

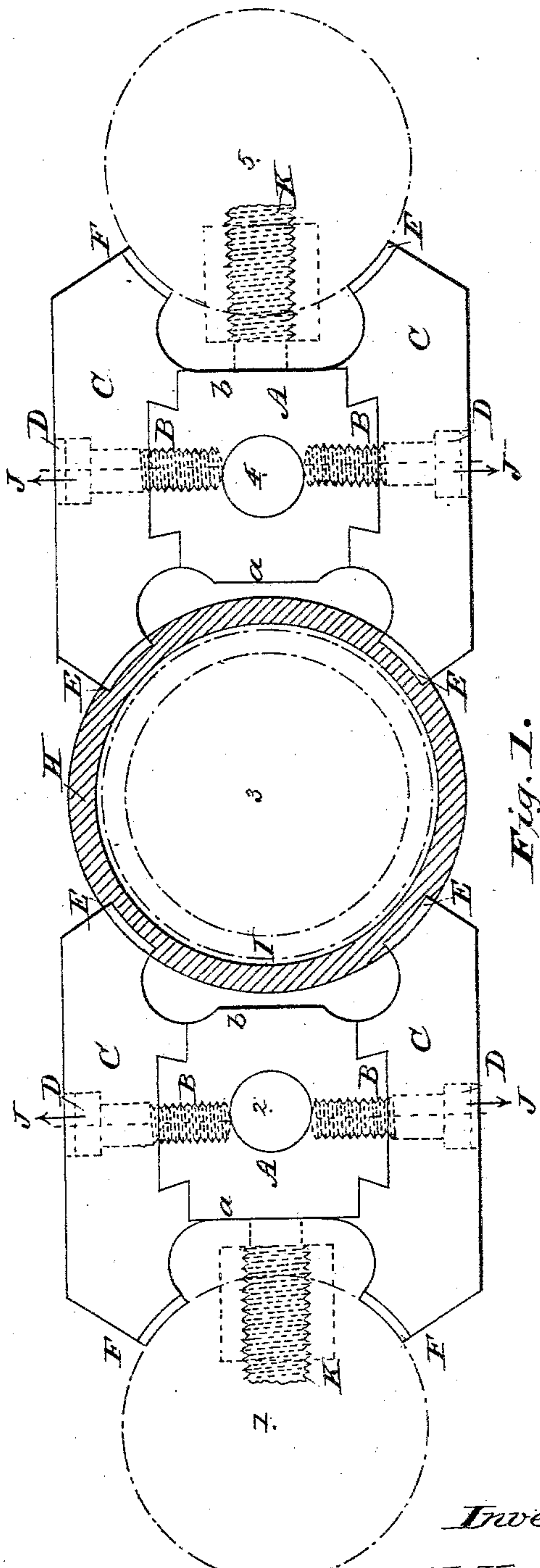
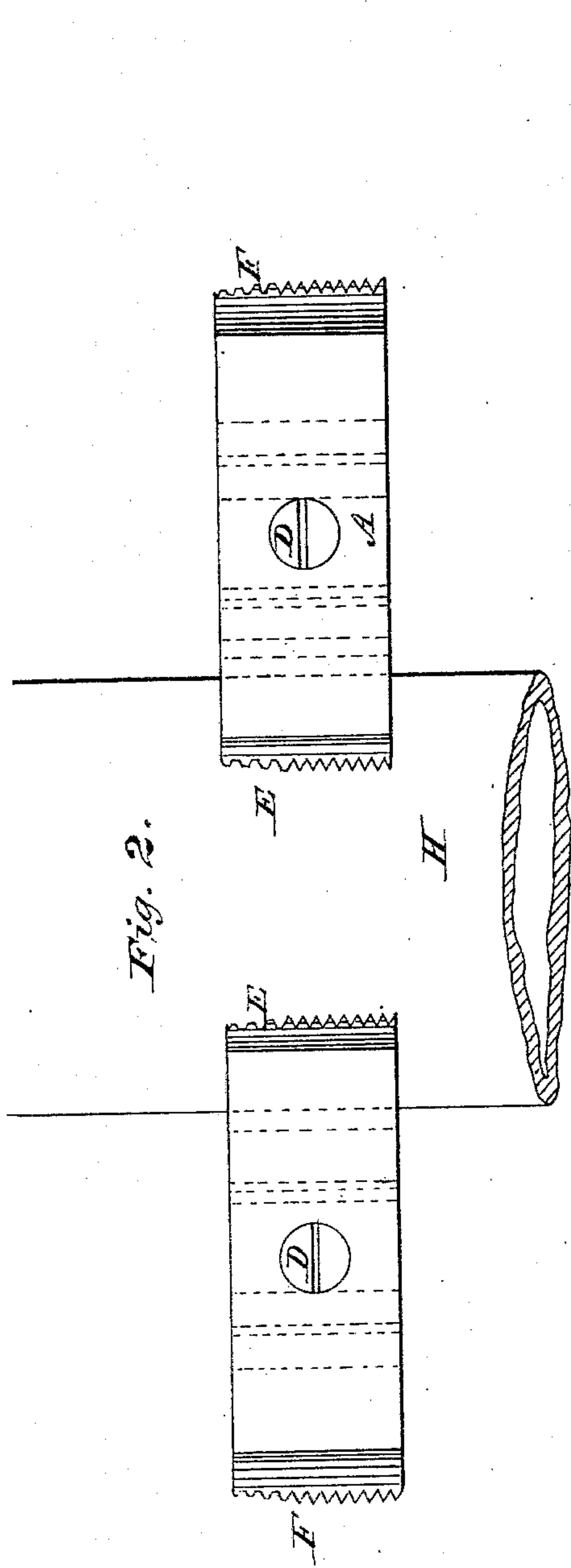
(No Model.)

