

No. 753,629.

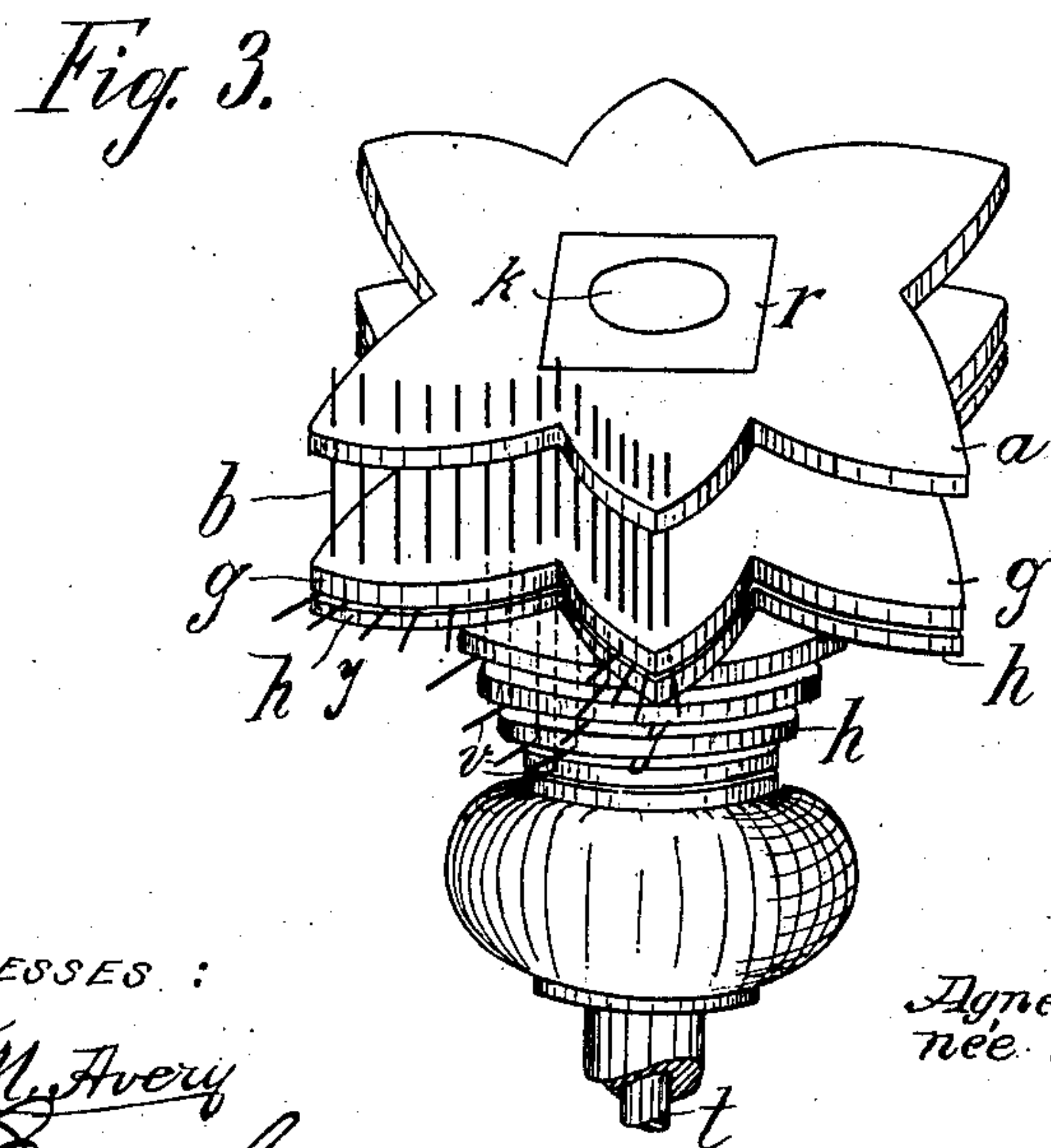
