(No Model.) 2 Sheets—Sheet 1.

C. OBERLE & E. FALLER.

PIPE FORMING MACHINE.

No. 543,558. Patented July 30, 1895.

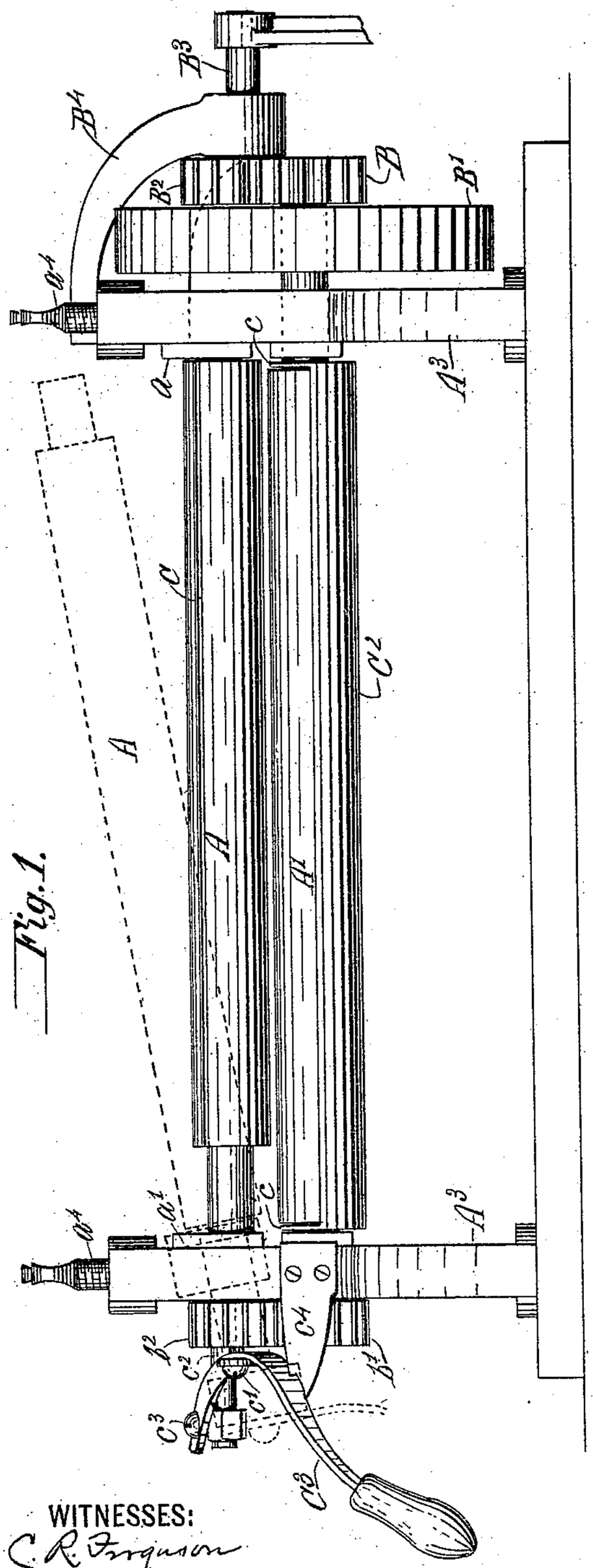

Fig. 1.

