwardly, as shown in Figure 1.

Since the greater portion of the housing 22 is disposed forwardly of the die and hammer body 54, as the plunger 70 is reciprocated, the housing 22 and its associated parts will move forwardly.

When the die has passed over the forward end of the edge 18, the hammer member 66 will strike and seal the forward end of the edge 18 thus sealing the edge 18 through its length.

It should be noted, that as the edge 18 is hammered by the member 66 the edge 20 will also be driven into the channel 16.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A Pittsburgh lock seam sealer comprising a slide, a die fixed to the slide and having an opening therein for receiving and turning the standing edge of a Pittsburgh seam during movement of the slide, and a reciprocating hammer slidably carried by said slide and trailing said die, said hammer being movable with said slide and movable relative to said die to hammer the upstanding edge of a Pittsburgh seam after the same has been turned.

2. An automatic Pittsburgh lock seam sealer comprising an elongated housing having upper and lower portions, means carried by the upper portion of said housing for supporting the housing upon a Pittsburgh lock seam and for turning the standing edge of a Pittsburgh lock seam during movement of the housing, said means including a flat bearing face inclined relative to the longitudinal axis of the housing and located at the upper portion of said housing to retain the lower portion of the housing in advance of the upper portion of the housing to aid in moving the housing relative to a Pittsburgh lock seam, and additional means carried by the upper portion of the housing and trailing said first mentioned means for tapping and sealing the turned edge of a Pittsburgh seam.

3. The combination of claim 1, wherein said additional means includes a reciprocating hammer disposed transversely of said housing, said hammer reciprocating in a path transversely of the housing for aiding the movement of the housing relative to a Pittsburgh seam.

4. A Pittsburgh lock seam sealer comprising an elongated housing having an upper rear portion and a lower forward portion, means mounted on the upper rear portion of said housing for receiving and turning the upstanding edge of a Pittsburgh seam during movement of the housing, said means including a flat bearing face inclined relative to the longitudinal axis of the housing to overbalance the housing at the lower forward end thereof, and means mounted on the upper rear portion of said housing and trailing said first mentioned means for tapping and sealing the upstanding edge of a Pittsburgh seam after the edge has been turned, said last mentioned means including an elongated reciprocating hammer disposed transversely of said housing for aiding the movement of the housing relative to a Pittsburgh seam.

5. A Pittsburgh lock seam sealer comprising an elongated member adapted to ride against one side wall of a conduit and including an upper end and a lower end, a means carried by said member for receiving and turning the standing edge of a Pittsburgh seam during movement of the member, said means including a die having a flat bearing face inclined relative to the longitudinal axis of the member and disposed at the upper end of the member for engaging the wall of a conduit to overbalance the member at its lower end, and a reciprocating hammer supported solely by the member and disposed trans-

versely of the member and trailing the means, said hammer tapping and sealing the edge of a Pittsburgh seam during movement of the member and after the standing edge of a Pittsburgh seam has been turned by said means.

6. A Pittsburgh lock seam sealer comprising a slide, a die fixed to said slide and having an elongated curved passage for receiving and turning the standing edge of a Pittsburgh seam during sliding movement of the slide, said passage including an entrance and an exit, and a reciprocating hammer slidably carried by said slide behind the die and at the exit of said passage and movable relative to the die and transversely of the passage for tapping and sealing the edge of a Pittsburgh seam turned by said die.

MARTIN TROOP.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
348,558	Henning	Sept. 7, 1886
355,108	Small	Dec. 28, 1886
1,258,206	Fetcher	Mar. 5, 1918
1,816,318	Eksergian	July 28, 1931
2,233,937	Hexdall	Mar. 4, 1941
2,263,952	Marcorelli	Nov. 25, 1941
2,295,131	Scott	Sept. 8, 1942
2,414,178	Sprinkle	Jan. 14, 1947

FOREIGN PATENTS

Number	Country	Date
524,091	Germany	July 6, 1942