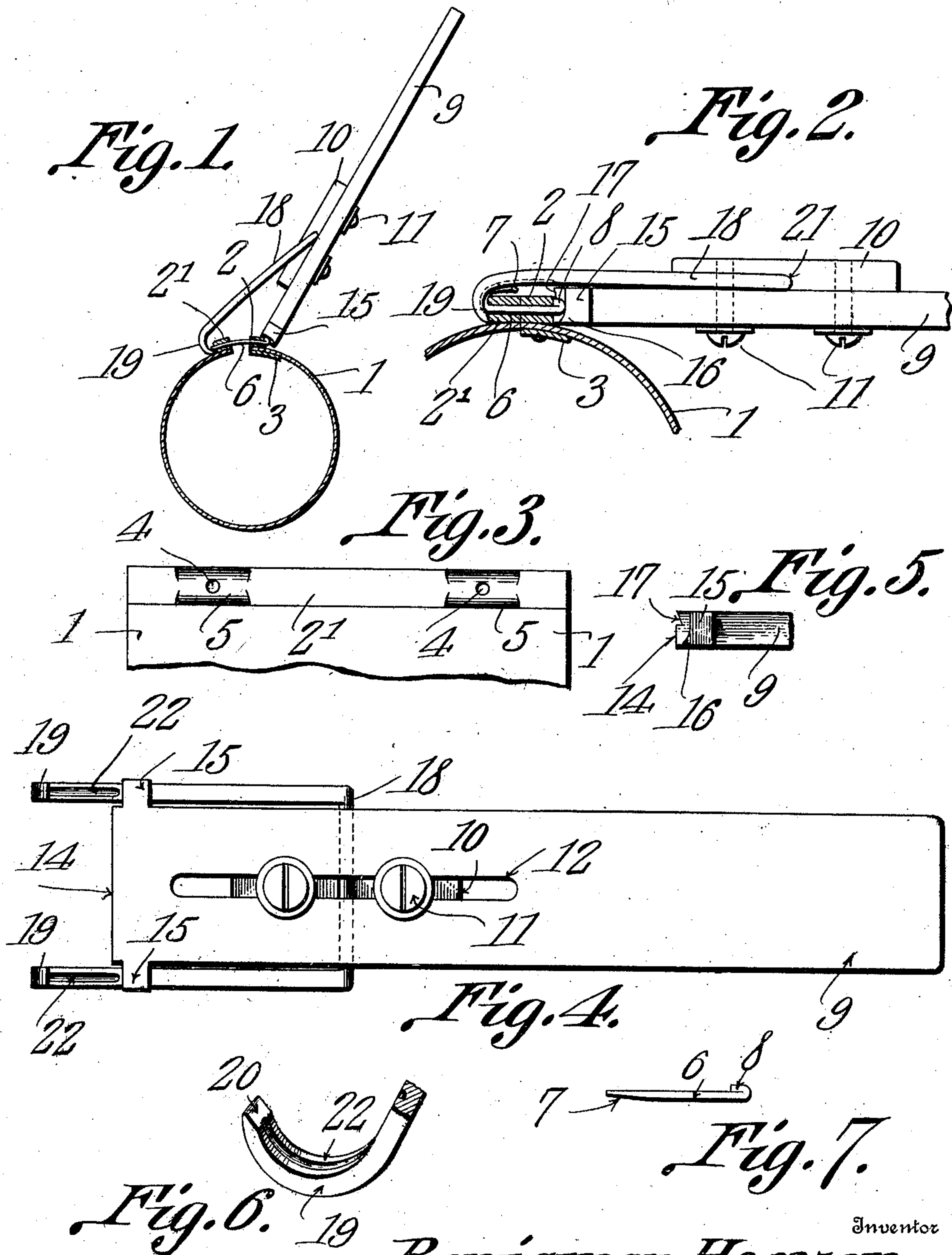


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HOSE PATCH AND APPLYING TOOL.
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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BENJAMAN HOOVER, a citizen of the United States, residing at Meridian, in the county of Lauderdale and State of Mississippi, have invented a new and useful Hose-Patch and Applying-Tool, of which the following is a specification.

