

(No Model.)

2 Sheets—Sheet 1.

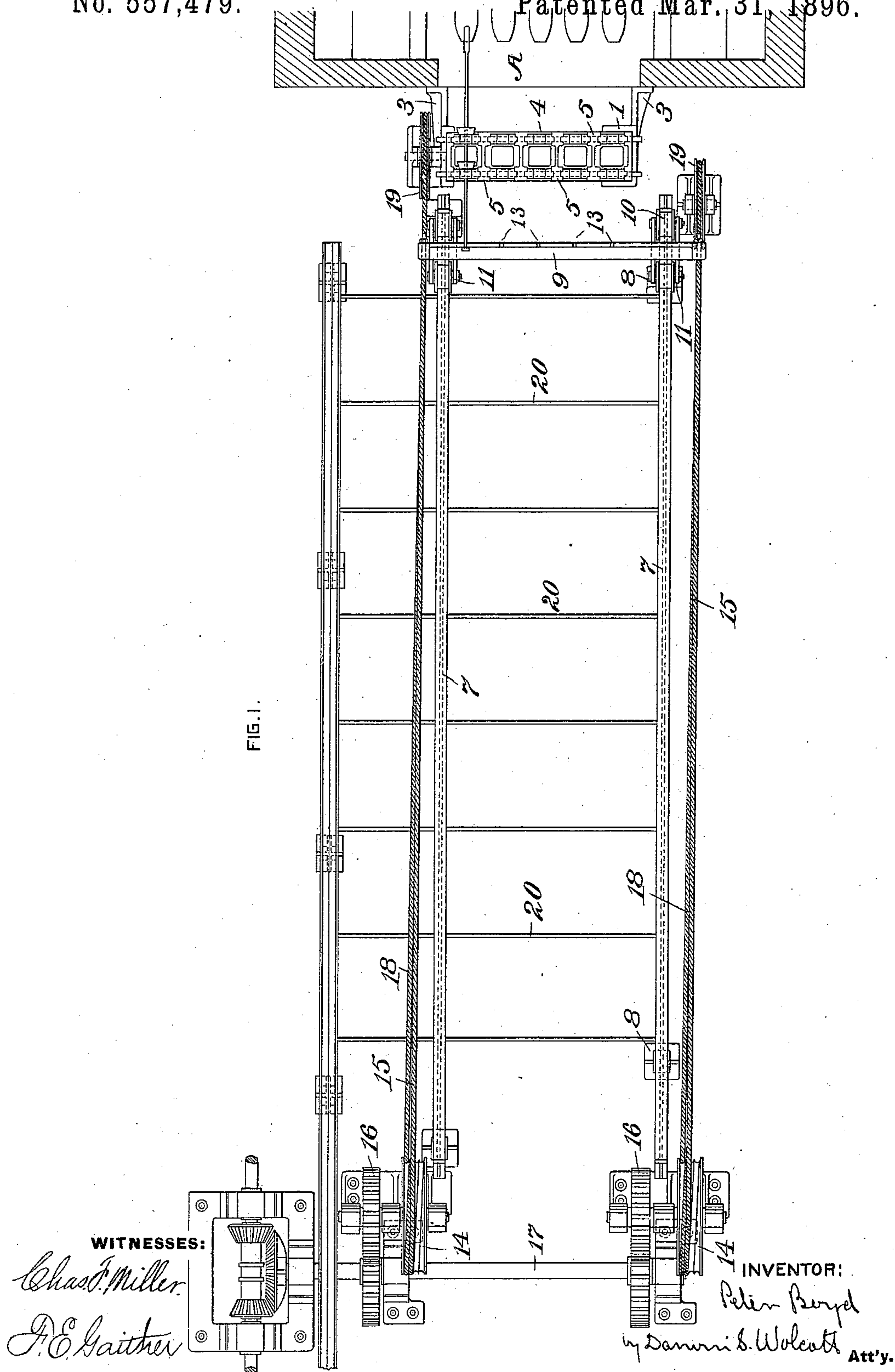
P. BOYD.

