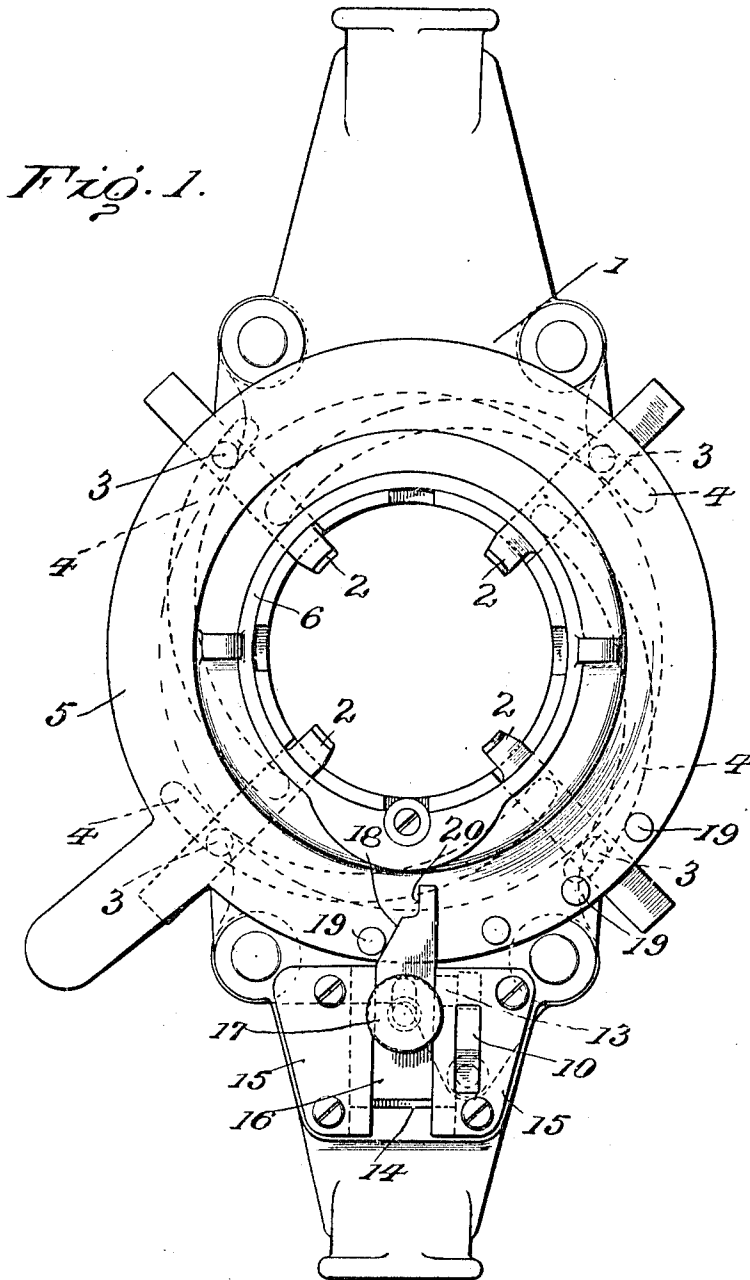


B. BORDEN.
 TAPE THREAD CUTTING TOOL.
 APPLICATION FILED JULY 8, 1908.

950,655.

Patented Mar. 1, 1910.

2 SHEETS—SHEET 1.



Witnesses

for Inventor
Francis J. Hughes

Inventor

Bradford Borden

By

[Signature]

Attorney

B. BORDEN.
TAPER THREAD CUTTING TOOL.
APPLICATION FILED JULY 8, 1908.

950,655.

Patented Mar. 1, 1910.
2 SHEETS—SHEET 2.

Fig. 2.

