

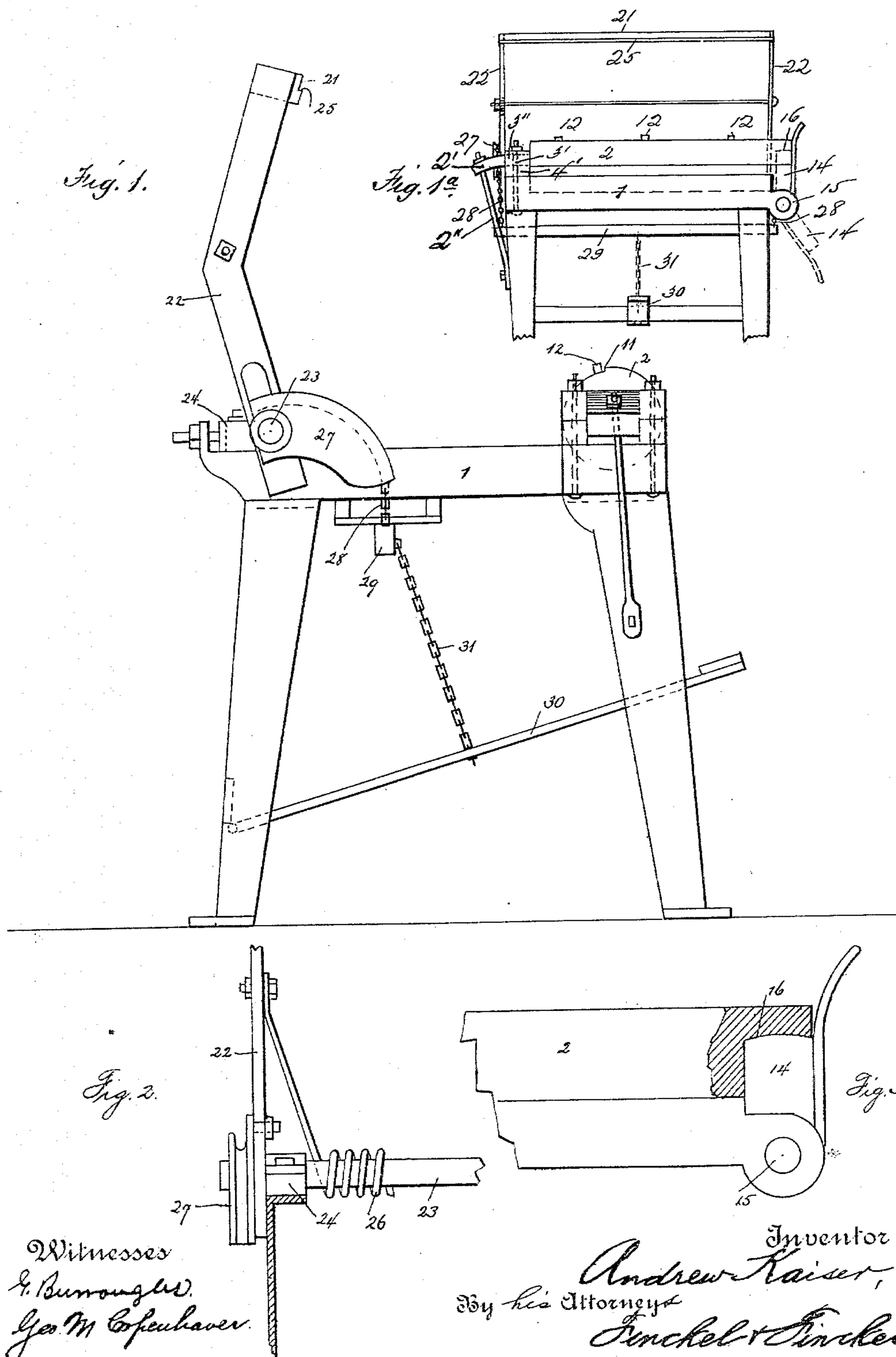
(No Model.)

2 Sheets—Sheet 1.

A. KAISER.
STOVEPIPE JOINTING MACHINE.

No. 559,714.

Patented May 5, 1896.



2 Sheets—Sheet 2.

No. 559,714.

