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SECTIONAL DIE.

APPLICATION FILED APR. 14, 1909.

955,277.

Patented Apr. 19, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

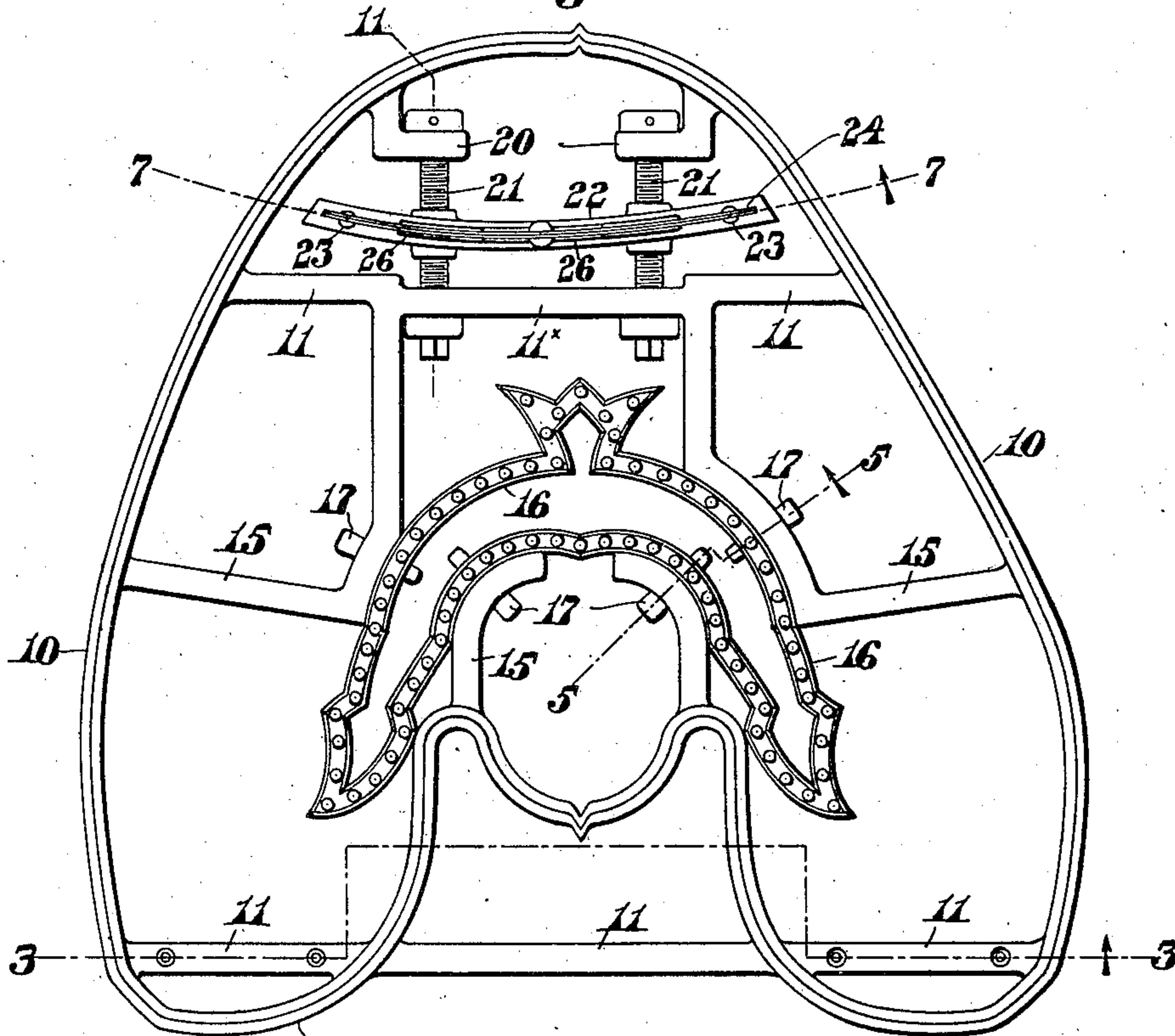


Fig. 2.



Fig. 3.

