

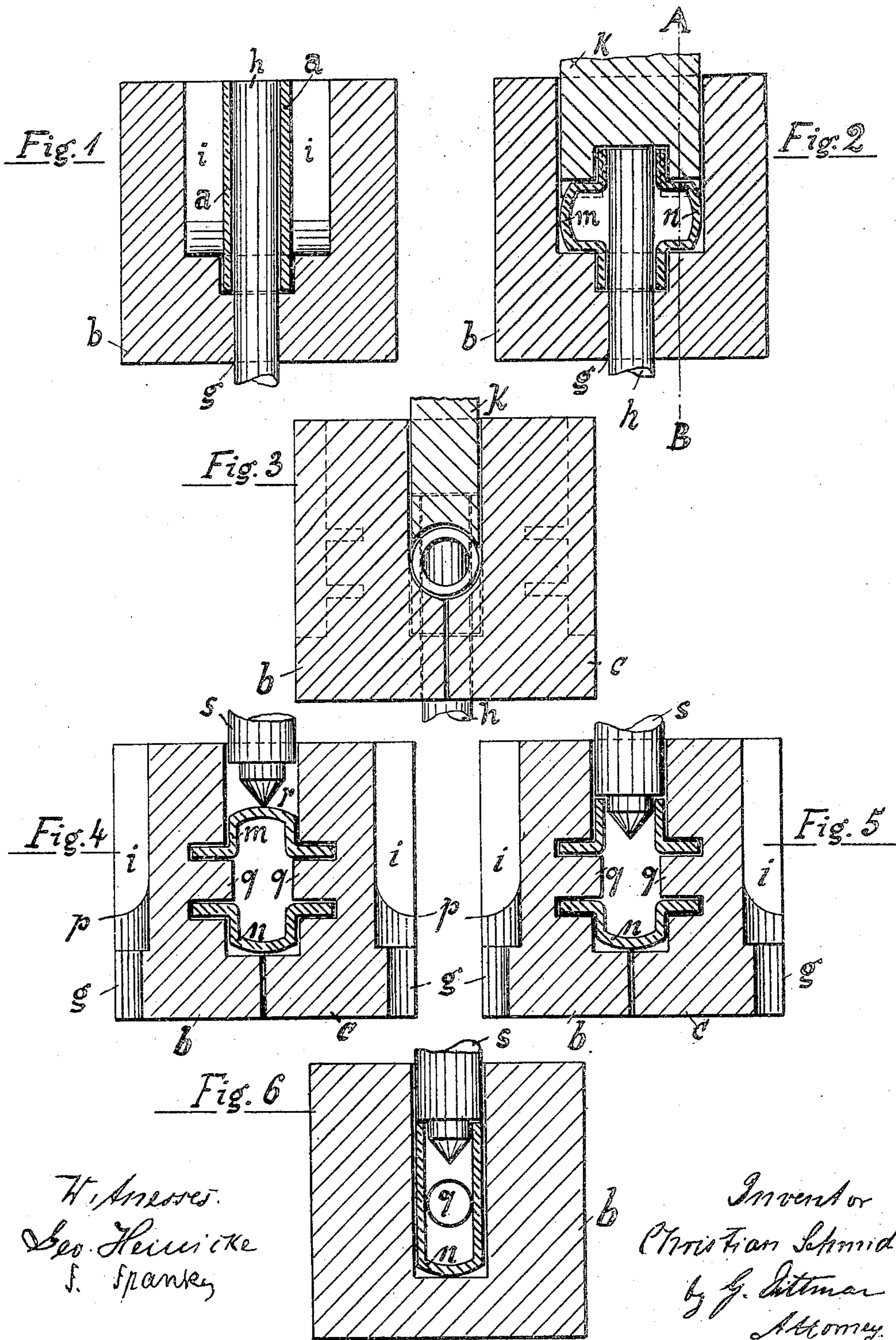
No. 817,876.

PATENTED APR. 17, 1906.

C. SCHMID.

TOOL FOR PRESSING AND PIERCING SEAMLESS PIPE JOINTS.

APPLICATION FILED MAR. 1, 1905.



UNITED STATES PATENT OFFICE.

