

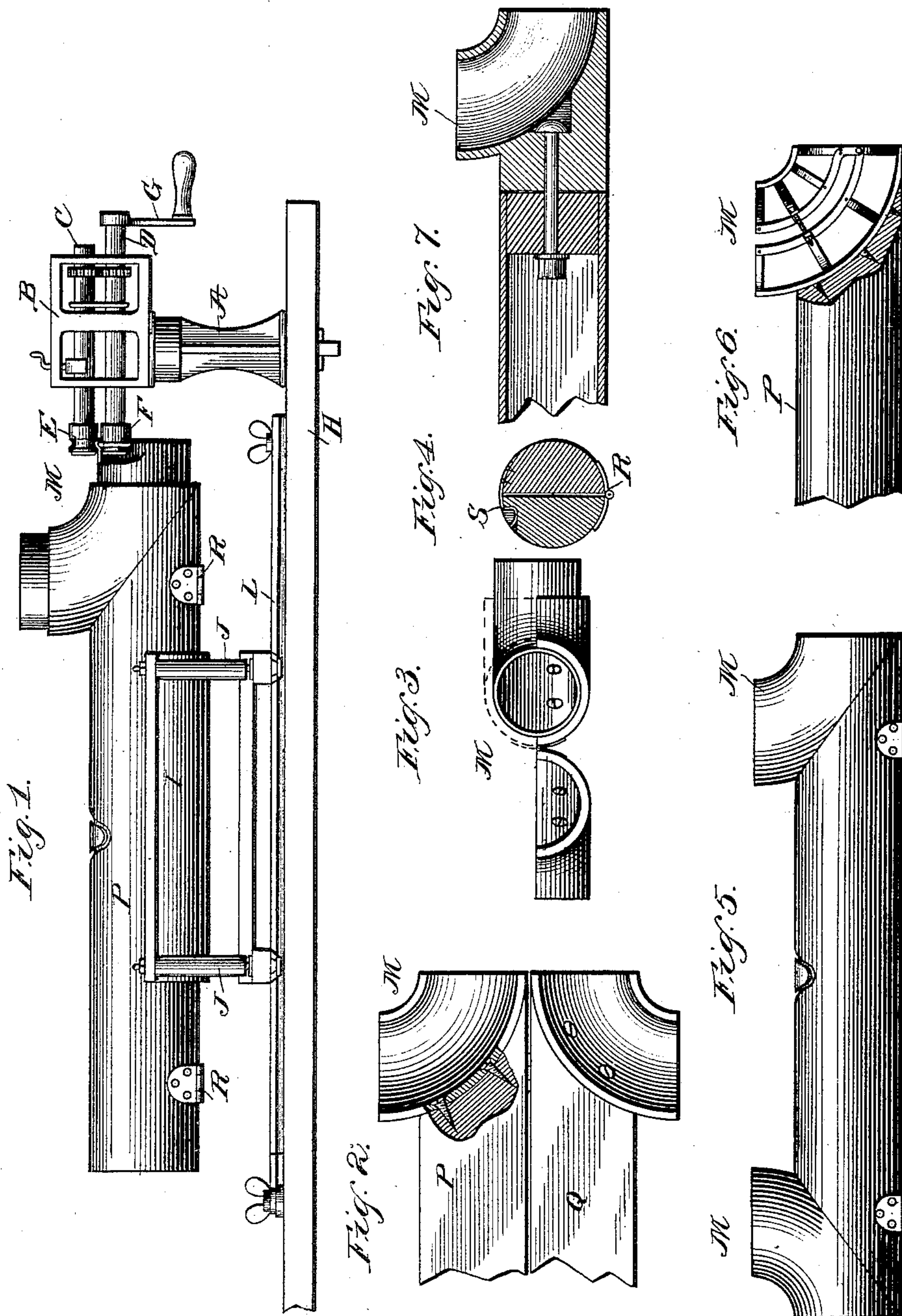
(No Model.)

F. F. VOIGT.

PIPE ELBOW HOLDER FOR SCREW THREADING MACHINES.

No. 424,519.

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# UNITED STATES PATENT OFFICE.

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## PIPE-ELBOW HOLDER FOR SCREW-THREADING MACHINES.

SPECIFICATION forming part of Letters Patent No. 424,519, dated April 1, 1890.

Application filed February 21, 1888. Serial No. 264,747. (No model.)

*To all whom it may concern:*

Be it known that I, FERDINAND F. VOIGT, a citizen of the United States, residing in Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Pipe-Elbow Holders for Screw-Threading Machines, of which the following is a specification.