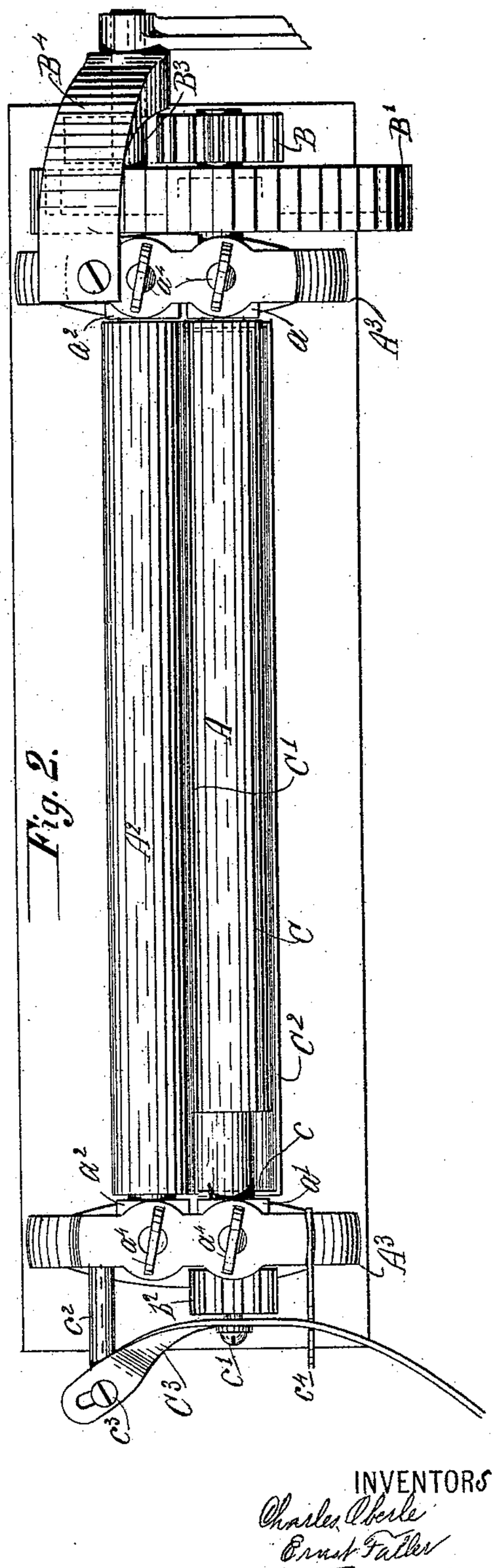

Fig. 2.

WITNESSES:
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THEIR ATTORNEY

(No Model.) 2 Sheets—Sheet 2.

C. OBERLE & E. FALLER.

PIPE FORMING MACHINE.

No. 543,558. Patented July 30, 1895.

Fig. 5.

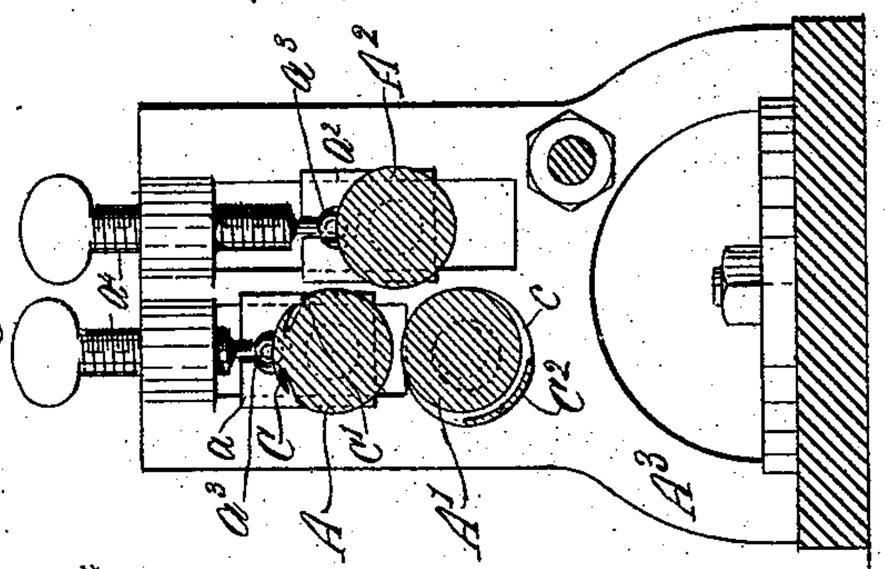

Fig. 4.