DRAW BENCH FOR MANUFACTURING PIPE.

No. 557,479.

Patented Mar. 31, 1896.

FIG. 1.



(No Model.)

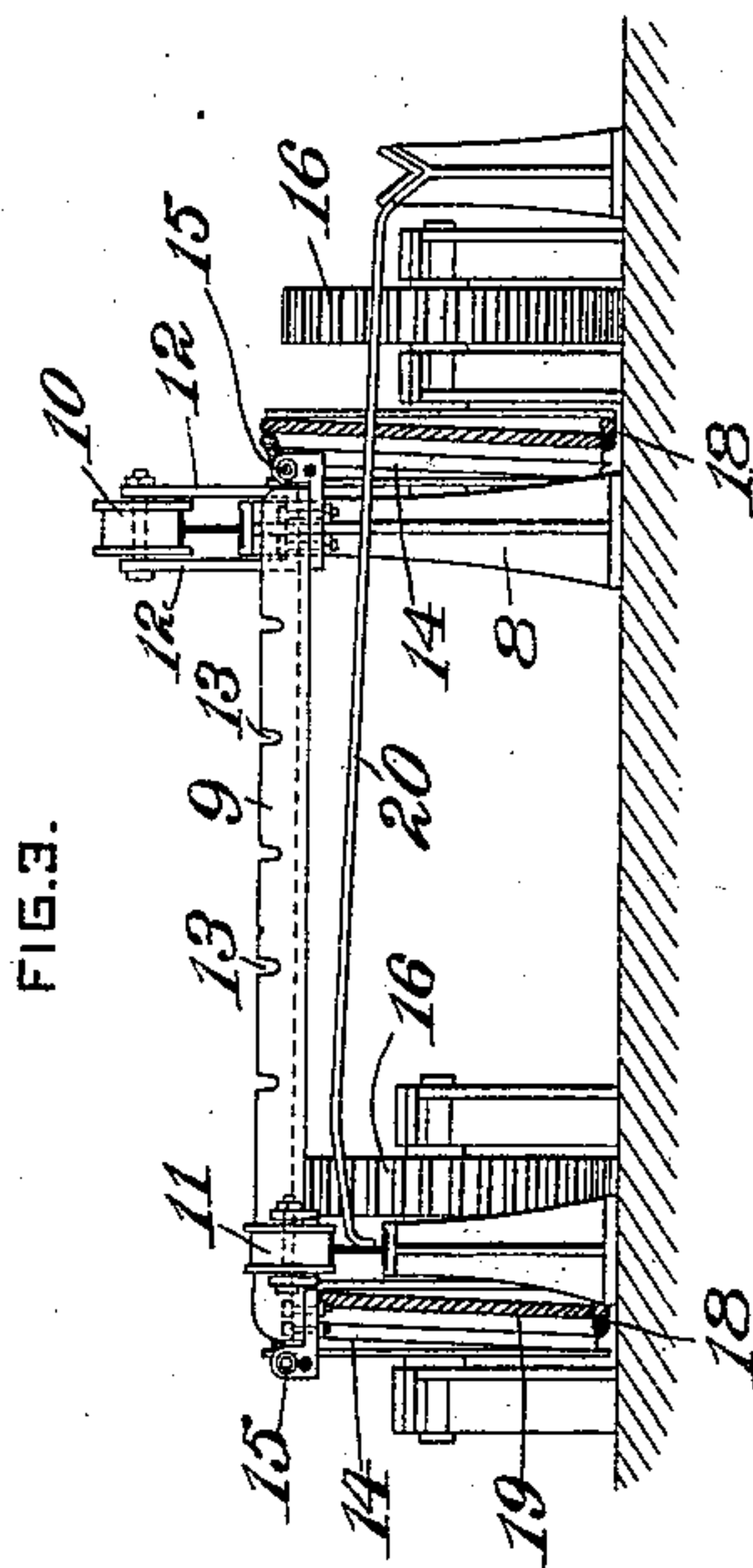
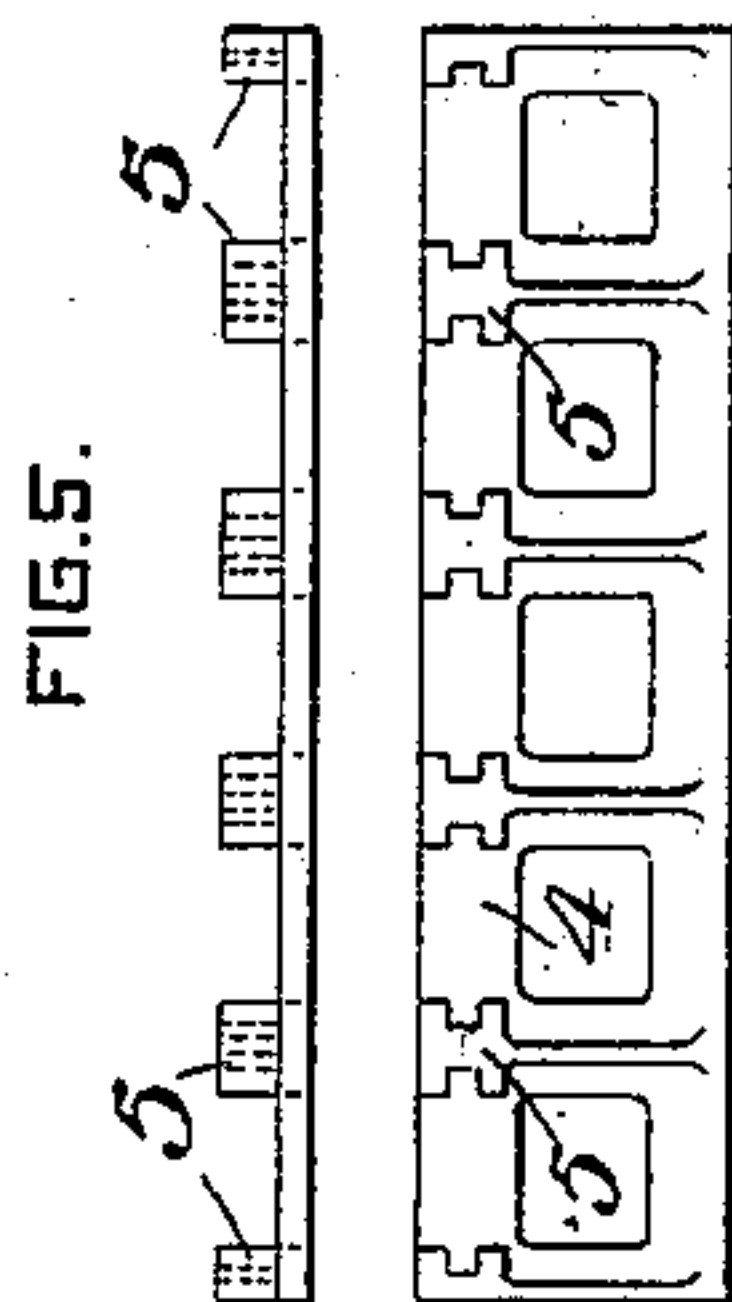