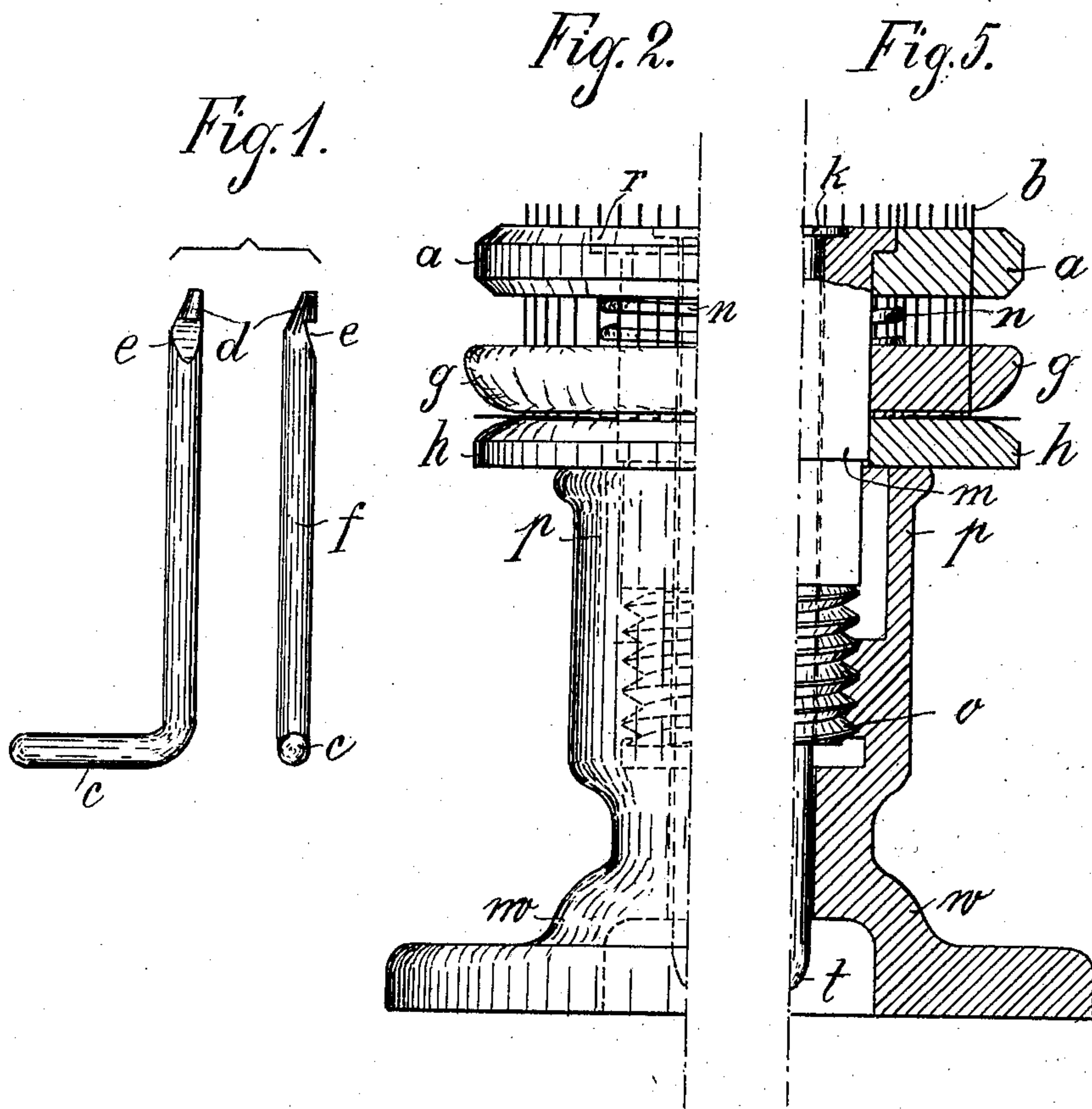
PATENTED MAR. 1, 1904.