N. W. VANDEGRIFT.

DIE FOR CUTTING SCREW THREADS ON PIPE.

No. 303,768.

Patented Aug. 19, 1884.



Witnesses:

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# UNITED STATES PATENT OFFICE.

NATHANIEL W. VANDEGRIFT, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR  
TO FRANK ARMSTRONG, OF SAME PLACE.

## DIE FOR CUTTING SCREW-THREADS ON PIPE.

SPECIFICATION forming part of Letters Patent No. 303,768, dated August 19, 1884.

Application filed October 1, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, NATHANIEL W. VANDEGRIFT, a citizen of the United States, residing at Bridgeport, Connecticut, have invented new and useful Improvements in Dies for Cutting Pipe, &c., of which the following is a specification.

My invention relates to certain new and useful improvements in dies for cutting threads on pipe, &c. My invention has for its object to produce the dies at the least possible cost by reason of a saving in expensive material, and also render them capable of ready adjustment in cutting bodies of different sizes; and with these ends in view my invention consists in making each die with a central or body portion of base material—such as iron—and provided with means for securing thereto cutting portions of finer material—such as steel—and in such manner that a pair of dies may be reversed to cut pipe of two different sizes, or entirely different cutting-surfaces substituted, as will be hereinafter fully set forth.

In order that those skilled in the art to which my invention appertains may know how to make and use my improved dies, I will proceed to describe the construction and advantages of the same, referring by letters to the accompanying drawings, in which—

Figure 1 is a face or end elevation of a pair of my improved dies with an interposed pipe being operated upon, (shown in cross-section,) the broken lines inside of the pipe shown in section being intended to indicate a pipe of smaller diameter, as will be hereinafter more fully referred to; and Fig. 2 is a plan or top view.

Similar letters indicate like parts in both figures.