This invention relates to improvements in pipe-elbow holders especially designed for use in connection with screw-threading machines for threading the ends of sheet-metal pipes, by means of which a close and rigid but detachable joint between sections of stove or other pipe is provided.

Prior to this invention, so far as I am aware, pipe-holders have not been adapted to, and in fact could not possibly, hold an elbow during the threading operation, because of the necessary rotation or swinging of the elbow about the beading-rollers; hence before my present invention screw-threaded elbows were unknown in the art, and as a result screw-threaded straight sections of pipe have been used to but a limited extent, not only because of their unfinished and unusual appearance when connected by the old form of elbow with a slip-joint, but also because the resultant concentration of all lateral strains upon the elbow-joints would negative all the advantages gained by making a comparatively rigid joint between the straight sections of the pipe, for the usual fastenings for suspending the pipe would have to be employed in connection therewith.

The prime object of this invention is to have a holder for pipe-threading machines in which an elbow may be held in proper position during the operation of forming screw-threads on the ends thereof.

Another object is to have a pipe-holder in which an elbow may be held so as to rotate upon or about the axis of either end thereof.

A further object is to have such a pipe-elbow holder capable of a lateral and vertical adjustment, whereby the angle of pitch of the thread may be varied and elbows of different sizes may be operated upon.

Further objects are to have a pipe-holder capable of a lateral and vertical adjustment, in which may be held during the operation of threading either a straight section or elbow

of pipe, to have the pipe-elbow holder so constructed as to materially facilitate the insertion or removal of the elbows therefrom, and to provide certain details of construction in the carrying out of my invention, all as illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of a screw-threading machine containing a pipe-holder embodying my invention; Fig. 2, a detail plan view of the pipe-holder, showing the same open for insertion of the pipe; Fig. 3, a front elevation thereof; Fig. 4, a transverse section thereof through the automatic catch; Fig. 5, an elevation of a double-ended pipe-holder for holding two elbows; Figs. 6 and 7, detail views showing modified forms of holders.

Similar letters of reference indicate the same parts in the several figures of the drawings.

Screw-threading straight sections of sheet-metal pipe by machinery is well known in the art, and one of the machines for performing that operation and upon which this invention is particularly designed as an improvement is fully shown and described in United States Letters Patent No. 369,417, granted me September 6, 1887. As I prefer in connection with my present invention to employ the machine shown in that patent in its entirety, I need not herein dwell at length upon the detailed construction thereof, as illustrated in the general view, Fig. 1, of the accompanying drawings, but will briefly state that it consists, generally, of a standard A, in the head-frame B of which are journaled short shafts C D, carrying on their ends, respectively, grooved and beaded rollers E F for forming the thread upon the pipe, to which power is applied by means of the crank-handle G, secured to the opposite end of the shaft D, although it is obvious that the crank might be as well secured to the shaft C or entirely dispensed with and belt-pulleys or other devices substituted for applying power. The shafts C D are suitably geared together, so as to rotate in unison.

The standard A is secured to a work-bench or a table H, upon which is also mounted the pipe-holder, consisting of a trough I, extending substantially parallel to the axes of the



shafts C D, and supported upon screw-jacks J for elevating and lowering the same, said jacks in turn being secured in an upright position upon a base-board K, which latter is  
5 secured to a laterally-adjustable guide-board L, pivoted to the table or bench.

Between the base and the side edges of the guide-board is formed a tongue-and-groove connection for enabling the longitudinal ad-  
10 justment of the trough toward and away from the beading-rollers, according to the length of the pipe-section, while the pivot-connection between the guide-board and table permits a lateral adjustment of the trough rela-  
15 tive to the beading-rollers, by means of which the angle of pitch of the thread to be formed upon the pipe may be varied, the rear end of the guide-board being connected with the table in such manner that the said board may  
20 be secured at any point of its adjustment.

