L. CASTRACANE.

THREAD CUTTING DIE.

APPLICATION FILED DEC. 26, 1908.

934,139. Patented Sept. 14, 1909.

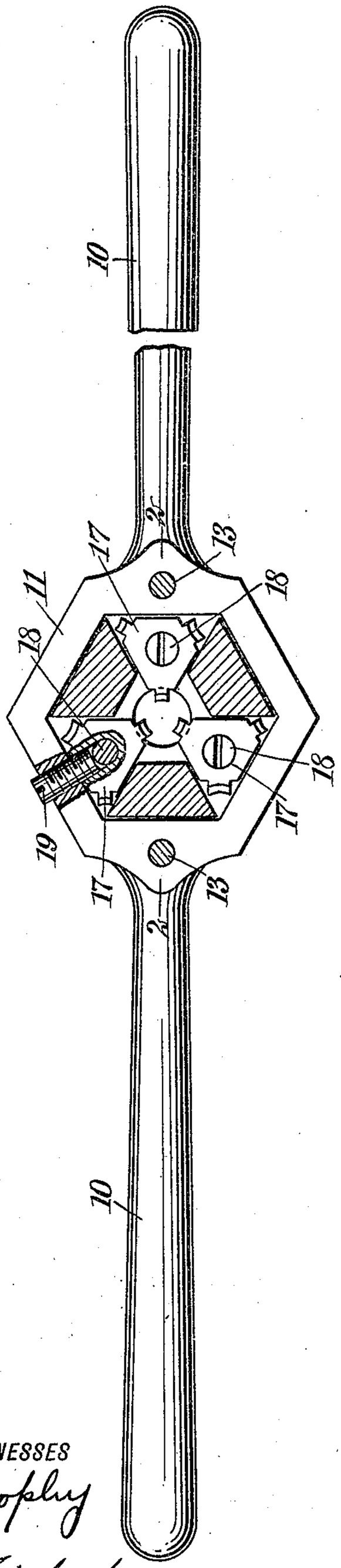

Fig. 1

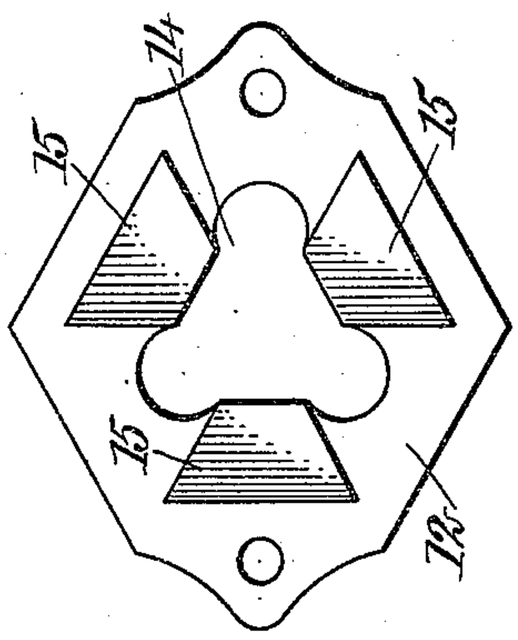

Fig. 4

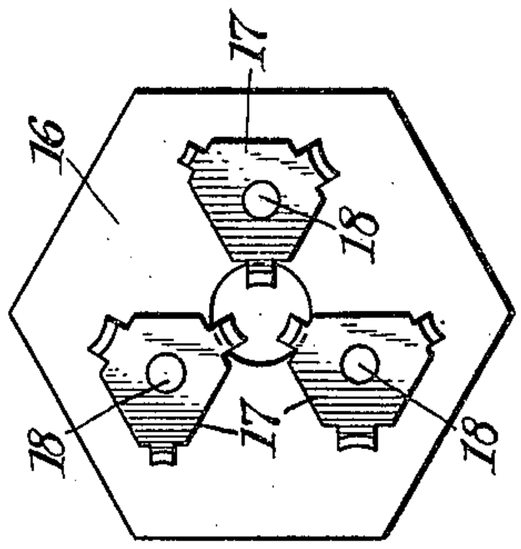

Fig. 3

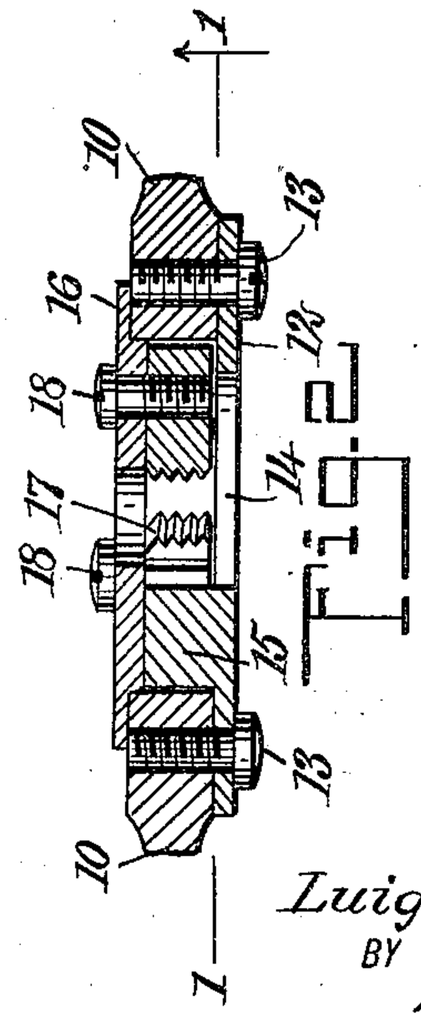

Fig. 2

WITNESSES

J. A. Brophy

C. W. Fairbank

INVENTOR

Luigi Castracane

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

LUIGI CASTRACANE, OF NEW YORK, N. Y.

THREAD-CUTTING DIE.

934,139. Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed December 26, 1908. Serial No. 469,230.

To all whom it may concern:

Be it known that I, LUIGI CASTRACANE, a subject of the King of Italy, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Thread-Cutting Die, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in thread-cutting dies, and more particularly to that type of die in which each die proper is provided with a plurality of cutting faces, whereby the die may be adjusted to different positions to present different faces, and be used in cutting the threads on screws or bolts of different diameter.

The special object of my invention is to provide positive locking means for rigidly and accurately holding the dies in their adjusted position.

In my improved device I provide a plurality of spacing blocks arranged alternately with the dies, so that the latter are positively held against rotation or other movement when in engagement with the spacing blocks, but when the blocks and dies are separated, the latter may be easily and quickly adjusted to present the new faces and again locked by the spacing blocks.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a plan view of my improved stock, the spacing blocks being shown in section, said section being taken on the line 1—1 of Fig. 2; Fig. 2 is a longitudinal section taken on the line 2—2 of Fig. 1; Fig. 3 is a face view of the dies and die-carrying plate; and Fig. 4 is a face view of the spacing blocks and the block-carrying plate.

In a thread cutter constructed in accordance with my invention, I preferably employ a stock having oppositely-disposed handles 10, 10, and a central frame or body 11. The frame or body is substantially hexagonal in form and is provided with a hexagonal opening therethrough. The shape and form of this opening are of no particular consequence, although when employing three dies and three spacing blocks, the hexagonal form is the simplest and leaves no unused space therein. It furthermore gives the device a regular and symmetrical appearance.

