July 17, 1951 E. M. ARTHUR 2,560,623

RIVETING DEVICE WITH PRESSURE AND STRIKER ELEMENTS

Filed Oct. 29, 1947

FIG. 1.

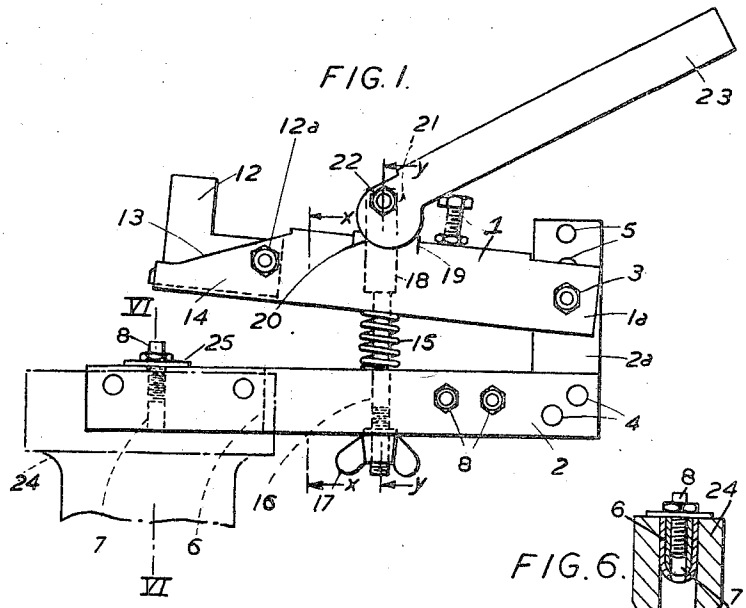


FIG. 6.

FIG. 2.

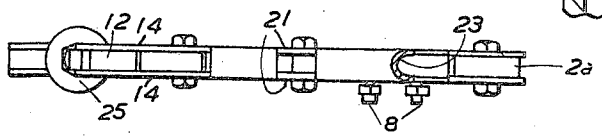


FIG. 3.

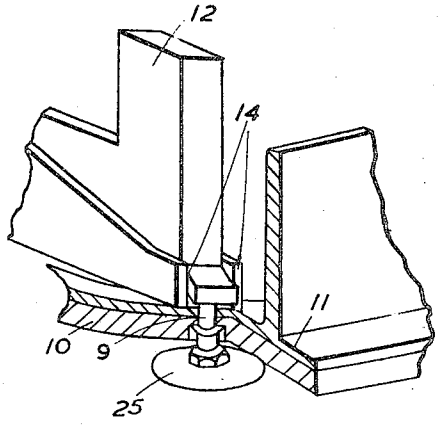


FIG. 4.

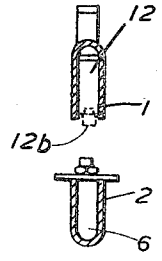
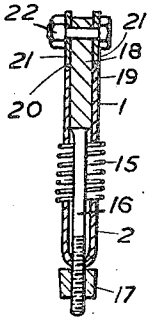


FIG. 5.



Inventor

EVAN MEIRION ARTHUR

By Leon W. Strauss

AGT

Patented July 17, 1951

2,560,623

UNITED STATES PATENT OFFICE

2,560,623

RIVETING DEVICE WITH PRESSURE AND STRIKER ELEMENTS

Evan Meirion Arthur, West Heath, Birmingham, England

Application October 29, 1947, Serial No. 782,935
In Great Britain January 22, 1947

3 Claims. (Cl. 218—19)

1

This invention relates to a riveting device for riveting a brake lining on a brake shoe, and it has for its object an improved device of the aforesaid type which is effective in action and simple and inexpensive to produce.

A further object of the invention resides in a device which enables the brake shoe and liner to be pressed against the head of a rivet in an improved manner.

A still further object of the invention is to arrange striker means for pressing the brake shoe and liner against the rivet head so that the striker can be applied to a rivet when located near a strengthening web on a brake shoe.

A still further object of the invention is to enable the brake shoe and liner to be pressed against a rivet head with a predetermined and uniform pressure.

In order that the invention may be clearly understood and readily carried into effect, reference is now had to the accompanying drawings, on which:

Figure 1 is a side elevation of a riveting device constructed according to this invention.

Figure 2 is a plan view, with a portion of the cam lever broken away.

Figure 3 is a perspective view illustrating the device applied to a portion of a brake shoe and lining.

Figure 4 is a section on line X—X of Figure 1.

Figure 5 is a section on line Y—Y of Figure 1.

Figure 6 is a section taken along line VI—VI of Figure 1.

The riveting device comprises an arm or lever 1 and a base member 2 pivoted together on the bolt 3 which passes through the arm 1 and the extension 2*a* fixed to and forming part of the base member 2. The arm 1 and base member 2 are formed of sheet metal bent into U-shaped configuration and the part 2*a* is fixed by the rivets 4 inside the channel of the base member 2. The bend of the channel of the base member forming arm 1 is notched at the top to form two cheeks between which the tailpiece 2*a* passes. The tailpiece 2*a* has a number of perforations 5 so that the distance apart of the arm and the base member can be varied according to the shape or size of the parts to be riveted. The outer end of the base member 2 is filled in by a metal block 6. A screw threaded hole 7 is provided in the block 6 and an anvil pin 8 is detachably fixed therein, such pin being adapted to support the head, for instance, of the rivet 9 adapted to fix the brake lining 10 to the brake shoe 11. The anvil pin 8 is replaceable so that different sizes