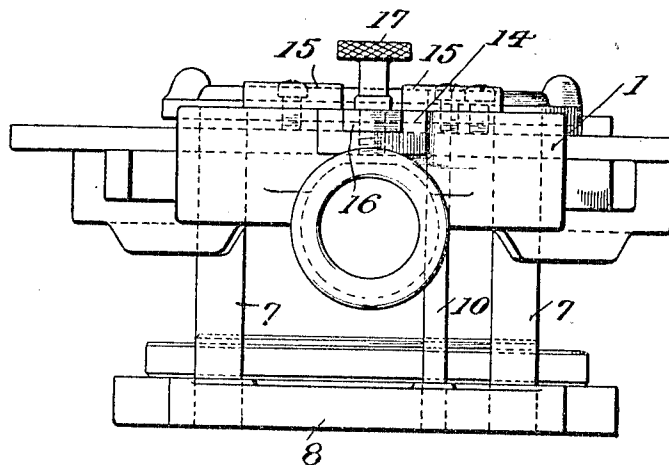
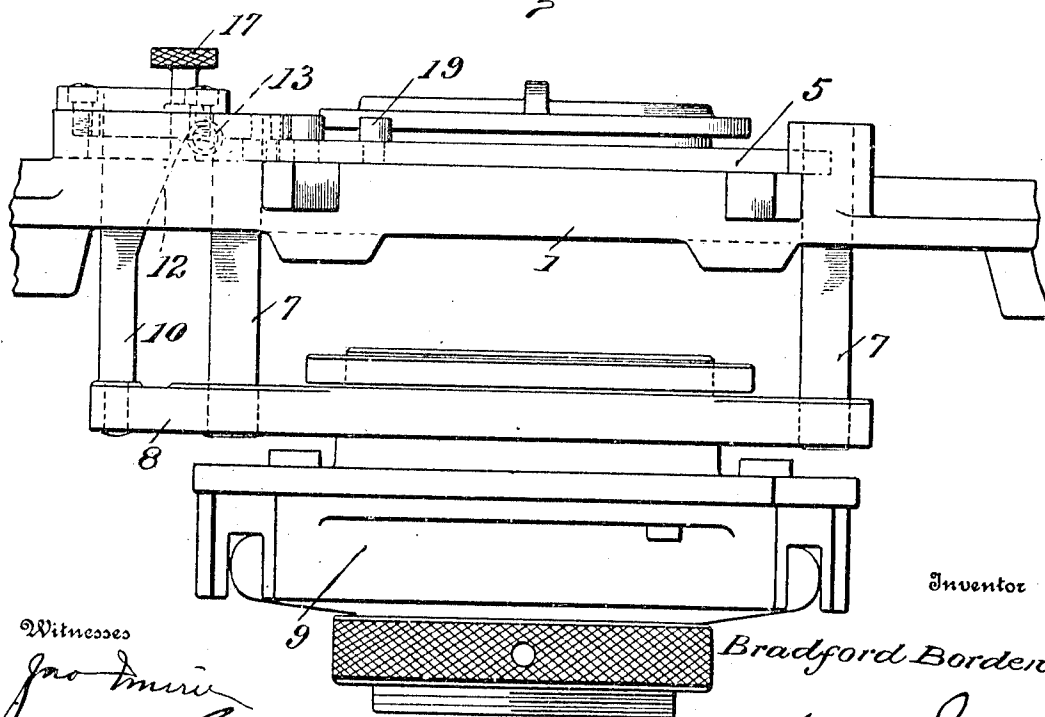


Fig. 3.



Witnesses

Geo. D. Miller
Francis S. Langman

Inventor

Bradford Borden

J. P. Hotchkiss
Attorney

UNITED STATES PATENT OFFICE.

BRADFORD BORDEN, OF WARREN, OHIO, ASSIGNOR TO THE BORDEN COMPANY, OF WARREN, OHIO, A CORPORATION OF OHIO.

TAPER-THREAD-CUTTING TOOL.

950,655.

Specification of Letters Patent.

Patented Mar. 1, 1910.

Application filed July 8, 1908. Serial No. 442,552.

