

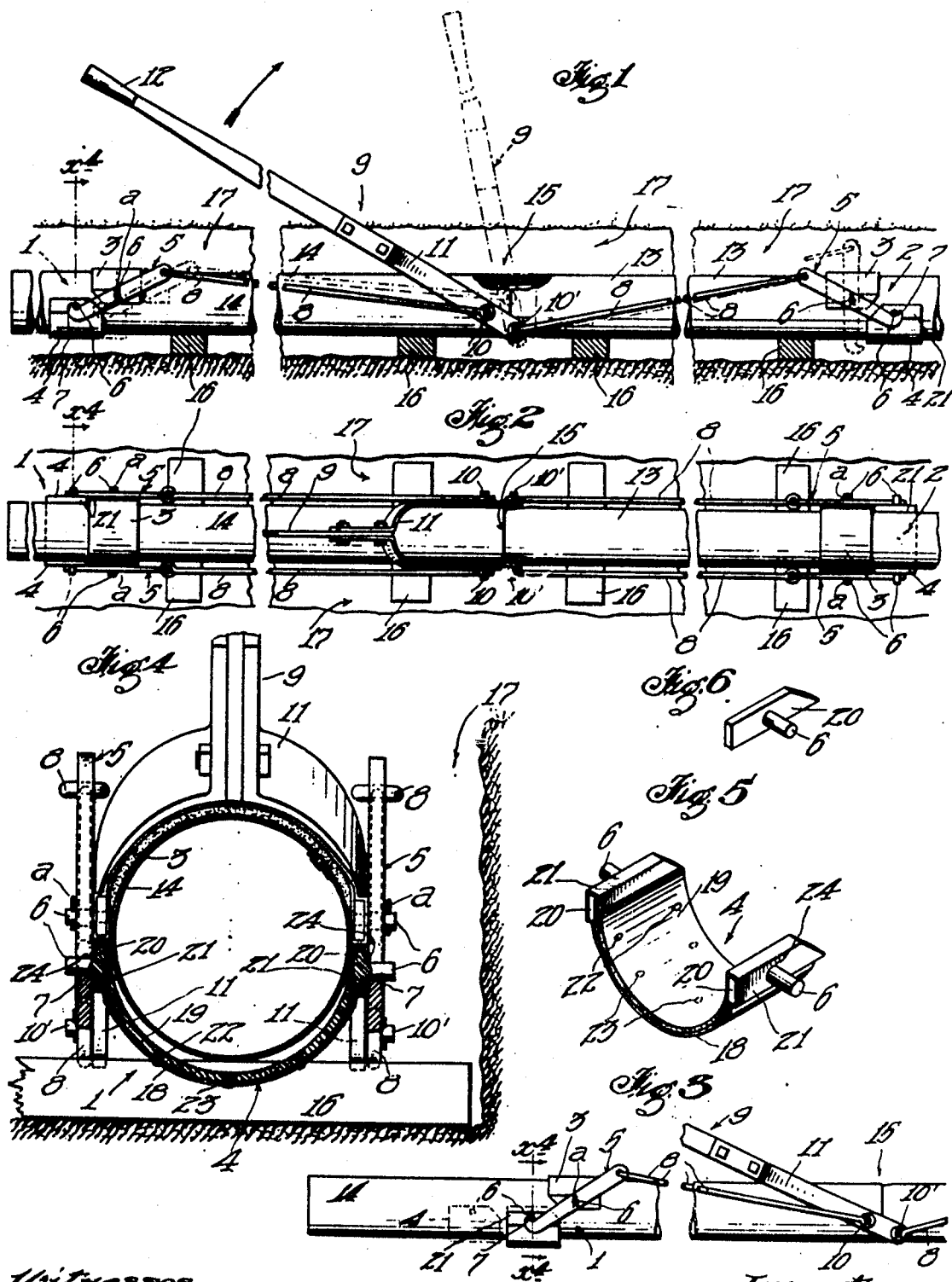
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PATENTED NOV. 12, 1907.

A. CLAIBORNE.

DEVICE FOR PULLING PIPE SECTIONS TOGETHER.

APPLICATION FILED AUG. 27, 1906.



Witnesses
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UNITED STATES PATENT OFFICE.

ALEXANDER CLAIBORNE, OF DOLGEVILLE, CALIFORNIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO TALLERDAY MANUFACTURING COMPANY, OF DOLGEVILLE, CALIFORNIA, A CORPORATION OF CALIFORNIA.