A. A. VON RENTHE-FINK.
HOLDER FOR FORMING ORNAMENTAL ARTICLES.

APPLICATION FILED JULY 15, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES :

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T. B. Cavanagh

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Agnes Auguste von Renthe-Fink
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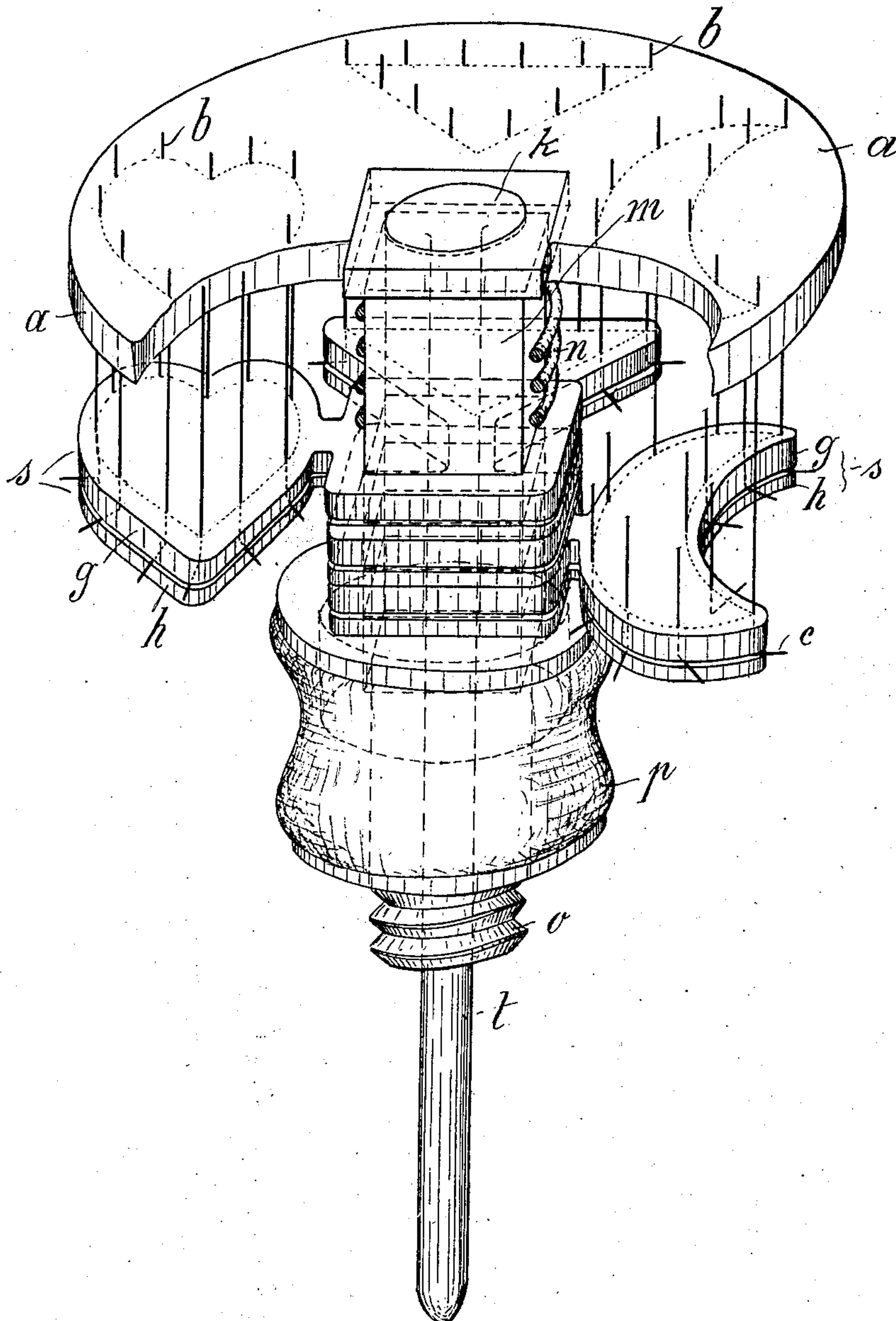
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3 SHEETS—SHEET 2.