To all whom it may concern:

Be it known that I, BRADFORD BORDEN, of Warren, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Taper-Thread-Cutting Tools; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same.

The objects of this invention are to provide in a taper thread cutting tool means for automatically throwing out the chasers at the end of the cutting operation, such
15 means being capable of adjustment to suit pipes of different sizes; to provide improved means for effecting the recession of the chasers during the threading operation; and to simplify and cheapen the cost of construction.
20

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is an end elevation. Fig. 2 is a side elevation. Fig. 3 is a similar view at right angles to Fig. 2.

Referring to the drawings, 1 designates the housing having the usual sockets for the
30 operating handles; 2 a series of radially arranged chasers mounted in guideways of the housing and carrying each a lug 3 for taking in eccentric slots or grooves 4 of a plate 5 rotatably mounted on the housing
35 and held as against displacement by nut 6 on the central tubular portion thereof. The inclination of the cam slots of plate 5 is such that the thrust or resistance of the chasers against the work tends to rotate
40 such plate and cause the chasers to uniformly recede during the cutting operation. The housing is slidable on a series of guide rods 7 projecting from a ring 8 rotatable on the work holder 9, said housing having open-
45 ings formed therein to accommodate the guide rods.

10 designates a post mounted on ring 8 and extended into an opening in the housing which is shown as formed at the inner end
50 of one of the handle sockets. This post has a beveled face 12 with which engages a pin

or stud 13 projecting laterally from a carrier plate 14 slidably mounted on the housing whereon it is held by overhanging plates 15. Into a central recess of plate 14
55 is set a second plate 16 formed with a slot through which passes a set screw 17 by which the connection between the two plates may be adjusted to regulate the length of the thread to be cut.
60

The plate 16 has a beveled face 18 with which engages any one of a series of studs or abutments 19 projecting from cam-adjusting plate 5, such engagement being
65 caused by the tendency of plate 5 to rotate under the outward thrust of the chasers against the work. As the housing travels inwardly, toward the work holder, during the cutting operation, the plates 14 and 16
70 move outwardly as the pin 13 travels over the beveled face of post 10, the outward movement of such plate being caused by the pressure of one of the abutments 19 of the adjusting plate 5. The recession of plate
75 16 permits the adjusting plate 5 to gradually rotate relatively to the housing, and by reason thereof the several chasers are caused to gradually and uniformly recede and thus effect the cutting of a taper thread.

The length of each thread so cut by the
80 chasers may be regulated by adjusting plate 16 on the carrier plate 14. The end of the beveled face of plate 16 terminates abruptly in a cut-out 20 so that as the abutment previously in engagement with such beveled
85 face enters such cut-out the chasers will be moved out of engagement with the pipe which they have been threading. In other words, as the cutting operation is completed the chasers will be automatically thrown
90 out of engagement with the pipe or other object. In accomplishing this result it is not necessary that threads of uniform lengths be cut on pipes of different sizes, since the length of each thread is controlled by the
95 adjustment of plate 16 relatively to the carrier plate 14.

I have shown the adjusting plate 5 as provided with four separate stops or abutments 19 for engaging the beveled face of plate 16,
100 thus providing for threading four different sizes of pipes. It is manifest, however, that

the capacity of the tool may be increased or lessened by the number of abutments. Likewise other changes may be made in the construction of the parts without departing
5 from the spirit of my invention. Instead of providing the adjusting plate with a series of abutments it may be formed with a series of openings in any one of which a single stud or abutment may be fitted.

10 In practice, the chasers are adjusted according to the size of the pipe to be threaded, and the abutment conforming to that size is positioned against the beveled face of plate 16. As the threading operation proceeds,
15 and the housing travels inwardly over the guide rods 7, the carrier plate 14 by the pressure of the abutment against the beveled face of plate 16 will recede as the pin 13 travels over the beveled face 12 of post 10. The
20 recession of plate 16 permits adjusting plate 5 to turn axially independently of the housing and by reason of the eccentric connection between such plate and the chasers the latter will be caused to gradually and uni-
25 formly recede. As the cutting operation is completed the abutment upon entering cut-out 20 will permit plate 5 to turn sufficiently to disengage all of the chasers from the pipe and thus allow the latter to be removed with-
30 out interference from the chasers.