Thus far the machine is identical with that of my aforesaid patented machine, except some minor details, which may or may not be employed, and it is evident that such a ma-  
25 chine is not adapted and cannot possibly hold an elbow during the operation of forming the thread on the ends thereof any more than any of the prior machines for a similar purpose of which I am aware. This invention  
30 is particularly intended to cure this defect in the old form of machines, or, rather, add a new function to the old machines, without in any manner detracting from or interfering with the functions of such machine; and to this  
35 end is provided an elbow-holder, consisting, preferably, of a hollow cast frame M, formed on the arc of a circle and cut axially, so as to form two parts N O, each of which is secured to and supported upon half-sections P Q of a  
40 cylinder, also cut axially and constituting the shank of the holder, the two parts of said shank being united at their side edges by hinges R near the ends thereof, in such manner that when folded together they form a  
45 complete cylinder, while the sections of the elbow-holder also come together in the same way, but form a quadrant of a hollow cylinder, into which the elbow is inserted and held during the screw-threading operation. It is  
50 immaterial whether the shank be hollow or solid, so long as means are provided for securing the elbow-holder thereto, and it may, if desired, be cast with the elbow-holder itself, or it may have such a skeleton structure  
55 as is shown in Fig. 6, the object of which is to lessen the weight of the device as a whole, and at the same time provide for hinging the section thereof upon axes transverse to the shank thereof, so that only the holder  
60 need be divided, while the shank may be a complete cylinder. The two parts of the shank of the preferred construction are united, as before stated, at one side edge by means of the hinges R, and, when brought together so  
65 as to form a cylinder, are held in that position by the spring-catch S, secured to one section and engaging the other, or by some equiv-

alent device. This shank lies and works in the trough I, by which it is supported and in which it is free to have both an axial rota-  
70 tion and an endwise or longitudinal movement, being of sufficient length to balance the holder and contents and have such endwise movement without being withdrawn from the trough. It will be understood that the  
75 shank alone rests in the trough, so that the elbow and holder may revolve forward of the trough, the horizontal arm of the elbow and holder and the shank having a common axis, and it is equally apparent that when the shank  
80 is placed in the trough the elbow-holder may be manipulated in exactly the same manner as a piece of pipe laid therein, and all the movements of the old holder imparted thereto  
85 for operating upon various-sized pipe at different angles without altering the old machine in the slightest degree.

The holder shown in Fig. 5 is simply a duplication of the holder shown in Fig. 1 upon the opposite ends of the shank, and is particu-  
90 larly designed for use in large shops, so that two elbows may be inserted and removed at the same time, and thus reduce the amount of work required in handling.

Instead of the shank having a rigid connection with the holder, as shown, a swivel-connection such as is shown in Fig. 7 may be provided, in which case the holder would be  
95 the only part to revolve during the threading operation, the shank, however, though not revolving, having an endwise or sliding bearing in its support, so as to permit the feed of the pipe to the beading-rollers.

Having described my invention, what I claim, and desire to secure by Letters Pat-  
105 ent, is—

1. In a machine for screw-threading sheet-metal pipe, an elbow-holder conforming in shape to an elbow, revolubly supported and constructed to hold the elbow with one of its  
110 arms in a line with the axis of the support upon which the holder revolves, substantially as described.

2. In a machine for screw-threading sheet-metal pipe, an elbow-holder conforming in shape to the elbow, comprising two sections hinged or pivotally connected together, in combination with means for revolubly supporting the holder or the axis of one arm of the elbow, substantially as described.  
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3. In a machine for screw-threading sheet-metal pipe, the combination of an elbow-holder, conforming in shape to an elbow and having a shank in line with one arm of the elbow-holding portion, and a support affording a sliding bearing for the shank of the holder, whereby said holder may have simultaneously a rotation upon the axis of the shank and an endwise or longitudinal movement, substantially as described.  
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4. In a machine for screw-threading sheet-metal pipe, the combination of an elbow-holder, conforming in shape to an elbow and having a shank in line with one arm of the



elbow-holding portion, a support affording a sliding bearing for the shank of the holder, and means for adjusting said support laterally, substantially as described.

5 5. In a machine for screw-threading sheet-metal pipe, the combination of an elbow-holder, conforming in shape to an elbow and having a shank in line with one arm of the elbow-holding portion, a support affording a  
10 sliding bearing for the shank of the holder, and means for adjusting said support laterally and vertically, substantially as described.

15 6. In a machine for screw-threading sheet-metal pipe, the combination, with a table, the beading-rollers, and a support therefor mounted on said table, of an elbow-holder conform-

ing in shape to an elbow and having a shank in line with one arm of the elbow-holding portion, a trough affording a sliding bearing for the shank of the holder, a pivot-connection 20 between said trough and table, and means for vertically and longitudinally adjusting said trough, substantially as described.

7. In a machine for screw-threading sheet-metal pipe, a two-part elbow-holder provided 25 with a shank having a common axis with one arm of said holder, and a support for said shank, substantially as described.

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Witnesses:

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