Fig 4.



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3 SHEETS—SHEET 3.

Fig. 6.

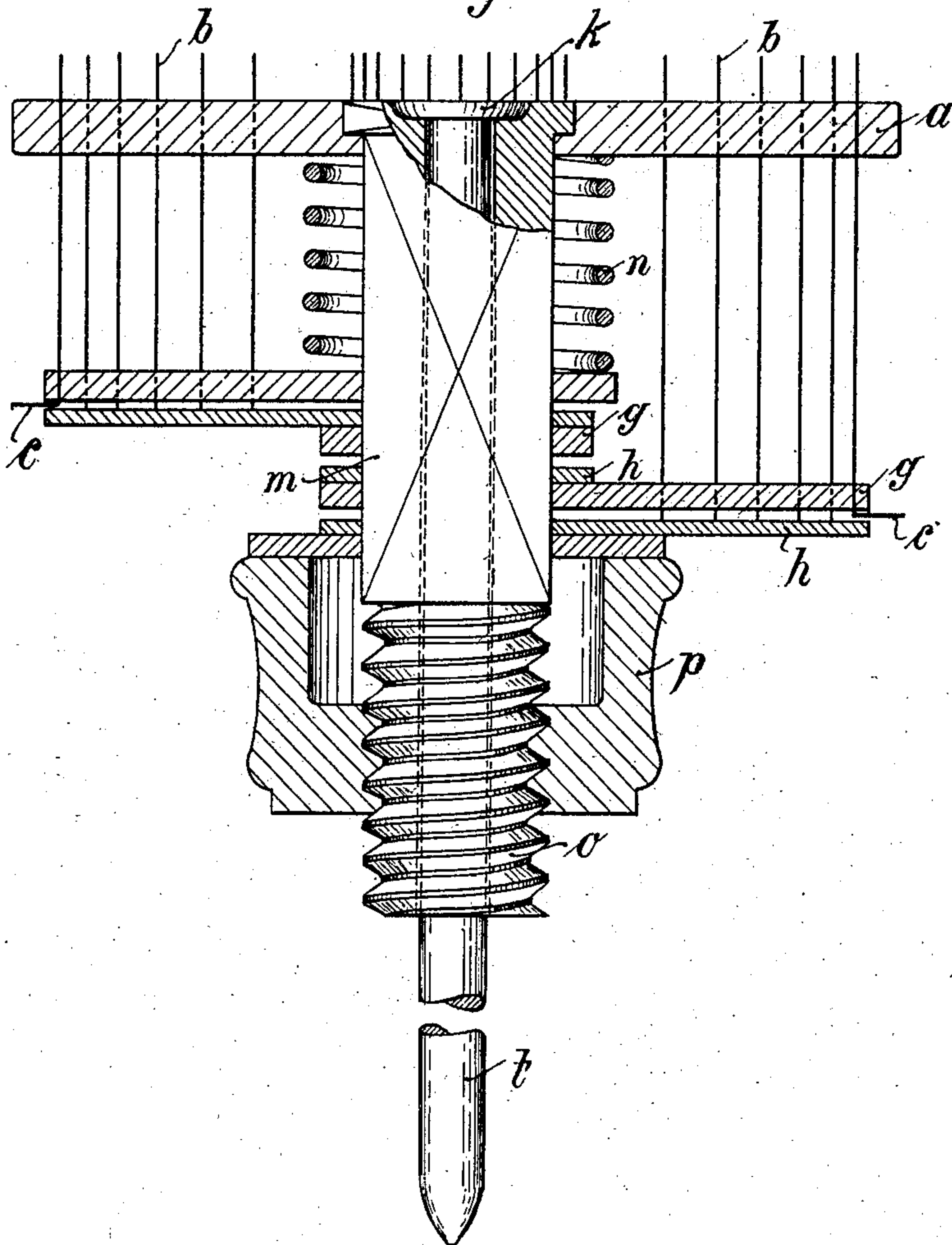
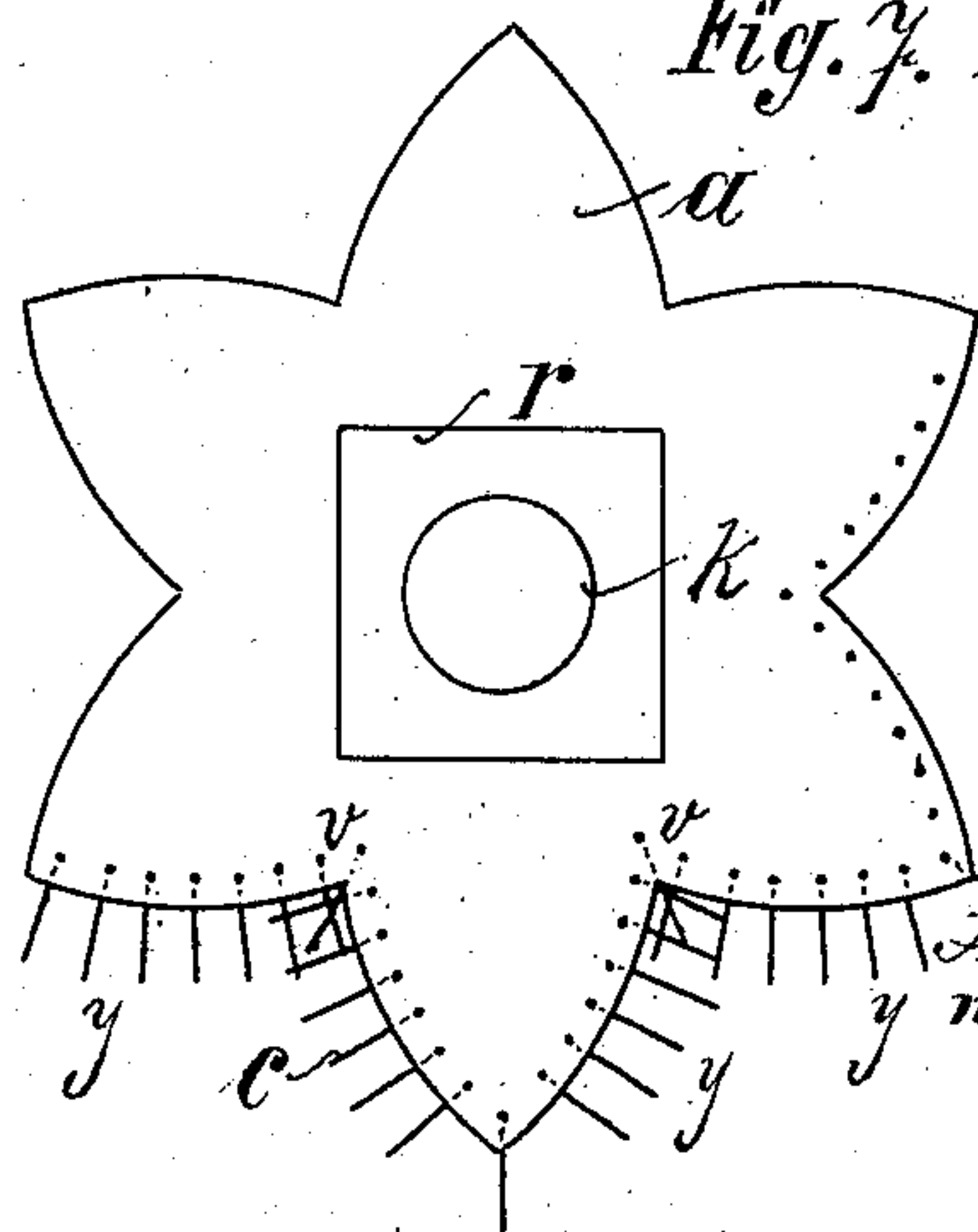


Fig. 7.