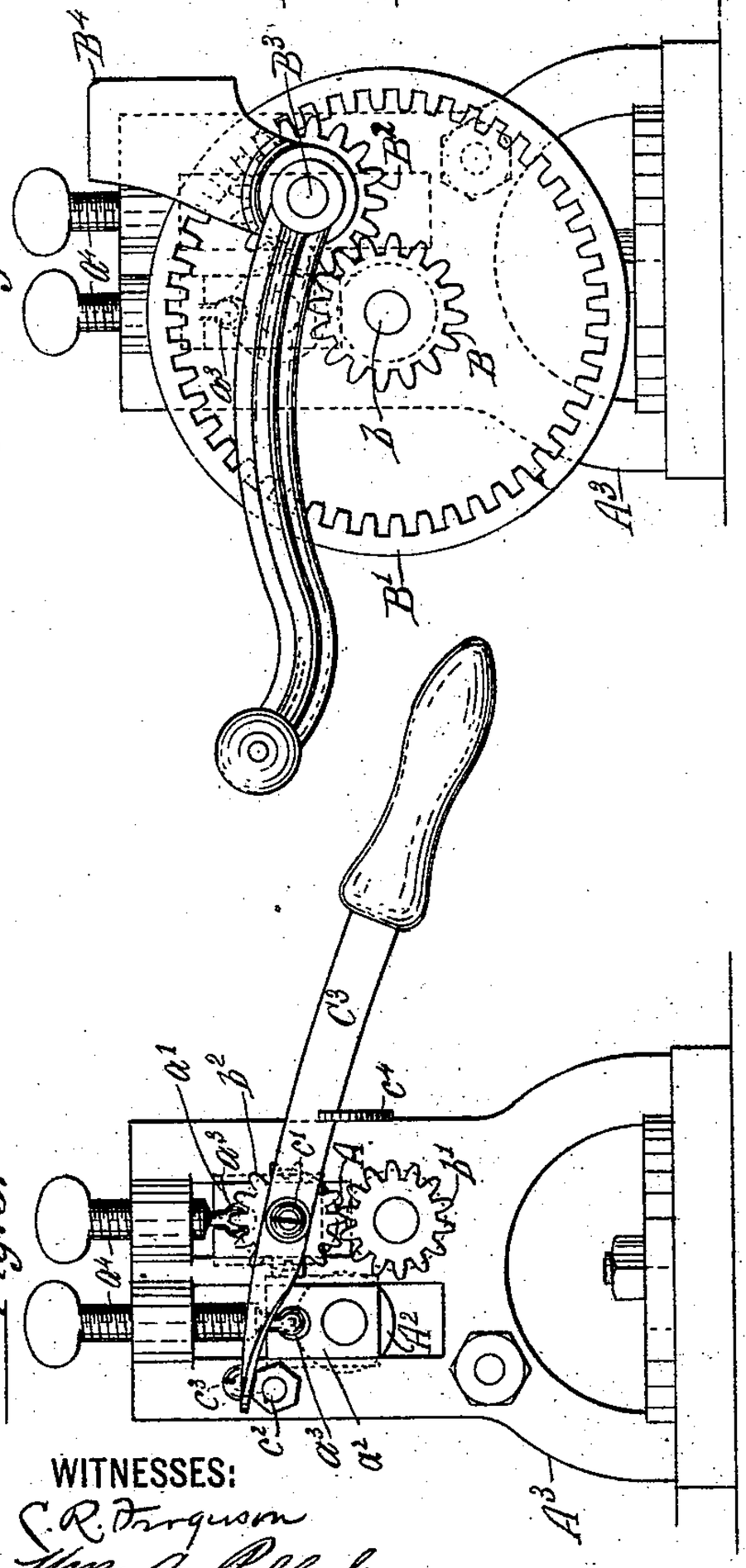

Fig. 6.

