

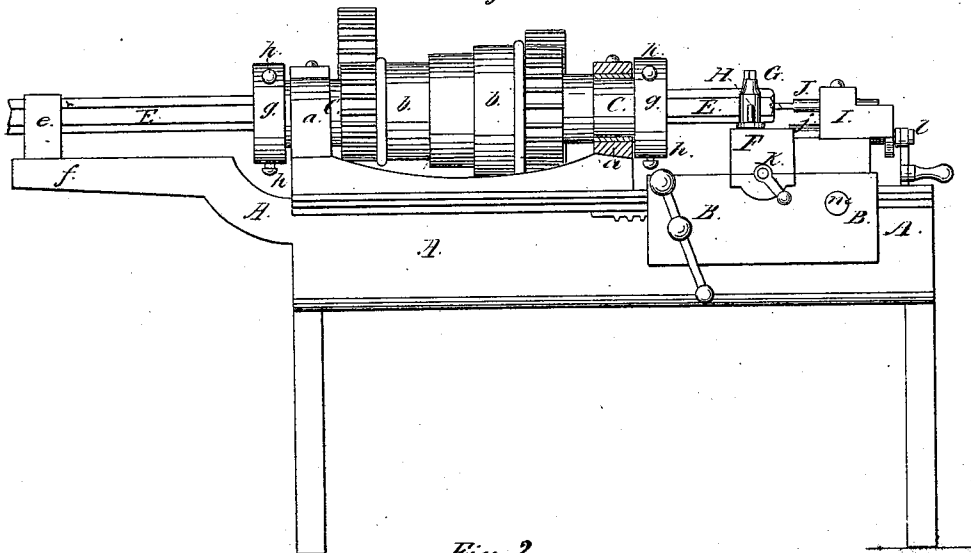
*F. Rheydt.*

*Making Screw Nuts.*

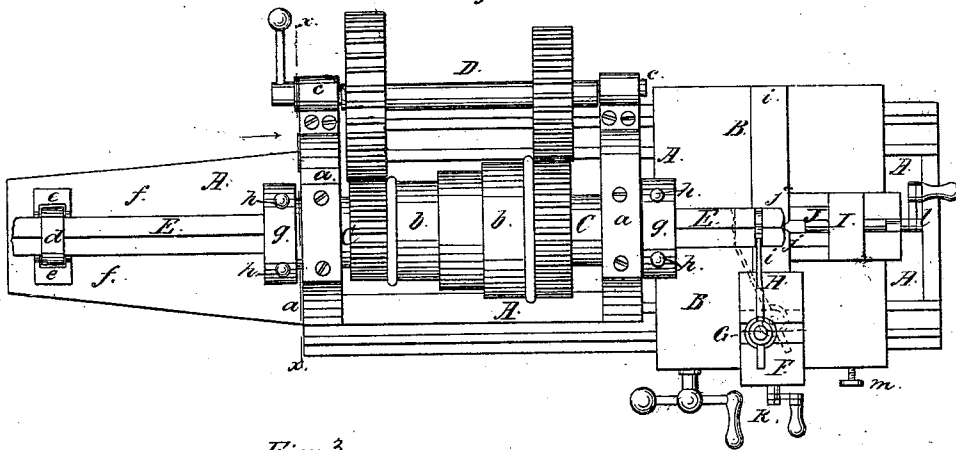
*N<sup>o</sup> 85,399.*

*Patented Dec. 29, 1868.*

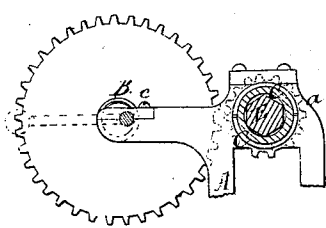
*Fig. 1.*



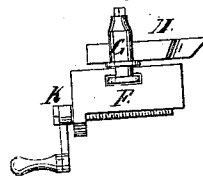
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



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# United States Patent Office.

FERDINAND RHEYDT, OF CHICAGO, ILLINOIS.

Letters Patent No. 85,399, dated December 29, 1868.

## IMPROVEMENT IN MAKING SCREW-NUTS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, FERDINAND RHEYDT, of Chicago, in the county of Cook, and State of Illinois, have invented a new and improved Machine for Making Nuts; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a side elevation, partly in section, of my improved nut-making machine.

Figure 2 is a plan or top view of the same.

Figure 3 is a detail transverse section of the same, taken on the plane of the line *z z* fig. 2.

Figure 4 is a detail side view of the cutting-tool and its carriage.

Similar letters of reference indicate like parts.