Covering one side of the opening in the stock is a plate 12, rigidly secured in place by screws 13, and this plate has a central aperture 14 sufficiently large to permit the passage of any bolt or screw which the die is adapted to cut. This plate carries a plurality of spacing blocks 15, preferably three in number, and these are arranged equidistant apart and each presents an outer side for engagement with a corresponding inner side of the opening in the stock. The blocks are substantially in the form of equilateral triangles, although the apex toward the center of each block is cut off or truncated. The adjacent sides of each two blocks if extended, would intersect at the center at an angle of sixty degrees, so that the space between adjacent blocks is equal to the space occupied by the blocks, save at the center portion where the blocks are truncated. A second plate 16 is provided, also preferably hexagonal in form and adapted to engage with the stock upon the opposite side thereof from the plate 12, and this plate also has a central opening through which the bolt or screw may extend. The plate 16 carries a number of dies 17, corresponding to the number of spacing blocks, which in the present instance is three. The dies are substantially in the form of equilateral triangles, and each is pivoted to the plate at its center by corresponding pivot pins 18, which may, if desired, be in the form of screws. Each corner or apex of each die is cut off or truncated and is provided with thread-cutting teeth of the usual character. The extent to which the different apexes of each triangle are cut off varies, but one apex of each die has a corresponding apex on each of the other dies, so that when all of the dies are positioned with corresponding thread-cutting apexes at the center, threads may be cut on a bolt of one diameter, while if each die be rotated about its pivot through one hundred and twenty degrees, a larger or smaller space will be provided between the apexes at the center and a bolt of a different diameter may have threads cut thereon. The dies are spaced equal distances apart and their sides, if projected, intersect at angles of sixty degrees. Thus, when the plates 12 and 16 are secured in place on opposite sides of the stock, the spacing blocks and the dies are arranged alternately and the sides of the

blocks engage with the sides of the dies to positively prevent any rotation or other movement of the latter. It is thus not necessary that the dies be held against rotation by the screws, for the latter may serve merely as pivot pins, and the blocks and plate 16 serve as the sole means for preventing movement of the dies when the parts are assembled. The plate 16 may be held to the stock in any suitable manner, as, for instance, a small set screw 19 may extend through one side of the stock into the hexagonal opening and into one of the dies, as illustrated in Fig. 1. This prevents the accidental displacement of the parts when the tool is in use.

I do not wish to limit myself to three dies and three spacing blocks, as it is evident that a larger or smaller number of each could be employed.

Various changes may be made in the specific construction illustrated and within the scope of the appended claims, without departing from the spirit of my invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A thread cutter, comprising a stock having a hexagonal opening therethrough, and a plate secured to one side of said stock and having a plurality of dies carried thereby, each of said dies being substantially triangular in cross section and all of said dies being rotatable in respect to said plate and about parallel axes and fitting in engagement with alternate sides of said hexagonal opening to normally prevent said rotation.

2. A thread cutter, comprising a stock having a hexagonal opening therethrough, a plate secured to one side of said stock and having a plurality of dies carried thereby, each of said dies being substantially triangular in cross section and all of said dies being rotatable in respect to said plate and about parallel axes and fitting in engagement with alternate sides of said hexagonal opening to normally prevent said rotation, and spacing blocks within said hexagonal opening and adjacent the remaining sides for additionally preventing rotation of the dies.

3. A thread cutter comprising a stock having an opening therethrough, a plate secured to one side of said stock and having a plurality of dies carried thereby, and a plate secured to the other side of said stock and having a plurality of spacing blocks also extending into said opening and arranged alternately with said dies, said dies being rotatable about parallel axes and normally locked against rotation by the walls of said opening and by said spacing blocks.

4. A thread cutter comprising a stock having an opening therethrough, a plate secured to one side of said stock and having a plurality of dies carried thereby, each of said dies being substantially triangular in cross section and presenting a plurality of cutting faces, and all of said dies being rotatable about parallel axes and normally locked against rotation by the walls of said opening, and a plate secured to the other side of the stock and having a plurality of substantially triangular spacing blocks also extending into said opening and arranged alternately with said dies and serving to additionally lock said dies against rotation.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LUIGI CASTRACANE.

Witnesses:

CARL C. ESPOSITO,

MICHELE SCOTTO.