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UNITED STATES PATENT OFFICE.

AGNES AUGUSTE VON RENTHE-FINK, OF JENA, GERMANY.

HOLDER FOR FORMING ORNAMENTAL ARTICLES.

SPECIFICATION forming part of Letters Patent No. 753,629, dated March 1, 1904.

Application filed July 15, 1903. Serial No. 165,649. (No model.)

To all whom it may concern:

Be it known that I, AGNES AUGUSTE VON RENTHE-FINK, a subject of the King of Prussia, Emperor of Germany, residing at 14 Fürstengraben, in the city of Jena, Grand Duchy of Saxe-Weimar and German Empire, have invented a certain new and useful Holder for Forming Ornamental Articles, of which the following is a specification.

10 This invention has reference to an apparatus for the manufacture of ornamental articles from interlaced threads, strips, or bands of suitable material of any kind by engagement thereof with needles or pins which are
15 suitably secured in a working or pattern plate, and it especially refers to means whereby the work-holding needles or pins may be moved with the work, so as to allow of its easy removal and of regulating the tension of the
20 threads or bands during the working. This is accomplished in my invention by so arranging the work-holding needles that they are axially displaceable and may be locked in any desired position with relation to the work or
25 its supporting-plate, the removal of the work being assisted by a special shape of the said needles, whereby they may be made to easily engage the thread or band and to become disengaged therefrom.

30 The apparatus is shown by way of example in three modifications in the accompanying drawings, in which—

Figure 1 shows a front and side view of one of the needles employed. Fig. 2 shows the apparatus for changing the position of the needles. Figs. 3 and 4 show perspective
35 views of other arrangements of the apparatus shown at Fig. 2. Fig. 5 is a vertical section of the modification shown in Fig. 2. Fig. 6 is a similar section of Fig. 4. Fig. 7 is a
40 plan view of Fig. 3.

The needles *b*, which are arranged according to any desired pattern, pass with their tapered ends rotatably through the working
45 or pattern plate *a* and in the arrangement shown are secured in position by being passed through one or more perforated guide-plates *g*. The pattern-plate *a* is connected to the guide-plates by a spindle *k*, which may, for
50 instance, be made of square or polygonal

section for part of its length—at *m*, for instance, Fig. 4—for preventing rotation of the plates *a* or *g*; but it is obvious that any other suitable means for preventing rotary movement and for allowing axial movement only
55 may also be used in place thereof. With their lower ends the needles rest, preferably, on the pressure-plates *h* or *s*, respectively, which, by means of a suitable pressing device—such, for instance, as a screw-nut *p*, mounted
60 on the threaded lower end *o* of the spindle—can be shifted against the pressure of a spring *n*, arranged between the pattern-plate and the pressing-plate. The needles may also rest directly on the screw-nut *p*; but
65 in order to prevent the needles resting thereon from being turned by frictional contact with the nut *p* on the rotation of the same there is provided in the arrangement shown in Fig. 2 on the spindle *k* an intermediate
70 pressure-transmitting plate *h*, that is secured against rotary movement and that may be moved longitudinally together with the guide-plates.

The several plates may of course be of any
75 desired shape or configuration corresponding to the different arrangements of the needles, and the length of the latter may be varied.