One object of the invention is to provide a patch adapted to be applied to the brake pipes of air brake systems, to close punctures therein, novel means being provided for holding the meeting edges of the patch together, the patch being so constructed that it is well adapted to bear the strains imposed upon it, both by the adducting of the holding means, and by the internal pressure in the brake pipe.

Another object of the invention is to provide a tool of novel and improved construction, whereby a brake pipe patch may be tightened about the brake pipe, and secured thereto.

Another object of the invention is so to construct the tool that the same may, in a single operation, draw the meeting edges of the patch together, and secure them in place.

Another object of the invention is so to construct the tool that it may engage the brake pipe patch in a novel manner during the adjustment of the patch.

Another object of the invention is so to construct the tool that it will be effective, in operation, not only to draw the meeting edges of the patch together, but, as well, to bend the retaining elements in such a manner that they will retain together, the meeting edges of the patch.

With the above and other objects in view, the invention consists in the novel construction and arrangement of parts hereinafter described, delineated in the drawings, and specifically claimed, it being understood that changes, properly falling within the scope of what is claimed, may be made, without departing from the spirit of the invention.

Similar numerals of reference are employed to denote corresponding parts throughout the several figures of the drawings.

In the accompanying drawings,—Figure 1 is a transverse section of a patch constructed in accordance with my invention, the tool for the manipulation of the patch being shown in elevation, and applied to the

patch, the parts being in the positions which they will assume when the operation of drawing the meeting edges of the patch together, is about to be begun; Fig. 2 is a fragmental transverse section of the patch, the tool being shown in elevation, and applied to the patch, the parts being in the positions which they will assume, after the meeting edges of the patch have been drawn together and secured in the position to which they have been drawn; Fig. 3 is a fragmental side elevation of the patch, designed to show with particularity, one of the ribs which are secured to the meeting edges of the patch; Fig. 4 is a rear elevation of the tool, which, in Figs. 1 and 2, is shown applied to the patch for the manipulation thereof; Fig. 5 is a fragmental side elevation of one end of the tool, designed to show the manner in which the end of the tool is constructed to facilitate the operation of tightening and securing the patch; Fig. 6 is a fragmental perspective of a portion of a U shaped member which enters into the structure of the tool, the view being intended to show one of the hooks at the end of the U shaped member, and to illustrate clearly, the groove which is located in the interior of the hook; and Fig. 7 is a side elevation of one of the pins which are passed through the ribs of the patch, in order to hold the meeting ends of the patch together.

The device forming the subject matter of this application, is intended primarily, although not exclusively, to be applied to the brake pipes of air brake systems, to heal accidental punctures therein. With a view to effecting this result, a split patch is provided, consisting of a body 1, preferably fashioned from thin sheet metal, and adapted to be disposed in the tubular form shown in Fig. 1.

Upon the meeting edges of the body 1 and upon the outer surface thereof, are secured ribs 2 and 2', a reinforcing strip 3, being located, if desired, upon the lower face of the body 1, beneath the rib 2. As indicated most clearly in Fig. 2, and as denoted by the numeral 4 in Fig. 3, there are openings in the ribs 2 and 2', adapted to be alined, when, as shown in Fig. 2, the adjacent faces of the ribs are brought together. For a purpose to be described hereinafter, the outer face of the rib 2' is rounded and diminished in diameter as denoted by the numeral 5,

to define seats adjacent the openings 4. Into the openings 4, pins 6 are adapted to be introduced, one of the pins being shown in outline in Fig. 7. The pins, at one end, may be tapered slightly as shown at 7, and, at the other end, bent sharply upon themselves, or otherwise manipulated, to form heads 8. When a puncture is discovered in the brake pipe, the patch is placed over said puncture, a suitable cement, if desired, being first coated upon the interior of the body 1 of the patch, or applied directly to the brake pipe. When the meeting ends of the body 1 are drawn together, the pins 6 are mounted in the openings 4, the heads 8 engaging the rib 2, and the tapered ends 7 of the pins being bent to extend above the rib 2', as shown most clearly in Fig. 2. The meeting ends of the body 1 will thus be secured together, any leakage from the puncture in the brake pipe being thereby prevented.