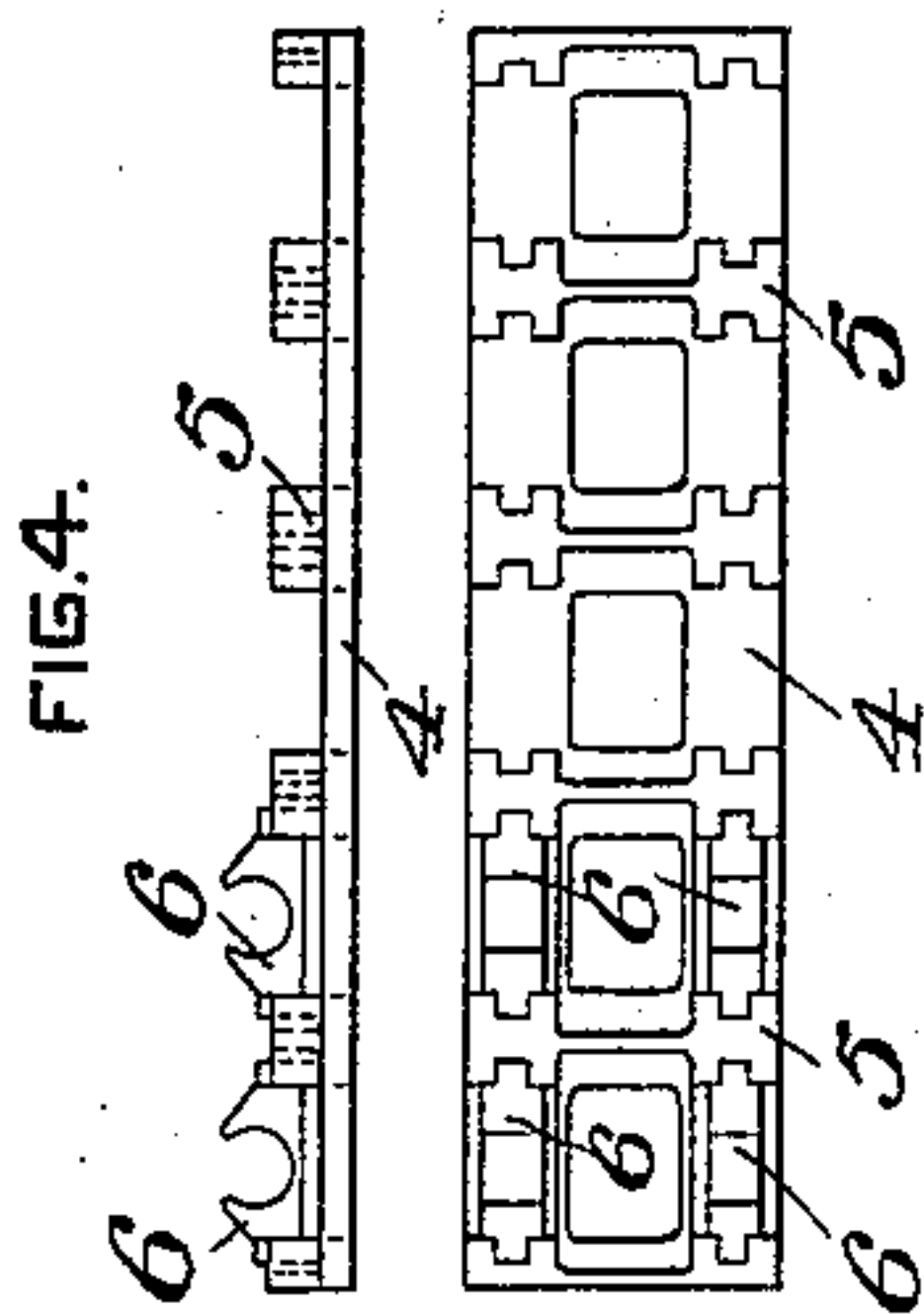
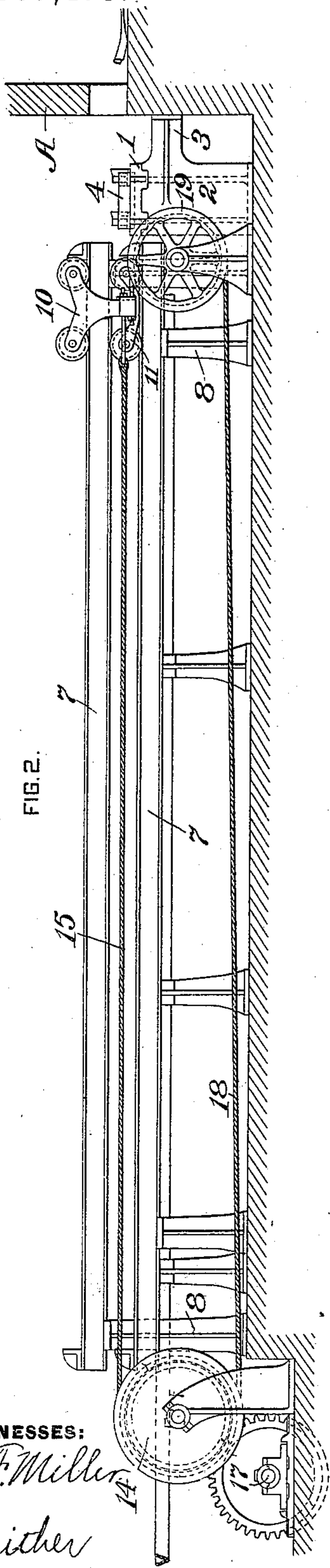
2 Sheets—Sheet 2