2

of pins can be fitted according to the size of the rivet, and the pins 8 not in use can be screwed into tapped holes in the base member 2 for storage purposes. The outer end of the arm 1 forms a clamping jaw and a striker arm 12 is pivoted on the bolt 12*a* in the channel formed by the U-section arm 1. The upper portion of the clamping jaw is cut away at 13 so that the striker 12 is mounted between two bifurcations or side cheeks 14. The striker 12 extends from its pivotal connection 12*a* to the end of the gripping arm so that the striker can operate at the extreme end of the clamping jaw. The arm 1 and base member 2 are normally forced apart by means of a spring 15 which bears on the inner edges of the arm 1 and base member 2, and the extent of the opening is limited by the bar or rod 16 which passes through a perforation in the base member 2 and upwardly between the walls of the arm 1 and has an adjusting nut 17 screwed on the portion of the rod projecting from the base member 2. The upper end of the rod 16 has an integral head 18 which passes through the channel of the arm 1 and through a slot in the top of the arm 1, this slot being formed by bending out side cheeks 19 from the arm 1. The upper edges 20 of these side cheeks form a bearing for a cam 21 which is pivotally mounted on the head 18 by the bolt 22. The spring 15 therefore forces open the arm 1 and retains the cam 21 on its seat 20 and also limits the opening movement of the arm. In order to clamp the brake shoe parts 10 and 11 together before the riveting operation, the cam 21 is turned by its lever 23 to cause the cheeks 14 to bear on the brake shoe 11 and the anvil pin 8 to bear against the head of the rivet 9. By adjusting the nut 17, the arm 1 can be placed in position so that the movement of the lever 23 will move the arm 1 into the clamping position whereby various thicknesses of material to be clamped can be provided for by the adjusting nut 17. Further adjustment can be obtained by fitting the bolt 3 in any one of the required perforations 5. The base member 2 can be fixed in the jaws of a vise 24 and the washer 25 bears on the tops of the jaws (see Fig. 6). When the parts to be riveted are clamped between the jaws on the arm 1 and base member 2 a blow is given to the striker 12 to effect the riveting operation. The riveting device thus constructed is extremely simple in construction and a riveting operation can be effected with great ease. The parts to be riveted are clamped together before the riveting operation and therefore the parts to be riveted do not have to be pressed together in-

itially by the riveting over of the pin. The striker is guided and constrained to give blows which are in the axial direction of the rivet. As the lining is clamped on the brake shoe, the end of the stem of the rivet is only required to be firmly riveted over the shoe and the riveting action is not required to initially clamp the lining and shoe together. The striker 12 may have a rivet head spreader 12b detachably fitted thereto so that any particular rivet head can be formed. The spreader may be in the form of a pin having a flat or concave spreader face or again the face may be shaped for splitting and spreading a solid rivet or for flanging over a tubular rivet. The device can be used for riveting together any other members. A particular feature is to be stressed in that the L-shaped striker enables the riveting device of the invention to be used in awkward places such as for riveting the clutch lining on clutches of motor vehicles. In the example illustrated in Figure 3, the brake shoe has a strengthening flange and notwithstanding that the rivet is placed adjacent this flange the striker can be freely applied to the rivet 9.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent, is:

1. A riveting device for riveting a brake lining on a brake shoe; comprising a base member, an arm pivotally mounted at its inner end on said base member, said arm including a substantially vertically bifurcated portion at the outer end thereof, an anvil pin on the outer end of said base member and opposite said bifurcated portion for supporting the head of a rivet, a striker pivotally mounted on said arm and guided between said furcations and extending forwardly to the front of the latter, and a cam device for pressing said arm toward said base member to thereby press said brake lining and said brake shoe against the head of a rivet supported on the anvil pin.

2. A riveting device for riveting two parts together, a brake lining to a brake shoe, respectively, comprising a base member, an anvil pin on the outer end of said base member for supporting the head of a rivet, an arm pivotally mounted at its inner end of the base member, said arm being U-shaped in cross section and having an open ended slot at the forward end of the arm to thereby form a substantially vertically bifurcated arm portion, a striker pivotally mounted on and guided substantially along its full length within

the confines of said furcations of said arm, said striker extending forwardly to the front of said furcations of said arm and being pivoted at a height above the striking face of the striker, said striking face being such that the blow imparted by the striker is inclined to the axis of the rivet in a direction downwardly and inwardly of the device so that any squeezing action of the blow will not tend to force the brake shoe outwardly, and a cam device for pressing the arm toward the base member to thereby press the brake shoe and lining against the shoulder formed by the head of the rivet, said cam device including means adapted to adjust said pressure.

3. A riveting device for riveting a brake lining on a brake shoe; comprising a base member having an inner end, an arm having an inner end and being pivotally mounted with said inner end to said inner end of said base member, said arm being vertically bifurcated at the outer end to thereby form furcations, an anvil pin on the outer end of the base member for supporting the head of a rivet, a striker pivotally mounted on said arm and guided between said furcations and extending forwardly to the front thereof, a rod interconnecting said arm and said base member, adjusting means provided at one end of said rod and bearing against said base member, a cam device rotatably mounted on said rod and seated on and above said arm, to thereby permit the setting of said arm for applying pressure on the parts to be riveted together with the cam device in position for applying final pressure.

EVAN MEIRION ARTHUR.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
218,143	Sheuenberger	Aug. 5, 1879
389,661	Mandel	Sept. 18, 1888
463,746	Keogh	Nov. 24, 1891
486,190	Diver	Nov. 15, 1892
1,126,908	Stoeber	Feb. 2, 1915
1,215,932	Harris	Feb. 13, 1917
1,373,427	Houser	Apr. 5, 1921
1,672,271	McCallum	June 5, 1928
2,008,890	Weinstein	July 23, 1935
2,369,492	Repper	Feb. 14, 1945
2,430,383	Yager	Nov. 4, 1947