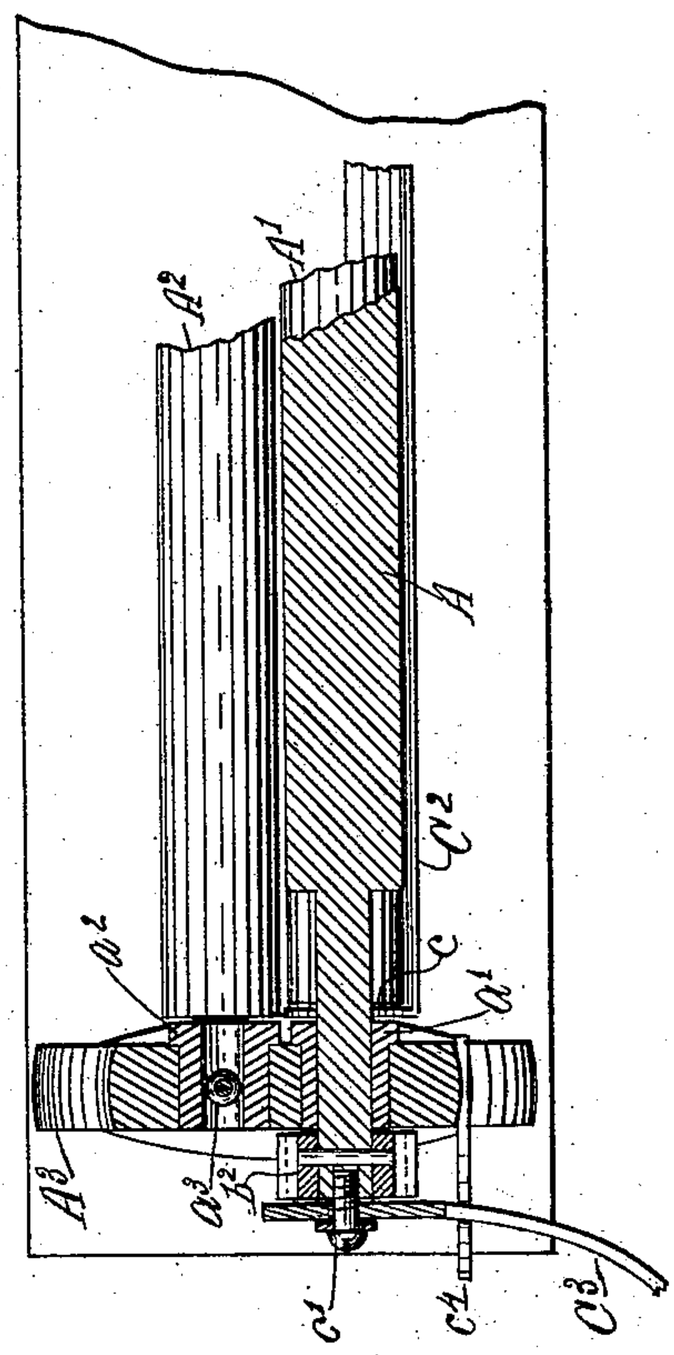

Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES OBERLE AND ERNST FALLER, OF NORTH TARRYTOWN, NEW YORK, ASSIGNORS TO MAX H. C. BROMBACHER, OF SAME PLACE.

PIPE-FORMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 543,558, dated July 30, 1895.

Application filed September 30, 1892. Serial No. 447,392. (No model.)

To all whom it may concern:

Be it known that we, CHARLES OBERLE and ERNST FALLER, of North Tarrytown, Westchester county, and State of New York, have invented a certain new and useful Improvement in Pipe-Forming Machines, of which the following is a specification.

This invention relates to machines for forming pipes, such as stovepipes and the like; and it consists in a construction whereby a sheet of metal cut to the required size has the seam-laps formed on the opposite edges, the metal turned in cylindrical form, and the seam-laps pressed together, or, in other words, completing a pipe in one machine.

Heretofore it has required one machine to form the seam-laps, another machine to turn the sheet in cylindrical form, and another machine to press the seam.

We will describe a machine embodying our improvement, and then point out the novel features in claims.

In the accompanying drawings, Figure 1 is a front elevation of a machine embodying our improvement. Fig. 2 is a top or plan view thereof. Fig. 3 is an end view. Fig. 4 is a view of the end opposite to that of Fig. 3. Fig. 5 is a transverse vertical section. Fig. 6 is a plan view of a portion of the machine, partly in section.

Referring by letter to the drawings, A designates the forming-roller, A′ the lower or pressure roller, and A^2 the turning-roller. All of the rollers have journal-bearings in the standards A^3 extending upward from a suitable base. The bearings for the roller A′ are fixed, but the bearings for the rollers A and A^2 are vertically adjustable, so that said rollers may be moved vertically.