P. BOYD.

DRAW BENCH FOR MANUFACTURING PIPE.

No. 557,479.

Patented Mar. 31, 1896.



WITNESSES:

Chas. F. Miller
F. E. Gaither

INVENTOR,

Peter Boyd
by Danis B. Wolcott
Att'y.

UNITED STATES PATENT OFFICE.

PETER BOYD, OF WHEELING, WEST VIRGINIA, ASSIGNOR TO THE RIVERSIDE
IRON WORKS, OF SAME PLACE.

DRAW-BENCH FOR MANUFACTURING PIPE.

SPECIFICATION forming part of Letters Patent No. 557,479, dated March 31, 1896.

Application filed March 29, 1895. Serial No. 543,669. (No model.)

To all whom it may concern:

Be it known that I, PETER BOYD, a citizen of the United States, residing at Wheeling, in the county of Ohio and State of West Virginia, have invented or discovered certain new and useful Improvements in Draw-Benches for the Manufacture of Pipe, of which improvements the following is a specification.

In application Serial No. 543,667, filed March 29, 1895, I have described and shown an improvement in draw-benches for the manufacture of pipe, wherein provision is made for a lateral movement of the bell-holder and draft mechanism into line with the several skelps as they are arranged in the furnace for heating. In another application, Serial No. 543,668, filed March 29, 1895, I have described and shown a further improvement in draw-benches, wherein provision is made for a lateral adjustment of the bell-holder and an adjustable connection for attaching the skelp to the draft-rigging, so that the skelp may be drawn through the bell without any material lateral change in its position in the furnace.

The invention described herein relates to certain further or additional improvements in the class or kind of draw-benches described in said applications, and has for its object the arrangement of a series of two or more holders for the welding die or bell in front of the opening in the furnace, through which the skelps are withdrawn, and the provision of a like number of connections to the draft-rigging for the pipe-tang or gripping-tongs, thereby rendering it possible not only to draw each individual skelp from the furnace without any material lateral movement thereof, but also to draw in the same manner two or more skelps simultaneously.

In the accompanying drawings, forming a part of this specification, Figure 1 is a top plan view of a pipe-manufacturing apparatus or machine embodying my improvement. Fig. 2 is a side elevation, and Fig. 3 an end elevation, of the same. Figs. 4 and 5 are detail views of the holders for the welding dies or bells.

In the practice of my invention the furnace A is constructed in the usual or any suitable manner and is provided in its front wall with

an opening of a sufficient width to permit, if so desired, the simultaneous withdrawal of a series of two or more skelps without any material lateral shifting of the same. In front of this opening I arrange a bed-plate 1 of a length approximately equal to the width in the opening in the front wall of the furnace and support the same upon standards 2, which are preferably tied to the furnace structure by brackets 3. This bed-plate 1 is provided with a suitable seat in its upper face for the reception of a block 4, provided with upwardly-projecting lugs 5, having grooves in their side walls, said lugs and grooves forming seats for the reception of the die or bell holders 6, as clearly shown in Figs. 4 and 5. In Fig. 4 the block 4 is shown as provided with double seats for holding two welding dies or bells in line with each other, while in Fig. 5 the block is shown as provided with single seats.