A hose patch constructed as above described, may be manipulated in any desired manner and without calling any especially constructed tool into use. However, the operation will be facilitated greatly when the tool of the character hereinafter set forth, is employed.

The preferred tool for the manipulation of the patch comprises a handle 9, upon one face of which is adjustably mounted a block 10, of substantially the same width as the handle. This block 10 is adjustably held in place by means of screws 11, adapted to reciprocate in a longitudinally disposed slot 12 in the handle 9. In the lower face of the block 10 there is a transverse groove 21, adapted to receive for pivotal movement, the intermediate portion of a U shaped member 18, the arms of which extend along the lateral edges of the handle 9, to project across shoulders 15 which outstand from the handle 9 adjacent the end 14 thereof, the arms of the U shaped member 18 terminating in hooks 19. The ends of the hooks 19 are beveled as denoted by the numeral 20, while upon the under faces of the hooks are longitudinally extended grooves 22. By referring to Fig. 5, it will be seen that the end 14 of the handle which outstands beyond the extensions 15 is notched as shown at 17, the lower edges of the shoulders 15 being outwardly extended to form lips 16.

In using the tool to apply the hose patch, the beveled ends 20 of the hooks 19 are made to engage beneath the rounded portions 5 of the rib 2' the notch 17 in the end 14 of the handle 9 being fitted upon the edge of the rib 2. The seats formed by the rounded portions 5 of the rib 2', are adapted to receive the hooks 19, to prevent the tool from sliding longitudinally of the patch; thus, the hooks are maintained in such positions that the ends of the pins 6 will be forced against

the hooks. The shoulders 15 are then made to bear against the heads 8 of the pins 6, the lips 16 extending beneath the heads, the heads bearing against the rib 2, and the tapered ends 7 of the pins being inserted into the openings 4 in the rib 2', all as shown to best advantage in Fig. 1. When the handle 9 is brought downwardly into the position shown in Fig. 2, the ribs 2 and 2' will be drawn closely together, thus clamping the body 1 closely about the puncture in the brake pipe. When the handle 9 is thus moved from the position shown in Fig. 1 to that shown in Fig. 2, the ends of the pins 6 will be advanced through the openings 4 in the ribs 2', said ends 7 of the pins flexing, as shown in Fig. 2, and following the grooves 22 in the hooks 19. The tool is fulcrumed upon the end 14, the shoulders 15 serving to hold the pins 6 in place, and the hooks 19 serving at once, as a means for drawing the ribs 2 and 2' together, and as a means for bending the ends 7 of the pins 6, to hold the hose patch in position about the pipe. Thus, in a single operation, the ends of the patch may be drawn together and secured in the position to which they have been drawn. Obviously, the screws 11 and slots 12 furnish a means whereby the positions of the hooks 19 may be adjusted with respect to the end 14 of the handle 9, to accommodate ribs 2 and 2', of different thicknesses.

Having thus described the invention, what is claimed is:—

1. A split, tubular hose patch provided upon its meeting edges with outstanding ribs, one of which ribs is provided with a diminished, transversely rounded portion, defining a seat adapted to receive the hook of an applying tool, to prevent the tool from sliding longitudinally of the patch; there being an opening in said rib, located in the seat, and an alined opening in the other rib.

2. A split, tubular hose patch provided upon its meeting edges with outstanding ribs, one of which is provided with a diminished, transversely rounded portion, defining a seat adapted to receive the hook of an applying tool, to prevent the tool from sliding longitudinally of the patch; there being an opening in said rib, located in the seat, and an alined opening in the other rib; and a flexible, headed pin insertible through the openings, the pin being tapered to facilitate the bending thereof.

3. A split, tubular hose patch provided upon its meeting edges with outstanding ribs, one of which is provided with a diminished, transversely rounded portion, defining a seat adapted to receive the hook of an applying tool, to prevent the tool from sliding longitudinally of the patch; there being an opening in said rib, located in the seat, and an alined opening in the other rib;

a flexible, headed pin inserted through the openings, the pin being tapered to facilitate the bending thereof, the last named rib presenting an angular edge constituting a fulcrum for the applying tool; and a reinforcing strip secured to the patch beneath the last named rib.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

BENJAMAN HOOVER.

Witnesses:

GEO. F. HAND,
E. DIAL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
