

F. E. WELLS.
DIE STOCK.

APPLICATION FILED NOV. 13, 1909.

962,184.

Patented June 21, 1910.

3 SHEETS—SHEET 1.

Fig. 1.

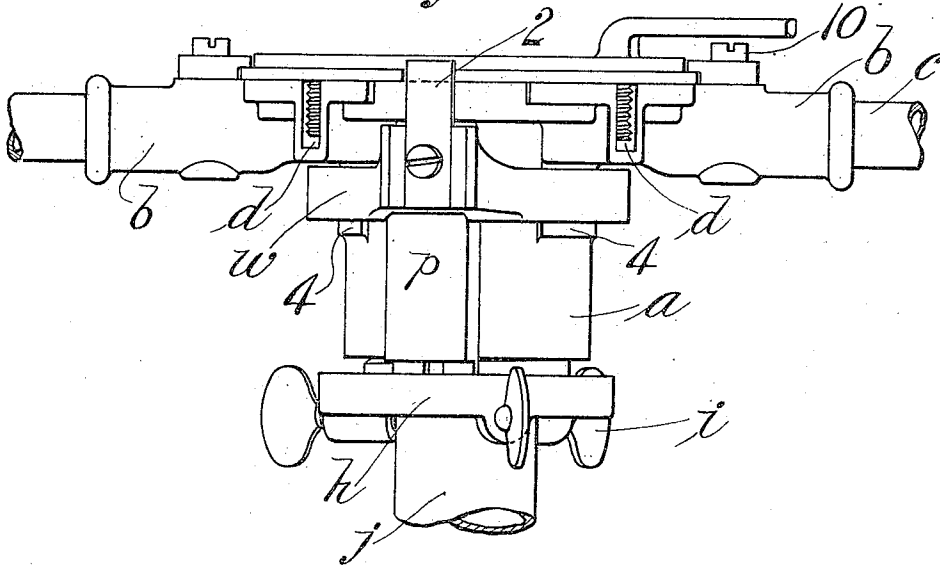
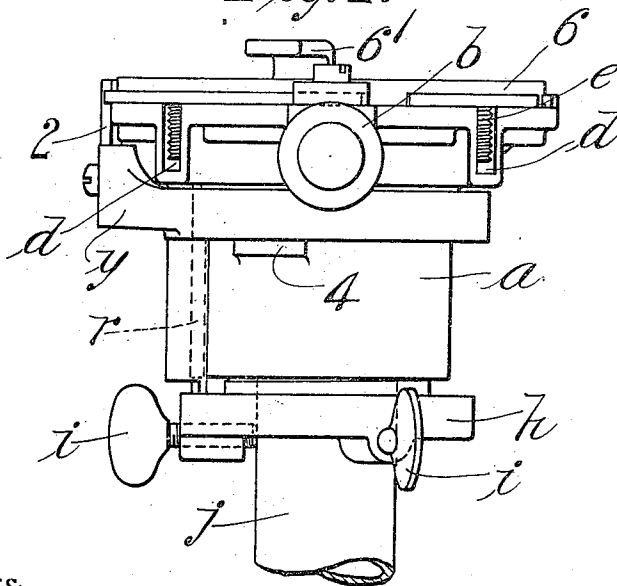


Fig. 2.



