

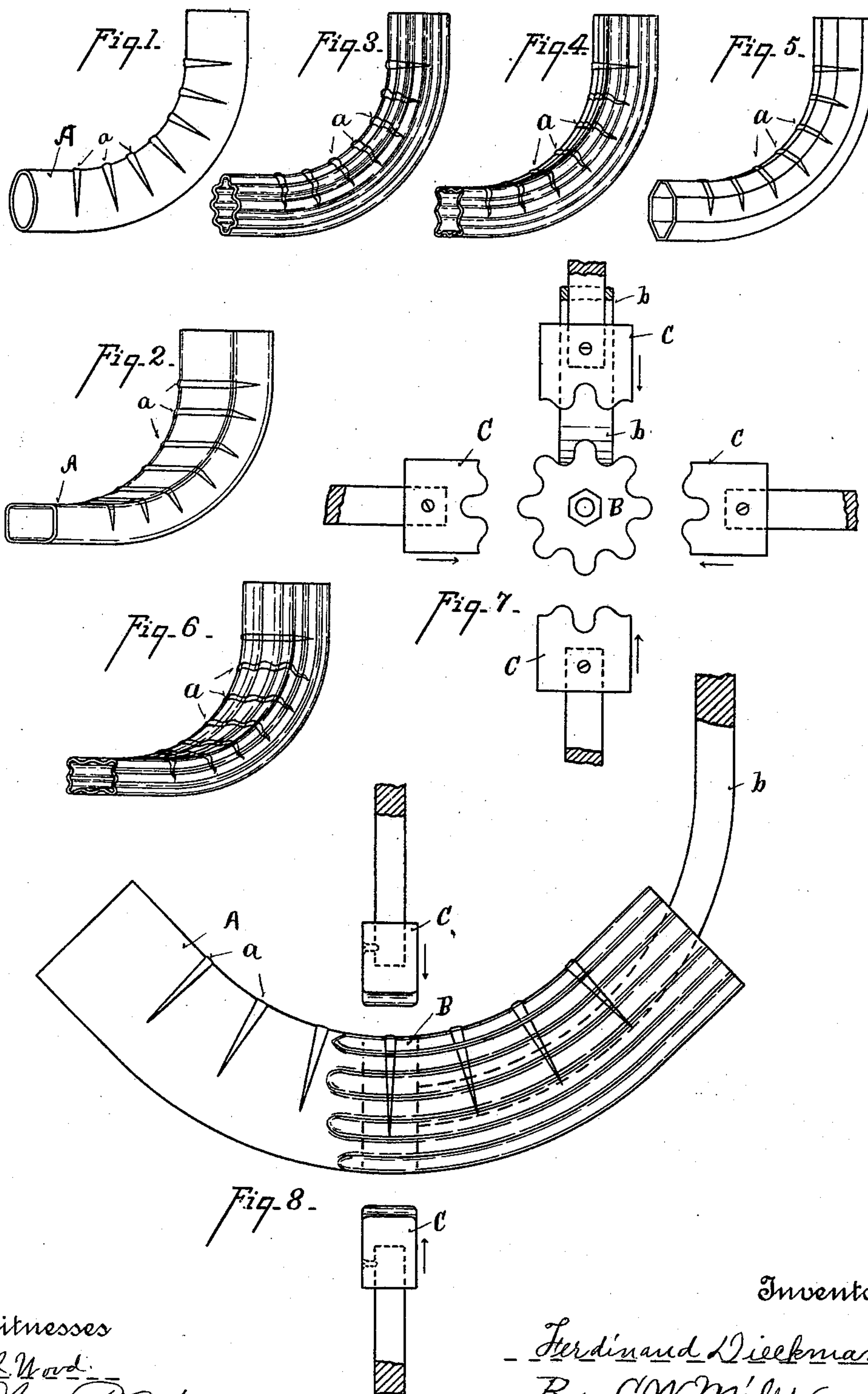
(No Model.)

F. DIECKMANN.

SHEET METAL ELBOW AND PROCESS OF MAKING SAME.

No. 540,584.