The object of this invention is to construct a machine on which screw-nut blanks can be shaped on and cut from prismatic bars, which have already the requisite hexagonal, octagonal, or other desired cross-section of the nuts to be made. The tedious and laborious process of forming the nuts between dies is thereby dispensed with, and neater work produced.

The invention consists in the general arrangement of the machine, and more particularly in the application and construction of the cutter, which is not only to sever the perforated and shaped nut from the end of the bar, but which also serves to round or bevel the edges of the face of the nut while the same is yet on the bar.

This cutter is fastened to a transversely-sliding support, and is itself longitudinally adjustable in said support, and can be turned therein.

When it is set obliquely against the end of the rod from which the nuts are to be cut, its upper edge will serve to bevel the edges of the end of the rod, while, when it is set at right angles to the said rod, it will serve to cut the nut from the rod.

A, in the drawing, represents a suitable metallic or other frame, which has a bed for the support of a longitudinally-sliding carriage, B, that is adjusted by means of pinion and rack, or by other equivalent means.

The carriage B is arranged upon the front part of the frame A.

In rear of it are, on the frame, two supports, *a a*, for a tubular spindle, C, which has the loose pulleys *b*, and which, by means of an auxiliary shaft, D, receives the requisite motion, the said auxiliary shaft being laterally adjustable by an eccentric, *e*, as indicated in fig. 3.

Through the hollow spindle C is fitted a prismatic rod or bar, E, made of iron, or such other metal or material from which the nuts are to be made.

The rear end of the said bar E is fitted through a ring or rings, *d*, rolling in supports, *e*, on an extension, *f*, of the frame A.

The ring *d* has a polygonal aperture, corresponding

to the cross-section of the bar E, so that the said ring must revolve with the bar.

The object of the said ring or rings is to steady a long bar, and to prevent it from vibrating.

The aperture of the hollow spindle is, or may also be, of the shape of the rod E, so that, as the spindle is revolved, the rod will also be turned with it.

Longitudinal adjustment of the bar E is allowed, and displacement prevented, by means of two rings, *g g*, that are fastened to the bar directly in front and rear of the two supports *a*, respectively, as shown.

These rings are fastened to the bar by means of screws, *h h*. When the bar is to be moved further forward, the screws are loosened, and the bar is then free to be pulled ahead.

The front end of the bar E projects through the spindle and front support, as shown.

Upon the carriage-face B is formed a transverse projecting dovetail tenon, *i*, and in front of that a short longitudinal tenon, *j*, as shown.

On the tenon *i*, or its equivalent, is fitted a small transversely-sliding carriage, F, which is adjustable by means of a screw, K, or otherwise, as desired.

In the carriage F is a groove, parallel to the bar E. In this groove stands a round pin, G, from which a cutting-tool or chisel, H, with inclined cutting-edge, shown in fig. 4, projects.

The pin G can be turned in the carriage F, and can be longitudinally adjusted in the groove of the same, as well as with the carriage B, and transversely adjusted by means of the screw K, or its equivalent.

When the pin G is turned so that the tool H is at right angles to the bar E, the said tool is used to cut off a portion of the bar, as much as is needed for the nut. This cutting is done by gradually feeding the carriage against the revolving bar E.

When the tool H is set obliquely, as shown by red lines in fig. 2, it serves to bevel the edges of the bar, as indicated, so as to produce the bevelled face of the nut.

On the tenon *j*, or its equivalent, is fitted a small longitudinally-sliding carriage, I, which is longitudinally adjustable by means of a screw, L, or its equivalent.

In the carriage I is held a stationary bit, J, in line with the axis of the bar E.

When the bit is, by means of the screw L, fed against the revolving bar E, it will bore a hole of the required diameter into the same, so as to produce perforated nut-blanks.

The tools H and J can operate simultaneously, and consequently the nuts will be rapidly made.

When six or eight nuts have been cut from the bar, it is moved forward, and the operation is thus carried on until the whole bar has been used up, when another one is put into its place.

After a nut has been cut, the carriage B is moved

towards the bar, to bring the tools into the requisite new position. It is then clamped to the frame A by means of a set-screw, *m*.

The thickness of the nut is regulated by the adjustment of the pin G in or on the carriage.

Having thus described my invention,

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

1. The hollow spindle C, in combination with the adjustable cutting and boring-tools, H and J, that are

arranged on the carriage B, substantially as herein shown and described, all operating as set forth.

2. The combination of the hollow spindle C, ring *d*, and rings *g*, with the carriages B, F, and I, and tools H and J, all made, arranged, and operating substantially as herein shown and described.

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Witnesses:

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