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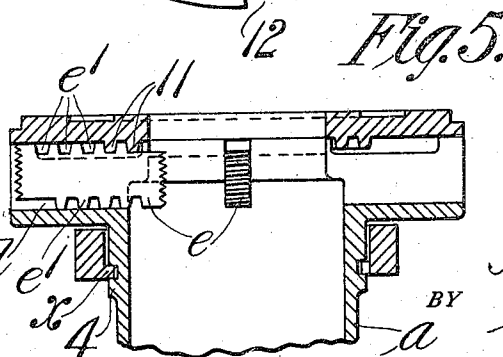
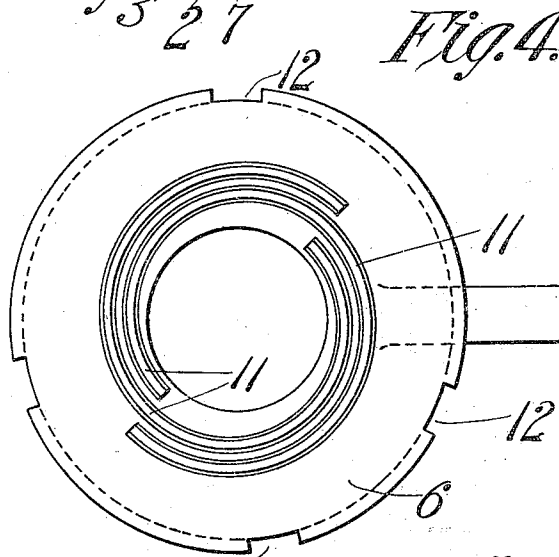
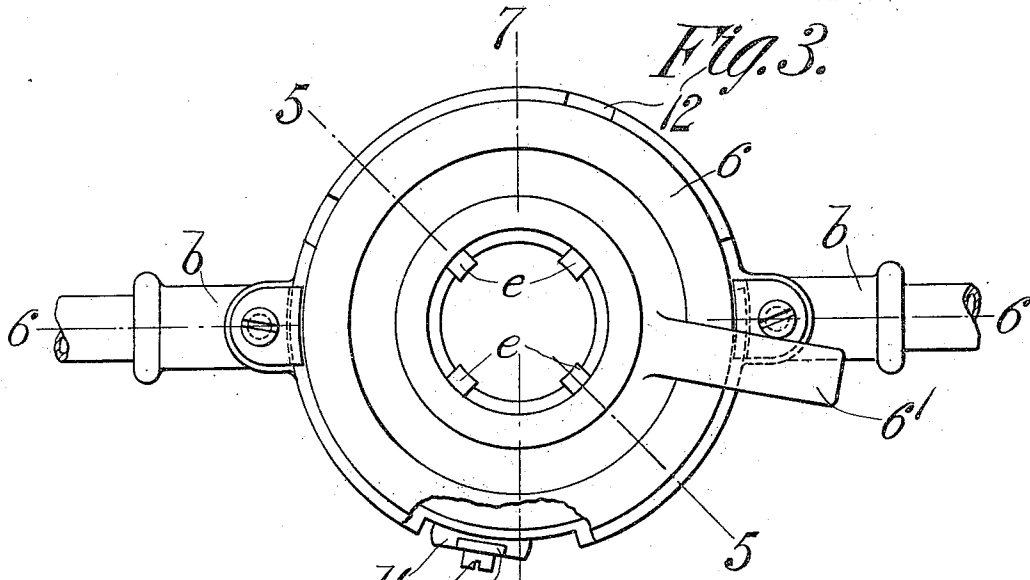
ATTORNEYS.

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3 SHEETS—SHEET 2.



WITNESSES:

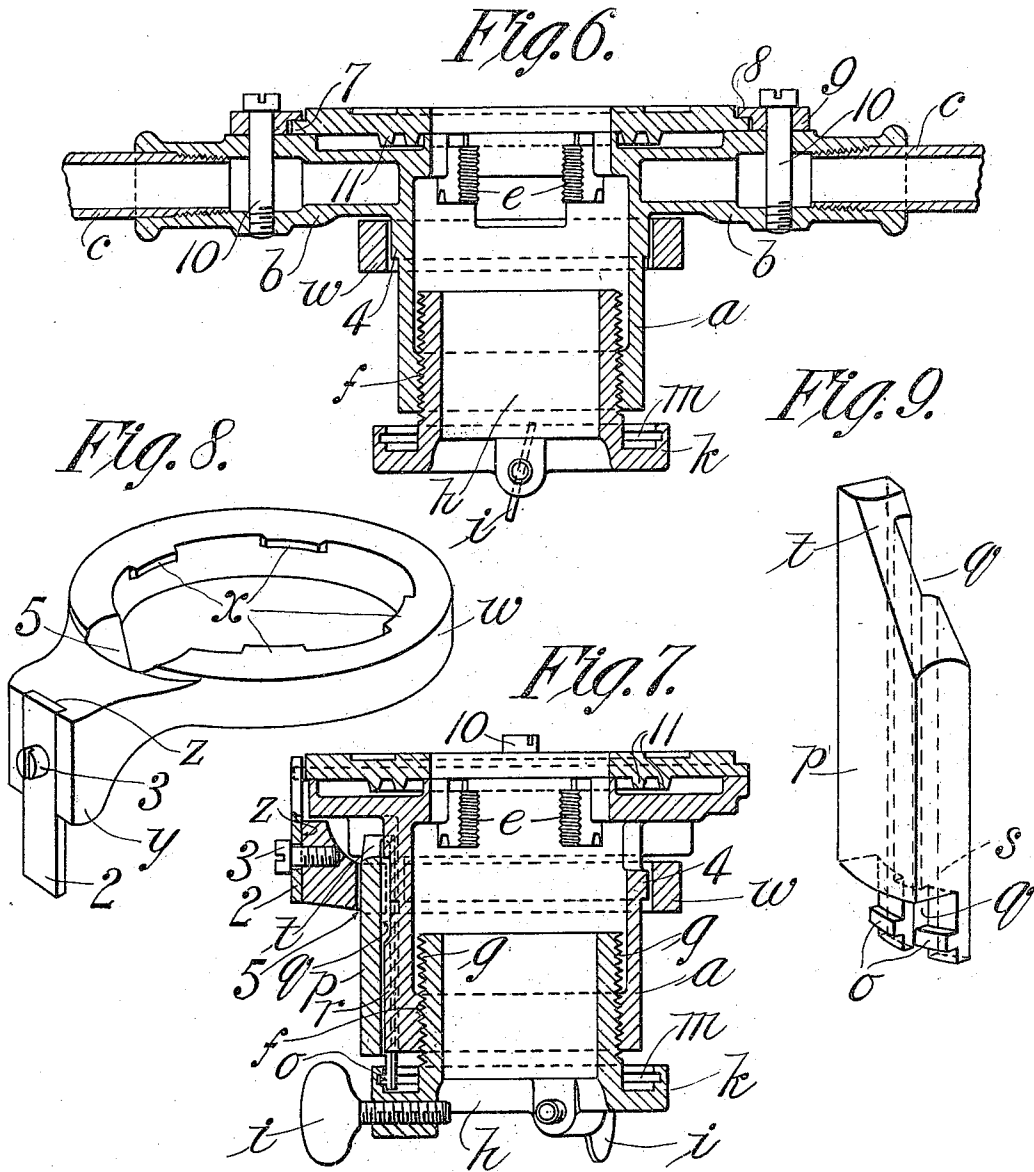
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3 SHEETS—SHEET 3.