The roller A has its bearings in blocks a a' movable in slots formed in the standards A^3 directly above the roller A′, and the roller A^2 has its bearings in blocks a^2 sliding in slots in the standards at the rear of the rollers A A′. Each block has connected to it, by means of a swivel or ball-and-socket joint a^3, an adjusting-screw a^4. These adjusting-screws engage in tapped holes in the top plates of the standards A^3, and evidently by manipulating these bolts the said rollers may be adjusted to accommodate them to different thicknesses or curves.

A gear-wheel B is secured to the end of the extended journal b of the roller A′, and an internally-toothed gear-wheel B′ is also secured to the journal b near the standard A^3. These gear-wheels B B′ are intended to be engaged by a gear B^2 on a longitudinally-movable crank-shaft B^3, whereby either a fast or slow rotary motion may be imparted to the roller A′ for the purposes hereinafter set forth. The crank-shaft B^3 is movable longitudinally in a bearing in the bracket B^4 extended from the standard A^3. At the opposite end the journal of the roller A′ is provided with a pinion b' adapted to mesh with a pinion b^2 on the journal of the roller A and impart rotary motion to the roller A.

The roller A^2 is rotated by the contact of the pipe metal with it.

The roller A has longitudinal grooves C C′ formed in it. These grooves are undercut, or arranged on a tangent, to receive the edges of the sheet metal to form the seam-laps.

The operation of the machine as so far described is as follows: The crank-shaft is placed in gear with the wheel B, so that a fast motion may be imparted to the rollers. A sheet of metal has one edge placed in the groove C. Then by rotating the rollers the sheet is curved transversely and a seam-lap formed. This lap is disengaged and the sheet is reversed and its opposite edge is placed in the groove C′. Now by a rotation of the rollers in the reverse direction from that of their former movement the second lap is formed and disengaged from the groove C′. The two laps may now be hooked together and the crank-shaft geared with the wheel B′ to impart a slow motion to the rollers for pressing the seam. The rollers are now operated to press the seam between the rollers A A′ and the pipe removed in a finished condition. To obviate the necessity of adjusting the roller A to increase the pressure for pressing the seam, we may employ a presser-plate. This presser-plate consists of a strip of metal C^2 having inwardly-turned ends c journaled loosely on the journals of the roller A′. When the rollers are rotated to press the

seam, this presser-plate is placed between the pipe material and the roller A′.

The finished pipe may be removed from the roller A by moving the said roller longitudinally until the journal is removed from the bearing-block a and tilting the end of the roller upward, as shown in dotted lines, Fig. 1. During this tilting movement the block a' will swing on its ball-and-socket joint. By employing the ball-and-socket joint the bearing of the roller is rendered more even than is possible when the ordinary connections are employed.

For the purpose of moving the roller A longitudinally we employ a lever C^3, having a loose connection with the journal of said roller, (here shown as by means of a stud or screw c'.) One end of the lever is provided with a suitable handle, and the opposite end is fulcrumed to a stud c^2, adjustably connected to the standard A^3, by means of a screw c^3 extended through a slot in said lever into the stud c^2.

When the roller A is in position for forming a pipe, it is held from longitudinal movement by engaging the lever C^3 with a detent c^4 extended from the standard A^3, as shown. When it is desired to move the roller A longitudinally, for the purpose described, it is only necessary to release the screw of the block a', so that the lever C^3 may be lifted from the detent c^4 and then moved outward, or the lever may be of resilient metal and spring out of engagement with the detent.

Having described our invention, what we claim is—

1. In a pipe forming machine the combination with the pressure roller and the turning roller, of the longitudinally movable forming roller having the grooves, and gearing for imparting a fast or slow rotary movement to the pressure roller, substantially as specified.

2. In a pipe forming machine the combination with the pressure roller and the turning roller, of the tilting longitudinally movable roller having the longitudinal grooves, and a pressure plate movable between the pressure roller and the turning roller, substantially as specified.

3. In a pipe forming machine, the combination with the pressure roller and the turning roller of the forming roller movable longitudinally, a lever for moving said roller longitudinally, and the swinging bearing block for said roller, substantially as specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

CHARLES OBERLE.
ERNST FALLER.

Witnesses:
F. V. MILLARD,
MAX H. C. BROMBACHER.