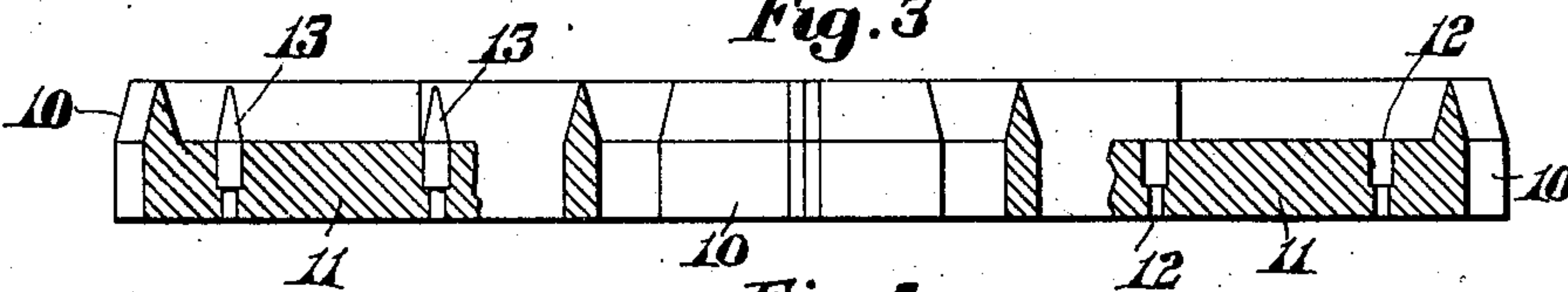


Fig. 4.



Fig. 5.

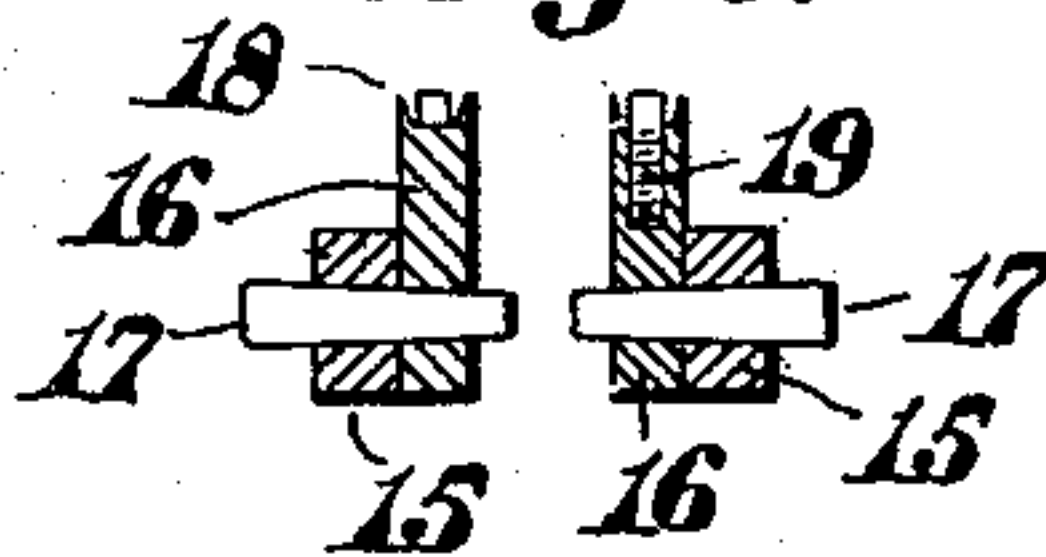


Fig. 6.



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2 SHEETS—SHEET 2.

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Fig. 7.