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FREDERIC E. WELLS, OF GREENFIELD, MASSACHUSETTS.

DIE-STOCK.

962,184.

Specification of Letters Patent. Patented June 21, 1910.

Application filed November 13, 1909. Serial No. 527,773.

To all whom it may concern:

Be it known that I, FREDERIC E. WELLS, a citizen of the United States, residing at Greenfield, in the county of Franklin and State of Massachusetts, have invented new and useful Improvements in Die-Stocks, of which the following is a specification.

This invention relates to improvements in die-stocks as used for cutting threads on pipes, etc. Its object is to provide a structure in which means are provided so that the thread-forming chasers or lands are automatically withdrawn or receded as the stock is rotated whereby a tapered thread is formed on the end of the pipe.

The invention consists in general of a main body member having radially disposed openings or recesses for receiving the chasers, a cam or scroll-plate engaging the chasers, and means for turning the plate as the stock is operated during the thread-cutting operations.

The present invention is an improvement upon the construction shown, described, and claimed in Letters Patent of the United States issued jointly to Fred W. Wells and myself for improvement in die-stock dated November 9, 1909 and numbered 939,648.

In the drawings forming part of this application,—Figure 1 is a side elevation of the stock showing the parts in their assembled position and clearly indicating the connecting means between the rotatable ring member and the scroll member by means of which the chasers are operated radially outward during the cutting operation. Fig. 2 is a view similar to Fig. 1, but at right angles thereto. Fig. 3 is a top plan view of the stock. Fig. 4 is a bottom plan view of the scroll member. Fig. 5 is a detail sectional view of one end of the stock on the line 5—5, Fig. 3, showing the ring member and the scroll member in engagement with the chasers or thread-forming elements. Fig. 6 is a vertical sectional view through the axis of the stock on the line 6—6, Fig. 3, illustrating the means for rotatably securing the scroll member in place. Fig. 7 is a vertical sectional view on the line 7—7 of Fig. 3 showing the pipe-clamping member, the rotatable ring member for operating the scroll member, the wedge-shaped member for operating the ring member, and the tongue and groove connection between the pipe-clamping member and the wedge-shaped member. Fig. 8 is a detail perspec-

tive view of the rotatable ring and scroll-operating member, and Fig. 9 is a detail, perspective view of the wedge-shaped and ring-operating member.

Referring to the drawings in detail, *a* designates the cylindrical body-member of the stock that is provided with the oppositely disposed handle-receiving sockets *b* arranged at right angles to the axis of the body-member, the handles proper being shown at *c*. The member *a* is provided with radially disposed recesses *d* for receiving the chasers or thread-forming elements *e* that are preferably provided with threads on their opposite ends, as shown in Fig. 5, and grooves *e'* on their opposite edges with which spirally arranged ribs or projections on the underside of the scroll member engage. The opposite, or pipe-receiving end of the member *a* is internally threaded, as shown at *f*, for receiving the threads *g*, of the pipe-clamping member *h*, a section of pipe on which a thread is being cut being shown in place in Figs. 1 and 2 and held against rotation by means of the thumb-nuts *i*; the pipe is designated by the letter *j*. The pipe-clamping member *h* is provided with an annular part *k* on the inner portion of which is formed a groove *m* for receiving the spaced tongues *o* of the wedge-shaped member *p* (shown in detail in Fig. 9) and in the assembled view of Fig. 7. The member *p* is provided with a groove *q* for receiving a tongue *r* on the body *a*. The curvature of the member *p* on its inner surface *s* corresponds with the curvature of the outer surface of the body member *a*. The upper end of the member *p* is provided with an inclined portion *t* which engages the recess of the rotatable ring member *w* which member, in turn, operates the scroll member that moves the chasers radially inward or outward, as desired.