Patented June 4, 1895.



Witnesses
W. R. Wood.
Oliver B. Kaiser.

Inventor

Ferdinand Dieckmann.
By C. W. Miles
Attorney.

UNITED STATES PATENT OFFICE.

FERDINAND DIECKMANN, OF CINCINNATI, OHIO.

SHEET-METAL ELBOW AND PROCESS OF MAKING SAME.

SPECIFICATION forming part of Letters Patent No. 540,584, dated June 4, 1895.

Application filed December 22, 1894. Serial No. 532,714. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND DIECKMANN, residing at Cincinnati, county of Hamilton, and State of Ohio, have invented certain new and useful Improvements in Sheet-Metal Elbows and Process of Making the Same, of which the following is a specification.

My invention relates to a process of making corrugated, octagonal and similar shaped sheet metal elbows. Its object is to make smooth, regular sheet metal elbows of corrugated, octagonal, and similar cross-sectional patterns.

The features of my invention will be more fully set forth in the description of the accompanying drawings, making a part of this specification, in which—

Figures 1 and 2 represent plain crimped elbows from which the various styles above mentioned are produced. Figs. 3, 4, 5, and 6 represent various styles of elbows formed from elbows similar to Figs. 1 and 2. Fig. 7 is a plan view of a set of dies for forming the elbow shown in Fig. 3. Fig. 8 is a side elevation of the dies shown in Fig. 7, showing an elbow in the process of being corrugated.

It has been the practice hitherto in making elbows of styles similar to those represented in Figs. 3, 4, 5, and 6, to either shape only the ends, so that they may register with the straight sections of pipe, leaving the curved portion plain, or to build up the elbow from two or more pieces which are first shaped into the desired form and then secured together.

By my process a plain elbow A is first formed, preferably by rolling a single piece of sheet metal into a tube, then taking up the surplus metal upon one side into overlapping crimps *a*, by any well known process employed in this art; or the plain elbow may be formed by joining together two or more pieces of sheet metal properly shaped to form a plain elbow when so joined together, which process is also well known in this art. This elbow is then given the desired form preferably in the following manner: B represents a central anvil die mounted upon a curved arm *b*. C represents hammer dies reciprocated in unison to strike the die B. The end of the elbow A is placed over the die B, and the dies C reciprocated to strike the elbow and give it the cross-sectional configuration of the die B. By a forward step movement of the

elbow upon the die this configuration is successively impressed upon every portion of the elbow, the result being a smooth, true elbow, with regular faces or corrugations running throughout the length of the elbow.

I believe myself to be the first to make a corrugated, octagonal or similar style of elbow of a single piece of sheet metal crimped upon one side to form the curve.

I believe myself to be the first to take a plain elbow and subsequently stamp it to any desired corrugated, octagonal or similar cross-sectional pattern.

Having described my invention, what I claim is—

1. The process of forming sheet metal elbows of any desired cross-sectional pattern, which consists in taking a previously formed plain elbow, and by means of suitable dies impressing the desired corrugated, octagonal or similar cross-sectional pattern upon the curved portion of the elbow, substantially as specified.

2. The process of making sheet metal elbows of any desired cross-sectional pattern from a single piece of sheet metal, which consists in first forming a plain elbow from a single sheet of metal by forming the sheet into a tube, taking up the surplus metal in over-lapping crimps upon one side to form the curve of the elbow, and then by means of suitable dies impressing the desired corrugated, octagonal, or similar cross-sectional pattern upon the curved portion of the elbow, substantially as specified.

3. A sheet metal elbow having the surplus metal upon one side taken up in crimps to form the curve, and having a corrugated, octagonal, or any desired similar cross sectional pattern impressed upon the elbow throughout its length substantially as specified.

4. A crimped sheet metal elbow, formed of a single piece of sheet metal, having a corrugated, octagonal or any desired similar cross-sectional pattern impressed thereon throughout its length, substantially as specified.

In testimony whereof I have hereunto set my hand.

FERDINAND DIECKMANN.

Witnesses:

C. W. MILES,
OLIVER B. KAISER.