By raising the needles above the working plate access to all parts of the work and also
80 to its under side may be had, so that it is easy to interlace or combine other kinds of ornamental fabrics or threads with the work or sew or stitch the same. Upon the withdrawal of the needles until their ends are flush with
85 the surface of the pattern-plate the work becomes free to drop off from the needles. In order to facilitate the removal of the work from the needles or pins, the upper ends of the same, which pass through the working
90 plate, are formed with a notch *e* at the end which receives the thread and have in addition a sloping or tapered surface *d*, extending more or less round them. On the stem of the needles or on the lower end thereof there are
95 formed projections or handles *c*, of any suitable shape, by means of which the needles rest upon a suitable moving device, the displacement of which allows of the needles being shifted longitudinally and which projections
100

are so formed that they enable the needles to be turned. By this arrangement on the turning of the needles the work carried thereon will pass out of the notches on to the sloping surfaces, so that on the withdrawal of the needles or the pushing upward of the article this can be removed.

For the purpose of regulating the tension of the threads or bands constituting the work and for facilitating the removal of the finished work I make use of one or more rods *t*, which may be projected through the pattern-plate *a* and which are pressed from underneath against the work. In the preferred form of construction shown in Fig. 2 of the drawings the rod *t* is centrally arranged, the spindle or shaft *k* being made hollow and the rod *t* being placed in its interior. The stem *t* is suitably enlarged at its upper end at *z*, which in the normal position is flush with the upper surface of the pattern-plate *a*. By pushing up this rod the work placed on the pattern-plate *a* or part of the same may be stretched or tightened to any required degree by being pressed upward while being held at the periphery by the needles, and when completed and released by the turning of the needles or the withdrawal of the pattern-plate *a*, respectively, the further raising of *t* will raise up the article from the pattern-plate for removal therefrom. In the case of articles consisting mainly of threads passing diametrically across the pattern-plate a needle may advantageously be inserted in the rod *t* as a guide for passing the threads across the middle of the plate.

A foot *w*, which is screwed on to the threaded end *o* of the shaft *k*, is provided to enable the apparatus to be conveniently placed upon a table. The foot may also be made integral with the pressure-producing nut *p*, as shown in Figs. 2 and 5 of the drawings.

In the case of patterns or ornamental designs presenting angular or vandyked edges, as illustrated in Figs. 3 and 7 of the drawings, the handles or projections *c* on the lower ends of the needles would be prevented from turning for a sufficient extent as their planes of rotation intersect the projections, hitting against each other and against the stems *t* of the contiguous needles. This difficulty is overcome by arranging the handles or projections in different parallel planes, each plane preferably containing the handles or projections of those needles which show the same relative distance to the apex of the receding or projecting angle. Thus the projections *c* of the needles *v* are placed in one and the same plane. Those of the needles *y* are placed in another plane parallel thereto, and so on in succession. With this arrangement all the needles are carried through one common guide-plate *g*; but there are provided several parallel pressure-plates *h* underneath each other corresponding to the different planes and on which the projections *c* of the needles are

made to rest. The different plates are of course in this case also mounted on the shaft or spindle *k* and are moved and retained in position in the manner hereinbefore described.

Where it is desired to utilize one and the same pattern-plate for ornaments of different shape, it is desirable in order to avoid the necessity of interchanging the pattern-plate to form the ornaments of a combination of separate sections *s*, of which each one represents, for instance, a leaf, a triangle, a polygon, or the like. This may be effected by mounting any desired number of pairs of segmental plates *s* corresponding in number and outline to the sections of the ornamental work on the shaft or spindle *k*, each of these pairs being composed of two parallel plates, the upper one of which, *g*, serves as a guide-plate, while the lower one, *h*, constitutes the corresponding pressure-plate. In the preferred form (shown in the drawings) these pairs of segmental plates *s* are arranged in different parallel planes, and the needles are in this case also arranged in corresponding sections of different needle lengths, which rest with their projections *c* at corresponding different levels upon the several segmental pressure-plates *h*, which are shifted longitudinally by a common nut *p* or other pressing device against the action of the spring *n*, as shown in Figs. 4 and 6, as described in the preceding examples.