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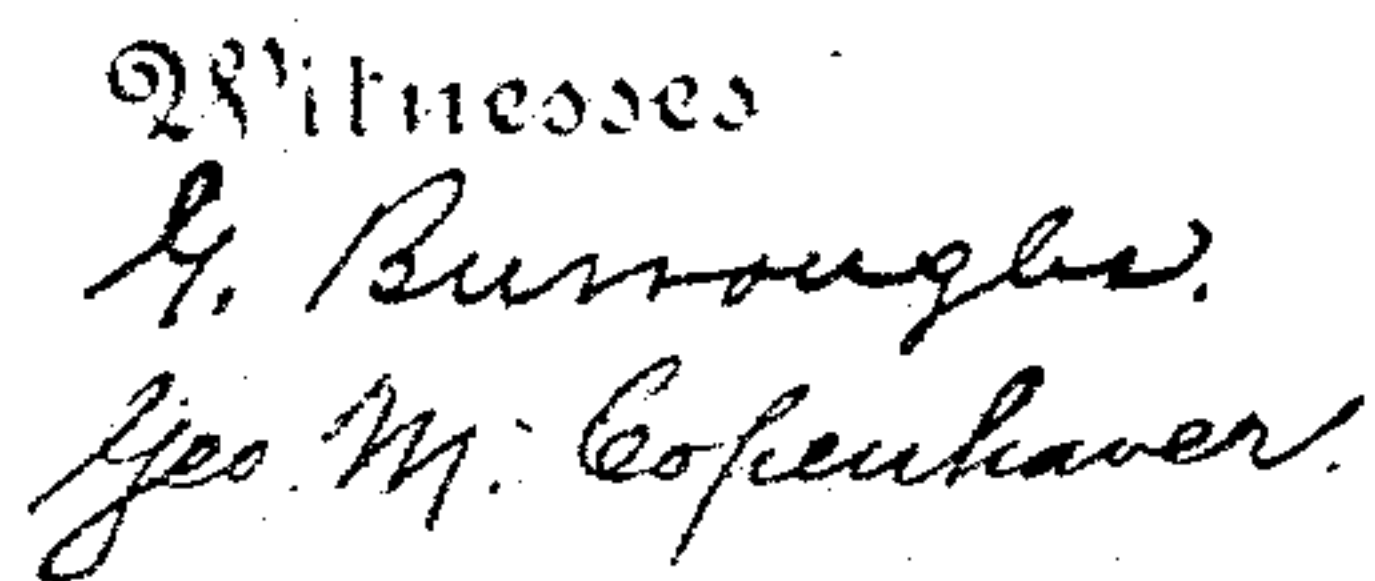


Fig. 8.

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UNITED STATES PATENT OFFICE.

ANDREW KAISER, OF COLUMBUS, OHIO.

STOVEPIPE-JOINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 559,714, dated May 5, 1896.

Application filed November 11, 1895. Serial No. 568,546. (No model.)

To all whom it may concern:

Be it known that I, ANDREW KAISER, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Stovepipe-Jointing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to provide an improved machine for uniting the edges of the piece from which the stovepipe is made—that is, forming the seam by a single blow—and for producing sections of uniform diameter.

My invention relates to that kind of machine for jointing stovepipe in which there is a frame supporting a mandrel upon which the blank from which the section of stovepipe is to be made is adjusted and secured and a hammer arranged to drive against the interlocked edges of the section to form and unite the same.

In the accompanying drawings, Figure 1 illustrates an embodiment of my invention in side elevation. Fig. 1^a is a view of the front of the machine. Fig. 2 is a fragmentary detail illustrating one arm of the hammer-frame and the spring for retracting and holding it from the mandrel. Fig. 3 is a detail illustrating a removable brace or support for the free end of the mandrel. Fig. 4 is a longitudinal sectional view of an expanding mandrel. Fig. 5 is a plan detail view illustrating the lever for throwing the wedges that operate the movable part of the expanding mandrel. Fig. 6 is a sectional view of the mandrel, taken on the line *xx* of Fig. 4. Fig. 7 is a sectional view of a modified form of expanding mandrel. Fig. 8 is a detail illustrating the formed seam.

Where like characters of reference occur in the different views they indicate corresponding parts.

1 designates the frame, which is rectangular in plan view and is supported upon suitable legs.