DEVICE FOR PULLING PIPE-SECTIONS TOGETHER.

No. 870,931.

Specification of Letters Patent.

Patented Nov. 12, 1907.

Application filed August 27, 1906. Serial No. 332,292.

To all whom it may concern:

Be it known that I, ALEXANDER CLAIBORNE, a citizen of the United States, residing at Dolgeville, in the county of Los Angeles and State of California, have invented a new and useful Device for Pulling Pipe-Sections Together, of which the following is a specification.

Objects of this invention are: to facilitate the laying of sheet metal pipe; to enable workmen to rapidly and readily force together the slip joints of sheet metal pipe without any liability of denting, crushing, bending or otherwise injuring said pipe or the coating thereof, and to provide means for readily applying great power to force said sections of pipe together.

The invention includes a novel clamp, novel mechanism, and novel parts and combinations more particularly set forth in the subjoined description.

The device is adapted for pulling together elbows as well as straight sections of pipe, and is designed to forcibly unite the pipe sections or other parts to be put together, and may also be used to pull apart pipe sections or other parts held together by friction.

The accompanying drawings illustrate the invention:

Figure 1 is a broken side elevation of the invention in practical use as it appears just after it has been applied to forcibly connect a section of pipe with a pipe section already connected to a pipe line, said pipe line being shown in a ditch. Dotted lines indicate the position of parts after forcing the pipe sections together. At the right a position of the lever means at one end when the clamp is loosened is shown in dotted lines. Fig. 2 is a plan view of the invention as shown in solid lines in Fig. 1. Fig. 3 is a detail showing the clamp loosened for the purpose of adjusting the same on the pipe section to be set. Fig. 4 is a section on line indicated at x^4 , Figs. 1, 2 and 3, looking to the right, showing the lower shoe of the clamp released from the pipe. Fig. 5 is a perspective detail of one of the shoes detached. Fig. 6 is a perspective view of one of the pivot bars detached.

In a general way 1 and 2 designate clamps each provided with shoes 3, 4, pivotally connected by lever means 5.

6 designates trunnion pivots on the shoes 3, 4; and 7, hooks on the lever means 5 to detachably engage the trunnions on one of the shoes, said lever means being in the form of an independent arm on each side of the clamp fastened by pins a to the trunnion pivots of the upper shoe, so that the lever means 5 are, as it were, permanently connected with the upper shoe, while the lower shoe may be detached by unhooking its trunnion pivots from the hooks 7.

Suitable lever operating means in the form of connecting rods 8 are provided for the lever means of each

of the clamps; the same comprising four connecting rods, two on each side of the apparatus, as clearly seen in Fig. 2 of the drawing.

9 designates a lever pivoted by pivots 10, 10', to the connecting rods 8, said pivots being spaced apart near the lower end of said lever so that the connecting rods 8 are fulcrumed against each other on said lever 9; that is to say, when the lever 9 is moved in the direction of the large arrow in Fig. 1, each of the connecting rods acts as a fulcrum for the other, and the ends of the lever means 5 connected to the connecting rods 8 will be subjected to a strain tending to draw the lever means of one clamp toward the lever means of the other.

The lever 9 is provided with a yoke 11, each side of which is provided with a pivot 10 and a pivot 10'. The pivots 10 are arranged coaxially of each other, and the pivots 10' are also arranged coaxially of each other; the connecting rods of one clamp are pivoted to the coaxial pivots 10, and the connecting rods of the other clamp are pivoted to the other coaxial pivots 10'.

12 is the handle of the lever. 13 is a pipe section, and 14 another pipe section, to be united at the joint 15.

I will describe the use of the device in the process of laying asphalt-coated pipe sections having large and small ends, the one fitted within the other at the joints.

The pipe sections to be united will be laid on blocks 16 in the trench 17 or other place where the pipe is to be laid, the ends of the pipe being say two inches apart, in order to allow the workman to pour kerosene, distillate, gasoline, or other inflammable liquid into the large end of one section. Such liquid will afterward, be ignited in the pipe to heat the same and the coating.