CHRISTIAN SCHMID, OF ERKELENZ, GERMANY.

TOOL FOR PRESSING AND PIERCING SEAMLESS PIPE-JOINTS.

No. 817,876.

Specification of Letters Patent.

Patented April 17, 1906.

Application filed March 1, 1905. Serial No. 247,976.

To all whom it may concern:

Be it known that I, CHRISTIAN SCHMID, a subject of the German Emperor, residing at Erkelenz, Rhenish Prussia, Germany, have
5 invented new and useful Improvements in Tools for Pressing and Piercing Seamless Pipe-Joints, of which the following is a specification.

The object of the present invention is a
10 tool for the manufacture of seamless pipe-joints.

Figure 1 of the accompanying drawings represents in transverse section the device with a straight piece of piping to be pressed.

15 Fig. 2 is a transverse section with the pipe bulged. Fig. 3 is a section on line A B, Fig. 2. Fig. 4 shows the tool in section in a position with pipe inserted for piercing. Fig. 5 is the same view showing the piping pierced
20 by means of a punch. Fig. 6 is a sectional side elevation of the same.

The tool consists of a pair of steel jaws or dies *b c*, having a front face and a rear face suitably shaped, so as to form a kind of a
25 mold when the dies are clamped with their front faces together for shaping the joint and so as to receive and hold the joint for piercing the same when the dies are clamped with their rear faces together.

30 The shape of the front faces is illustrated in Figs. 1 and 4 in front and side elevation. At the lower edge a semicircular depression is worked into the surface, so that both dies when placed together leave a cylindrical
35 opening *g* for the passage of a steel rod or mandrel *h*. This opening *g* is widened out by a cylindrical offset *g'*, so that a piece of pipe *a*, cut in suitable length, may be inserted, as shown in Fig. 1. In the upper part of the
40 die the metal is cut out rectangularly, as at *i*, and the lower part is rounded, as at *p*, toward the upper edge of the cylindrical offset *g'*. A plunger *k* of rectangular cross-section, fitting into and filling out the depression *i*,
45 has its lower surface rounded similar to *p*, so that this surface, together with the surfaces *p*, leaves a cylindrical space, as best shown in Fig. 3. The middle part of the lower surface of this plunger has a cylindrical bore of equal
50 diameter of the pipe *a* to be bulged or transformed into a cross-joint.

It is evident when the two dies are clamped together and the mandrel *h* and the length of pipe *a* (preferably bright-red hot) are inserted and the plunger *k* is pressed down that the
55 pipe will assume the shape shown in Fig. 2, and two cylindrical closed projections *m* and *n* will result. The pipe-joint therefor consists of two opposite open ends and of two opposite closed ends rectangular to the
60 former. It is now necessary to pierce the latter, and for this operation the rear faces of the dies are brought in contact. Each rear face has essentially a semicylindrical depression *r* of the same diameter as the offset *g'*,
65 and a deep annular groove is further sunk in the metal at the deepest part of the depression *r*, as best shown in Fig. 4. *q* is a cylindrical block left standing in the metal when the annular groove is cut, and its diameter is
70 equal to the diameter of the mandrel *h*, while the greater diameter of the annular groove is equal to the offset *g'*. The pipe-joint obtained as described with respect to Fig. 2 is
75 now placed with the open ends on the blocks *q q*, the dies are clamped together, and then a punch *s* with a point *r* is introduced to pierce first one closed end and then the other after changing the position, whereupon the joint is
80 ready to be threaded and to be used.

Having thus described my invention, what I claim is—

A tool for pressing and piercing pipe-joints having coöperating front faces containing a semicylindrical depression *g* with a wider
85 semicylindrical depression *g'* above it and a rectangular depression *i* with the foot end rounded as at *p* adapted to coöperate with a suitable plunger *k* with concaved and centered
90 bored lower surface as described, and having rear faces with semicylindrical depressions *r* and deep annular grooves near the bottom thereof leaving cylindrical blocks *q*, substantially as described.

In testimony whereof I affix my signature. 95

CHRISTIAN SCHMID.

In presence of—

WILLIAM ESSENWEIN,
OSKAR KÜNZELL.