The dies are composed of center portions, A, formed of base material—such as iron—and provided on two of its edges with dovetails B. The cutting portions C are made of steel with grooves adapted to fit the dovetails, B, or vice versa, over which they are slipped, and held in proper relation by transverse screws or bolts D. As will be observed the portion C may be readily made of rectangular pieces of steel of much smaller dimensions than

would be required to make a die in one piece, 50 and they are so made that when placed in position upon and secured to the central body portion, A, the cutting-surfaces E E are farther apart than the cutting-surfaces F F. The broken-line circles G G at each end of Fig. 1 55 are struck from a center, which is also the center of the line upon which the threads F F are cut. I have marked these several centers beginning at the left 1 2 3 4 5, respectively, for the convenience of reference hereinafter. The 60 centers 2 and 4 are the true centers of the two body portions A A, and the centers 1 and 5 are the true centers of the cutting-surfaces F F. The center 3 is the center of the work to be operated upon, and is equidistant from the 65 centers 2 and 4, so that it will be seen that when the dies are arranged, as seen at Fig. 1, in a suitable head or holder to cut a pipe or rod, as illustrated by the sectioned pipe H, the cutting-surfaces E E will traverse the true 70 circumference of said pipe, and when a smaller pipe, such as shown in broken lines I, is to be operated upon the dies are reversed upon their centers 2 4, and the cutting-surfaces F F will be equidistant from the center point, 3, of the 75 smaller pipe. It will be seen that while the centers 2 and 4 are the centers of the two body portions A A, they are not the centers of the steel cutting portions C C, the difference between them being illustrated by the parallel 80 dotted lines seen at Fig. 1. The points J (indicated by the arrows) are the gage-marks of the dies, and, as will be seen, pass through the centers 2 and 4, and thus the operator is enabled to know when he is cutting pipe stand- 85 ard size. To vary from the standard-marks shows him at once how much above or below standard size he is cutting his pipe or bolt.

It will be particularly observed that the portions C C are of uniform size, and hence they 90 may be hardened regularly and equally—that is to say, the portions shown in the drawings are of a uniform size; and if larger or smaller portions C are made to fit the central body portions, A A, such larger or smaller portions 95 adapted for one set of dies would of course be of uniform size. And it will be readily understood that any number of sets of cutting



portions C C may be made to fit one single pair of bodies or centers A A.

The screws K K (shown at each end of Fig. 1 and as bearing against the outsides of the bodies A A) are merely intended to show supports resting against the dies to hold them to their work, and as the centers 2 4 are equidistant from the edges *a b* of the bodies A, such support K is available, no matter whether the cutting-surfaces E or F are in use.

In manufacturing my improved dies the steel portions C are fixed to the bodies A, and a pair are then fixed in just the position they would occupy when used for cutting, and the threads F F and E E are cut in the points of the steel portions C, so that they are ready for true standard work.

My improved dies may be used in any special or general holder, and, as before described, involve a small proportion only of refined metal or steel as compared with a solid die, and in forming the steel portion but little waste of material takes place.

It will of course be understood that while I have shown the portions C as having different cutting-points E and F, and prefer so to make them, I do not wish to be confined in this particular, as both may be alike.

What I claim as new, and desire to secure by Letters Patent, is—

1. A sectional die composed of a center or body portion, A, (which may be made of inferior material,) provided with dovetails B, and having secured thereto steel cutting portions C, of uniform size, substantially as and for the purposes hereinbefore set forth.

2. The improved adjustable die, consisting of the center portions, A, and steel portion C, connected together as described, the portion C having cutting-points E and F, adapted to cut different standards, and so located upon the body portion C that the centers of motion 1, 3, and 5 shall be equidistant from the centers 2 and 4 of the body A.

3. The sectional die composed of the body A and steel cutting portion C, joined together as described, and provided with gage-marks J on a line passing through the center of the body portion A, as shown and described, and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

NATHANIEL W. VANDEGRIFT.

Witnesses:

ISAAC C. FOWLER,  
FRANK T. STAPLES.