The pipe-laying device will first be put in position with its clamps arranged substantially as indicated in Figs. 1 and 2, and then the inflammable liquid will be poured into the larger end of one section and ignited. After the same has burned sufficiently to soften the coating and properly heat the large end of one section; then said end and the end to which it is to be connected are fitted together and a quantity of inflammable liquid will be poured on the outside of the pipe and lighted, and when the coating is softened sufficiently the lever 9 will be operated to tighten the connections 8, whereupon the lever means will operate to force the shoes 3 and 4 of the two clamps in opposite directions toward a common axis, thus causing the clamps to tightly grip the pipe sections and at the same time shortening the distance between said clamps as the one on the loose section together with said section is drawn toward the other clamp. It will be seen that by this means there is no tendency to displace a section of pipe that has once been fixed, and that the loose section will be forced toward the other section which may

already be attached to the pipe line. The leverage at all times is very great to draw the shoes firmly on to the pipe sections, and the leverage for drawing the pipe sections toward each other increases as the lever 9 is moved for that purpose.

- The shoes 3, 4, may be formed of a strip of sheet metal 18 in semicylindrical form surfaced on the inside with a leather or other facing or lining 19 which serves the double purpose of avoiding damage to the pipe or its coating, and also to avoid sticking to the asphalt coating of the pipe. Said semicylindrical shoe may be sufficiently flexible to readily fit the outside of the pipe, thus to afford a firm grip without any danger of denting or otherwise injuring the pipe.
- The shoes may be reinforced at their free ends by bars 20 to which the trunnion pivots 6 are fixed, the ends of the sheet metal straps 18 being perforated and bent around the same to form loops 21, the pivots 6 projecting through perforations in said loops.
- The leather lining 19 and the strap of each shoe are preferably fastened together by rivets 22, 23, leaving the ends of the loops free so that the bars 20 are detachable by simply springing the loops open sufficiently to withdraw the pivots 6 from the perforations.
- By this construction one of said pivot bars may serve for the shoes for different sized pipes, it being understood that the lever means, connecting rods, the operating lever, and the pivot bars may be connected by sets of shoes of various sizes to fit various kinds of pipe, so that all that is necessary for the pipe-layer in handling different sizes of pipe with the same apparatus, will be that said apparatus will be provided with shoes of various sizes to fit the required diameter of the pipe.
- By bending the ends of the loops inwardly, as shown, the same are tightly clamped against the pipe inside the shoe, thus preventing any slipping of the metal strap on the pivot bars.

What I claim is:—

1. Two pairs of reversely-arranged shoes, lever means pivotally connecting the shoes of one pair, lever means pivotally connecting the shoes of the other pair, operating means for one of said lever means, operating means for the other of said lever means, and a lever pivotally connected with both of said operating means, the pivots of

said lever being spaced apart to fulcrum said operating means one against the other.

2. A pair of reversely arranged shoes, lever means pivotally mounted on one of said shoes and detachably pivoted to the other of said shoes, means for operating said lever means, another pair of shoes, lever means pivotally mounted on one of the shoes of said other pair and detachably pivoted to the other shoe of said other pair means for operating said other lever means, and a lever pivotally connected with both of said operating means the pivots of said operating means being spaced apart on said lever to fulcrum the one against the other.

3. A pipe clamp comprising a pair of shoes, each provided with pivots on its opposite sides, and lever means engaging said pivots and connecting said shoes to draw the same in opposite directions toward a common axis.

4. A pair of semicylindrical shoes, and lever means pivotally connecting said shoes to draw them in opposite directions toward a common axis.

5. A pair of semicylindrical hollow shoes, each provided with pivots on its opposite sides, and lever means connecting the pivots of the two shoes to draw said shoes together toward a common axis.

6. A pair of semicylindrical shoes each provided with pivots on its opposite sides, lever means pivoted on the pivots of one of said shoes and provided with a hook to detachably engage the pivots of the other shoe for the purpose of drawing the shoes toward a common axis.

7. A pair of semicylindrical hollow shoes, each provided with pivots on its opposite sides, lever means connecting the pivots of the two shoes to draw said shoes together toward a common axis, a lever, and connecting rods pivotally connecting the lever with said lever means.

8. A shoe for a pipe clamp comprising a flexible sheet metal strap and a leather lining therefor.

9. A pipe clamp shoe comprising a metal strap looped at its ends, bars in said loops and provided with pivots projecting through said loops, and lever means connecting said pivots.

10. A pipe clamp shoe comprising a perforated metal strap bent to form loops, bars in said loops, each provided with a pivot projecting through a perforation in its loop.

11. A pipe clamp shoe, comprising a curved strap bent at its ends from the outside inward to form loops, and bars in said loops provided with pivots extending outward through the strap.

In testimony whereof, I have hereunto set my hand at Los Angeles California this 18th day of August 1906.

ALX. CLAIBORNE.

In presence of—

JAMES B. TOWNSEND,
JULIA TOWNSEND.