Referring now to the ring member *w*: This member, as shown in Fig. 8, is provided with a series of spaced supporting lugs *x*—four being shown,—and a lug portion *y* in the recess *z* of which is secured a tongue member 2 by means of the screw 3. This view shows the ring member in an inverted position from that when in use, as shown in Fig. 7. The body member *a* is provided with spaced supporting lugs 4 on which the lugs *x* of the rotatable ring member *w* rest, when in place (see Fig. 5). Adjacent the lug *y* of the ring *w* is a recess por-

tion 5 which receives the inclined portion *t* of the wedge-shaped member *p*, whereby the scroll member 6 is rotated, and consequently the chasers *e* operated, as will be described in the operation of the stock. The scroll member 6 is rotatably supported on the outer face of the body *a*, and the means for retaining the same in place is shown in Fig. 6, which consists of a tongue portion 7 that is engaged by an overhanging lip 8 of the block 9 that is secured to the socket portion *b* by means of the screws 10. The under side of the scroll and chaser operating members is shown in Fig. 4, the spirally arranged ribs 11 of which engage the grooves *e*¹ of the thread-forming chasers *e*, as shown in Fig. 5. In order to operate the scroll member from the ring member and adjust the chasers *e* so as to cut threads on different sizes of pipes, a series of recesses 12 are formed in the edge of the scroll member 6, as shown in Figs. 3 and 4, that receives the tongue 2 of the ring *w*. A handle 6¹ is provided for adjusting the scroll member 6, when desired.

Referring now to the operation of my improved die-stock with reference to the section of pipe *j* on which a thread is to be cut: The pipe (after it has been secured in a suitable vise in the ordinary way) is first clamped by the thumb-screws *i*, the operator then rotating the stock by means of the handles *c* causing the body member *a* to advance on the threaded portion *g* of the pipe-clamping member *h*. This longitudinal movement of the body member *a* causes the ring member *w* to be independently rotated on the body member by reason of the inclined part *t* of the wedge-shaped member *p* engaging the recessed opening 5 therein, it being understood that when the body member *a* is rotated the tongues *o* of the member *p* will be carried around in the grooves *m* of the annular member *h*, as the member *p* is driven and guided by the tongue or rib *r* engaging the groove *q* of the wedge-shaped member. The ring *w* is advanced or carried forward by the body member *a* during the operation, which of course causes the edge of the opening 5 to be advanced and ride on the inclined part *t* causing, as stated, the ring member *w* to be independently rotated or moved through an arc on the body member *a*. This rotative movement is, in turn, transmitted by

means of the tongue 2 to the scroll and chaser-adjusting member 6, whereby the chasers are automatically receded or drawn back during the thread-cutting operation.

In order to adjust or set the stock for any particular size of pipe, it is only necessary to rotate the scroll member 6 by means of the handle 6¹ and insert the tongue 2 in one of the recesses corresponding to the size of pipe on which a thread is to be cut. It will therefore be seen that I have produced a die-stock that is simple in construction and one that is adapted to cut a tapered thread on different sizes of pipe, and one that can be quickly adjusted to the particular size required.

What I claim, is:—

1. In a die-stock, the combination with a body member having threads formed therein, a pipe-clamping member having threads for engaging the threaded portion of said body member, a grooved annular portion integral with the clamping member, a wedge member provided with tongues for engaging the grooved portion of the annular member, a ring member rotatively mounted on the body member and having a recess formed therein for receiving the inclined surface of the wedge member during the relative axial movement of the wedge and ring members, chasers provided with teeth, a scroll member engaging the grooves of the chasers, and connecting means between the ring and scroll member, whereby the chasers may be operated during the thread-cutting operations, as described.

2. In a die-stock, the combination with a pipe-clamping member, a body member provided with a rib, a rotative ring member mounted on the body member, a member interposed between the said clamping member and the ring member and having an inclined end portion for engaging the ring member, and a groove for receiving the rib whereby when the body portion is rotated, the ring member will be advanced toward the inclined surface of the interposed member and simultaneously operated, chasers, and connecting means between the ring and chasers, substantially as described.

FREDERIC E. WELLS.

Witnesses:

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DAVID R. MOWRY.