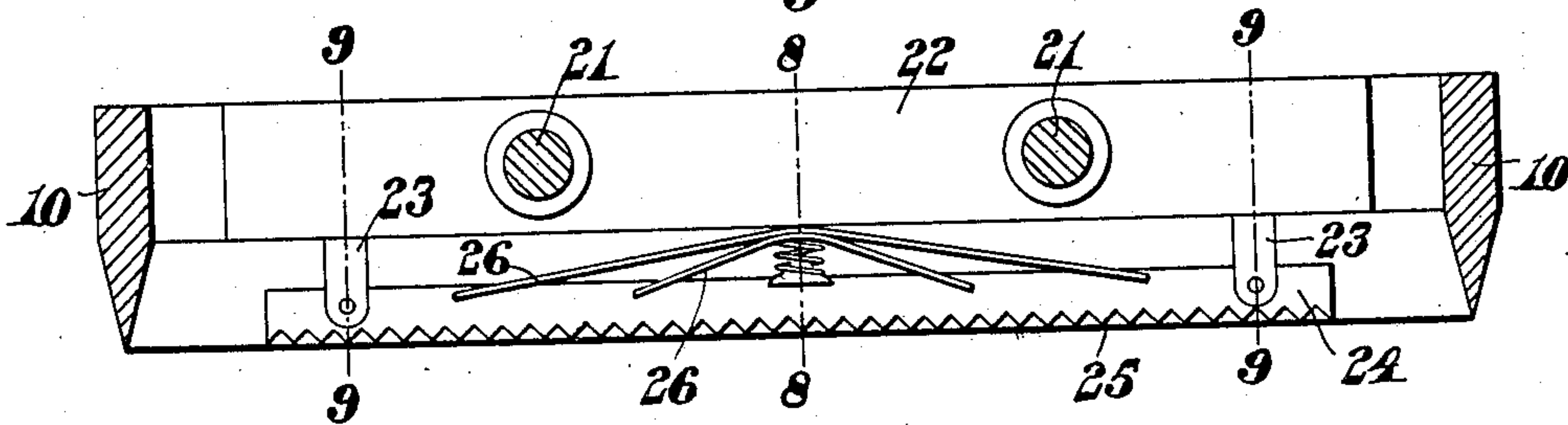


Fig. 8.

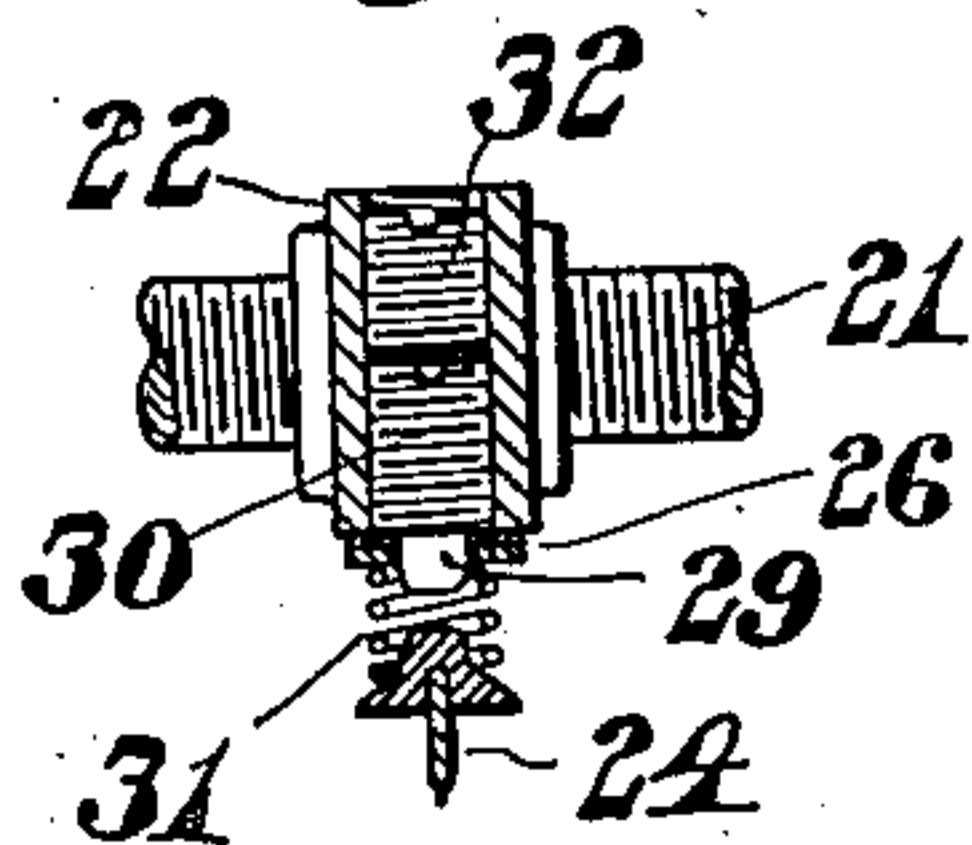


Fig. 9.