In order to secure the pattern-plate *a* against axial displacement, the upper end of the shaft or spindle *k* is provided with suitable projections or enlargements, as at *r*, or equivalent means engaging with corresponding recesses in the pattern-plate.

After the work has been completed it can be removed by withdrawal of the needles and the pushing forward of the rod *t*, or, in the case of notched needles, these are turned by passing the finger along the periphery of the pressure-plates or of the segmental pair of plates *s*, whereby the projections *c* are seized and turned, so that the work becomes disengaged from the notches or recesses *e* and passes on to the inclined parts *d* of the needle-points. On withdrawing the needles, by lowering the pressure-plates on which they rest, the work becomes free to be removed without being injured or distorted.

The above-described apparatus is applicable for the production of rosettes, edgings, leaf-patterns, and the like, as also for the application of ornamental work to buttons, the production of ornamental straw or similar work, such work being produced by this means in an exceedingly uniform manner without risk of distorting the work on the removal thereof.

The apparatus may be used for work made either by hand or by machinery.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. An apparatus of the class described, comprising a plurality of parallel plates movable

relative to each other, a plurality of longitudinally-displaceable needles passing through certain of said parallel plates, and means for securing the uppermost plate against axial displacement.

2. In apparatus for the production of ornamental work from thread or band like fabrics, a pattern or working plate of suitable form, pressure-producing means arranged parallel to said pattern-plate, a spindle or shaft connecting the pressure means and the pattern-plate and axially-displaceable needles resting on said pressure-producing means and passing through said pattern-plate.

3. In apparatus for the production of ornamental work from thread or band like material, an axis or shaft, plates movable and interchangeably arranged on said shaft, axially-arranged needles of varying lengths passing through certain of the plates and resting with their lower ends upon certain other plates, the lower ends of the needles being arranged in different planes, substantially as described.

4. An apparatus of the class described, comprising a series of perforated plates, one of said plates being adapted for use as a work-supporting plate, means for varying the distance between such plates and for securing the latter in position, means connecting said plates, and pressure-rods projecting through apertures in the work-supporting plate.

5. In apparatus for the production of ornamental work from thread or band like material, a hollow axis or shaft, perforated and unperforated plates movable on said shaft, axially-displaceable needles engaging with the perforated plates, and a longitudinally-movable stem extending through the hollow shaft.

6. Apparatus for the production of ornamental work by the interlacing of threads or strips of any material comprising in combination parallel plates movable in relation to each other, means to connect said plates and a suitable number of longitudinally-displaceable needles passing through said plates, the upper ends of said needles being notched or recessed and being tapered off oppositely

to said recess or notch and suitable projections on the stems of said needles.

7. Apparatus for the production of ornamental work by the interlacing of threads or strips of any material comprising in combination parallel plates displaceably arranged in relation to each other and a number of longitudinally-displaceable needles passing through a suitable number of said parallel plates and means to secure the upper plate against axial displacement, and means to secure the plates against rotary movement, substantially as described.

8. In an apparatus for manufacturing ornamental work from thread or band like material, in combination a shaft, a work-support engaging with said shaft and a suitable number of axially-displaceable spring-pressed pairs of parallel plates of suitable shape on said shaft, means on said shaft to retain said plates in position, axially-displaceable needles passing through the work-support, and through one of each pair of plates and resting with their lower ends on the lower one of each pair of plates.

9. In an apparatus of the class described, the combination of a plurality of plates movable relatively to each other, and a series of longitudinally-movable needles passing through certain of said plates, substantially as set forth.

10. In an apparatus of the class described, the combination of a pattern-plate and pressure-producing means arranged adjacent to said plate, means connecting the pressure means and the pattern-plate and passing through said pattern-plate, and a plurality of needles passing through said plate, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

AGNES AUGUSTE VON RENTHE-FINK,
NEE VON OPPELN-BRONIKOWSKI.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.