I claim as my invention:—

1. In a taper thread cutting tool, the combination with a housing, a work-holder, and a series of radially movable chasers, of a
35 chaser-engaging plate rotatable with, and also relatively to, the housing and constructed to interlock with the chasers to cause them to uniformly recede during the cutting operation, a device mounted on the
40 housing and movable on a plane parallel with that of the chaser-engaging plate for permitting the gradual rotation thereof relatively to the housing, and means rotatable with the housing for regulating the move-
45 ment of said device during the cutting operation.

2. In a taper thread cutting tool, the combination with a housing, a work-holder, and a series of radially movable chasers, of a
50 chaser-engaging plate rotatable with, and also relatively to, the housing and constructed to interlock with the chasers to cause them to uniformly recede during the cutting operation, an abutment carried by
55 said plate, a second plate mounted on said housing and movable on a plane parallel with that of the chaser-engaging plate for permitting the gradual rotation of the latter relatively to the housing, said second plate
60 having a beveled face with which said abutment is designed to engage, and means rotatable with the housing for regulating the movement of said plate during the cutting operation.

3. In a taper thread cutting tool, the combination with a housing, a work-holder, and a series of radially movable chasers, of a
65 chaser-engaging plate rotatable with, and also relatively to, the housing and constructed to interlock with the chasers to
70 cause them to uniformly recede during the cutting operation, an abutment carried by said plate, a second plate movable on a plane parallel with that of the chaser-engaging plate for permitting the gradual ro-
75 tation of the latter relatively to the housing, said second plate having a beveled face with which said abutment is designed to engage, a cut-out being formed at the termination of such beveled face, and means ro-
80 tatable with the housing for regulating the movement of said second plate during the cutting operation.

4. In a taper thread cutting tool, the combination with a housing, a work-holder, and
85 a series of radially movable chasers, of a chaser-engaging plate rotatable with, and also relatively to, the housing and constructed to interlock with the chasers to cause them to uniformly recede during the
90 cutting operation, an abutment carried by said plate, a second plate movable on a plane parallel with that of the chaser-engaging plate for permitting the gradual rotation of the latter relatively to the hous-
95 ing, said second plate having a beveled face with which said abutment is designed to engage, a carrier for said second plate mounted on said housing, means adjustably connecting said second plate to said carrier,
100 and means rotatable with the housing for regulating the movement of said carrier during the cutting operation.

5. The combination with a housing having openings therein, a work holder, and a
105 series of radially arranged chasers, of a series of rods, a support therefor rotatably mounted on said work holder, said rods being fitted in said openings of the housing to form guides therefor, a chaser-engaging
110 plate rotatable with, and also relatively to, the housing and constructed to interlock with the chasers to cause them to uniformly recede during the cutting operation, and means for permitting such plate to turn
115 relatively to the housing so that the chasers will move uniformly outward during the cutting operation.

6. The combination with a housing, a work holder, and a series of radially ar-
120 ranged chasers, of a chaser-engaging plate rotatable with, and also relatively to, the housing and constructed to interlock with the chasers to cause them to uniformly recede during the cutting operation, an abut-
125 ment carried by said plate, a second plate having a beveled face with which said abutment is designed to engage, a carrier for

said second plate having a lug projecting therefrom, and a post mounted on said work holder and having a beveled face with which said lug is designed to engage and to permit said carrier and second plate to recede during the cutting operation.

In testimony whereof, I have signed this

specification in the presence of two subscribing witnesses.

BRADFORD BORDEN.

Witnesses:

E. MERNER,

R. S. CHILTON, Jr.