The mandrel is composed of the fixed part 2 and movable part 3. The fixed part 2 is bolted at one end to the front left-hand corner of the frame 1 and the movable part 3 elas-

tically secured to the under side of the fixed part 2. The fixed end of part 2 is secured by means of a brace-rod 2', fastened to the frame or leg and passing through a projection 2', formed on the part 2, and bolts 3', passing through ears or lugs 3" and 4' on the part 2 and frame, respectively. The means for securing the movable part of the mandrel to the fixed part, as shown in Fig. 6, consist of threaded bolts 4, passing upwardly through sockets 5 and into the fixed part 2, a coiled spring 6 being interposed between the heads of the bolts and shoulders in the movable part 3. The movable part of the mandrel, as shown in Figs. 4 and 6, is formed with inclined portions 7, against which work wedges 8, operated by a hand-lever 9 and connecting-rod 10, pivoted to the fixed part 2 of the mandrel. The hand-lever has bolted to it an adjustable piece 9', which abuts against one of the bosses on the fixed part 2 to limit the inward throw of the wedge and consequently the expansion of the mandrel.

The upper edge of the mandrel is made with a longitudinally-extending shoulder 11, and near this are placed in line a number of pins 12, which are held by springs 12', so as to project slightly beyond the surface of the mandrel. These pins serve as guides in placing the pipe-blank upon the mandrel.

The right-hand end of the mandrel is free, so that the pipe-blank with the interlocked bent edges may be placed thereon, and to support said end under the blow of the hammer I provide block 14, pivoted in ears or bearings 15 at the side of frame 1 and provided with a suitable handle, which may be turned up into a socket 16 in the end of the fixed part of the mandrel.

Where greater strength and rigidity are desired in the mandrel, such a construction as is shown in Fig. 7 may be adopted. In this form the movable wedge-bar 20 acts against inclined or cam surfaces 17 in the fixed part, and the movable part of the mandrel consists of a thin laterally-curved sheet 18, attached by bent springs 19 to either end of the mandrel.

The hammer consists of a yoke-shaped structure having a head or bar 21 and side arms 22. These side arms are supported on the ends of a shaft or axle 23, supported along

the rear part of the frame 1 in adjustable pillow-blocks 24, by means of which the hammer may be positioned so that the shoulder 25 on the head shall strike the seam at the proper place. A spring 26 encircles the shaft 23 and is secured at one end to a fixed part of the machine and at the other to the arm 22, so as normally to hold the hammer-frame in upright position. Fixed to the lower end of each of the arms 22 of the hammer-frame is a grooved sector 27, to which is secured a chain 28. These chains 28 are attached to a bar 29, extending across the under side of the frame 1, and this bar 29 connected with a foot-lever 30 by means of a chain 31.

The operation is as follows: A blank to be seamed or jointed is first cut to proper size and its opposite edges bent or folded in opposite directions, so as to hook into each other. It is also preferably put through rollers to give it cylindrical form. When the bent edges are hooked into each other, it is placed onto the mandrel in the position shown in Fig. 8, the contact of the under bent edge against the pins indicating that it is in proper position. The mandrel is then expanded by throwing the wedges inward until the pipe is tightly in place. When this has been done, the block 14 is turned up into its socket and the blow of the hammer given by applying the foot to the lever 30. The blow of the hammer gives the seam the form shown in cross-section, Fig. 8.

What I claim as new, and desire to secure by Letters Patent, is—

1. A machine for jointing or seaming pipe,

comprising a frame, a hammer, a mandrel fixed immovably at one end and free at its other end with the recess 16 in this end, and a block 14 pivoted to the frame so as to removably engage the recess to support the free end of the mandrel against the blow of the hammer, substantially as shown and described.

2. A mandrel for forming pipe joints or seams, comprising the fixed part 2 and movable part 3, a rod having wedges to separate the same, a hand-lever 9 connected with the rod, and the slotted piece 9' adjustably secured to the lever for limiting and varying the movement of said rod, substantially as shown and described.

3. A machine for jointing or seaming pipe, comprising a frame, a hammer, a mandrel composed of the part 2 immovably fixed at one end and free at its other with the recess 16 in this end, and the movable part 3, a rod having wedges to separate the parts, a hand-lever 9 connected with the rod, the slotted piece 9' adjustably secured to the lever for limiting and varying the movement of the rod, and the block 14 pivoted to the frame so as to removably engage the recess to support the free end of the part 2 against the blow of the hammer, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW KAISER.

Witnesses:

GEO. M. FINCKEL,

CHAS. E. BEDWELL.