In the rear of the bell-holder table or stand are arranged two lines of rails 7, supported upon posts or pillars 8. On these rails I mount a carriage consisting of a cross-head 9, supported on trucks 10 and 11. One end of the cross-heads passes under one of the lines of the rails and is connected to the truck 10 by links 12 passing on opposite sides of the line of rails. The opposite end of the cross-head is secured to the frame of the truck 11 midway between the flanged wheels thereof. The cross-head is provided with notches 13 or other suitable means whereby the pipe-tangs or pipe-gripping tongs may be connected to the cross-head. These notches or other connecting devices are arranged in line with the seats for the holders of the welding dies or bells hereinbefore referred to.

At or near the rear ends of the lines of rails 7 are mounted drums 14, one outside of each line of rails, as clearly shown in Figs. 1 and 2. To these drums are attached one end of ropes 15, preferably formed of wire, whose opposite ends are attached to the outer ends of the cross-head 9. On the shafts of the drums 14 are keyed gear-wheels 16, which intermesh with corresponding gear-wheels on the driving-shaft 17, which is adapted to be rotated in both directions by any suitable form of driving mechanism—as, for example,

that clearly shown in Fig. 1. When these drums are rotated in one direction, the carriage is drawn toward the rear end of the line of rails, pulling the pipe-skelp from the furnace through the welding die or bell. In order to shift the carriage to the front end of the lines of rails, where other skelps may be connected thereto, another pair or set of ropes 18 is connected to the drums in such manner that when the latter is rotated in a reverse direction the ropes 18 will be wound thereon and pull the carriage to the front of the lines of rails, said second set of ropes passing over guide-pulleys 19 at or near the front ends of the lines of rails.

In order to provide for the removal of the welded pipe, a series of skids 20 is arranged transversely of the lines of rails, passing across the space between said lines and under one of the lines, which is preferably raised to a greater height than the other line of rails. This arrangement of one of the rails at a considerable elevation permits easy access by the workman to the space between the two lines of rails.

While this construction—*i. e.*, the arrangement of the lines of rails at different heights, as shown in Fig. 1—is preferred, for the reason stated, both lines of rails may be arranged at the same height and the cross-head either suspended from the trucks thereon in the manner shown to the right of Fig. 3 or secured to the frame of the trucks, as shown to the left in Fig. 3.

In operating my improved apparatus the skelps are arranged in the furnace side by side, as is customary and as illustrated to the right of Fig. 1. When these skelps have become heated to the proper temperature, the welding die or dies are slipped over the pipe tang or reins of the gripping-tongs and placed in position in the holder or holders, and the pipe-tang or gripping-tongs are attached to the draft-carriage, as shown in Fig. 1.

It will be readily understood by those skilled in the art that in case two or more of the

skelps are properly heated both may be connected to the draft-carriage and drawn simultaneously out of the furnace and through the welding dies or bells. It is characteristic of my improvement that either one, two, or more skelps, up to the full capacity of the plant, may be drawn and welded at pleasure by the same movement of the cross-head, and by the term “capacity” I mean the number of welding die or bell holders arranged in front of the furnace.

I claim herein as my invention—

1. In a pipe bending or welding apparatus, the combination of a heating-furnace, a series of two or more die or bell holders arranged side by side in front of the furnace, two lines of rails arranged at or approximately at right angles, to the line of the die or bell holders, a cross-head mounted on the rails and provided with means for connection with one, two or more skelps without shifting the same laterally, and reversible winding-drums having flexible connections to opposite sides of the cross-head, whereby the latter may be moved from and toward the line of die or bell holders, substantially as set forth.

2. In a pipe-welding apparatus, the combination of a heating-furnace, a series of two or more holders for the dies or bells arranged side by side in front of the furnace, two lines of rails arranged at or approximately at right angles to the line of die or bell holders, one of said lines of rails being elevated, a series of two or more skids arranged at or approximately at right angles across the space between the lines of rails and passing under the elevated line, and mechanism for moving the cross-head back and forth along the line of rails, substantially as set forth.

In testimony whereof I have hereunto set my hand.

PETER BOYD.

Witnesses:

DARWIN S. WOLCOTT,
F. E. GAITHER.