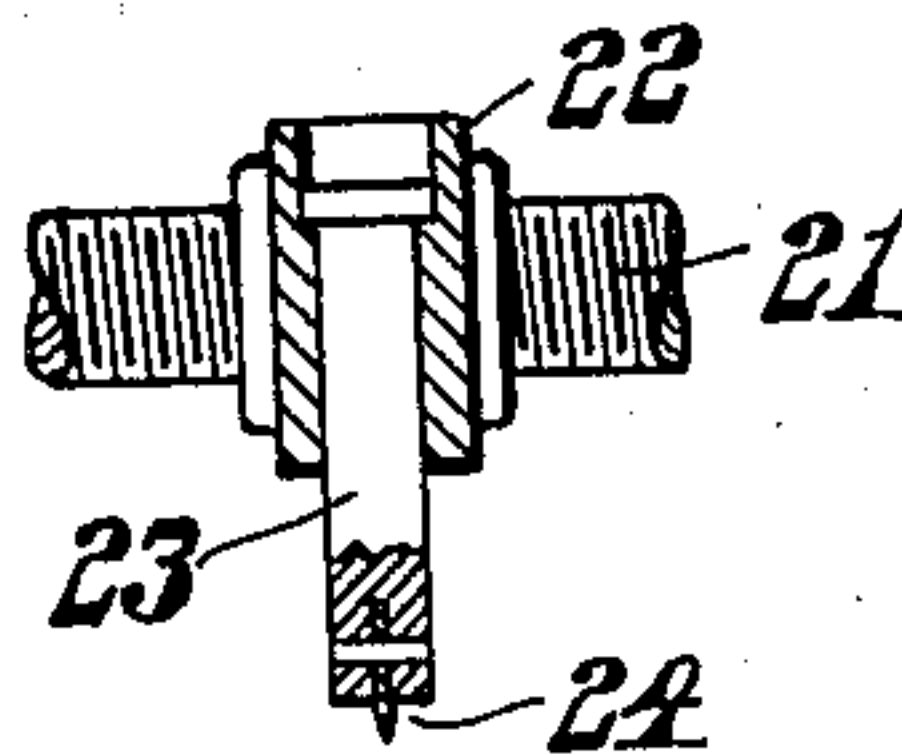


Fig. 10.

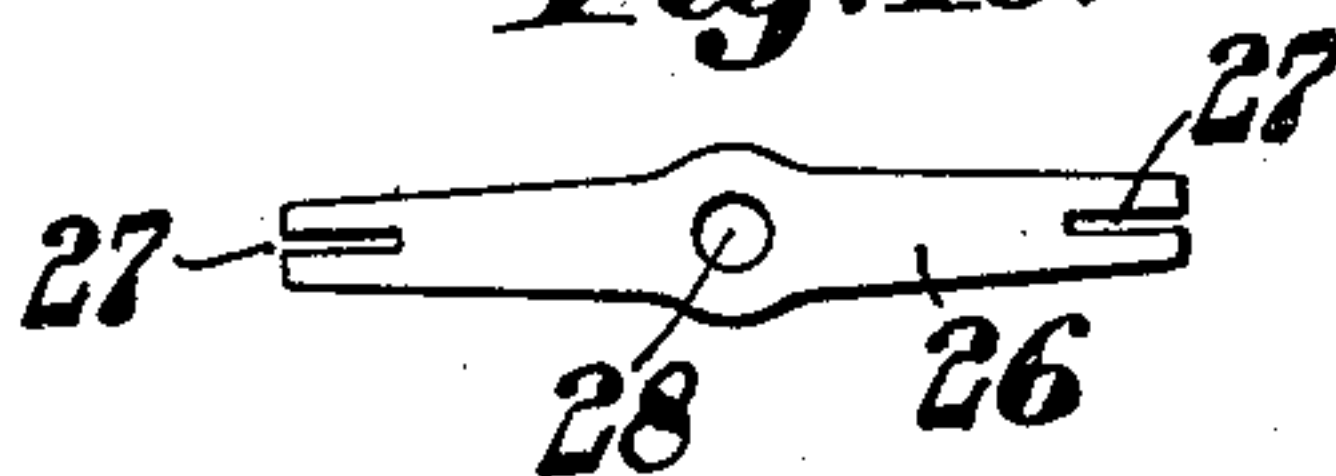
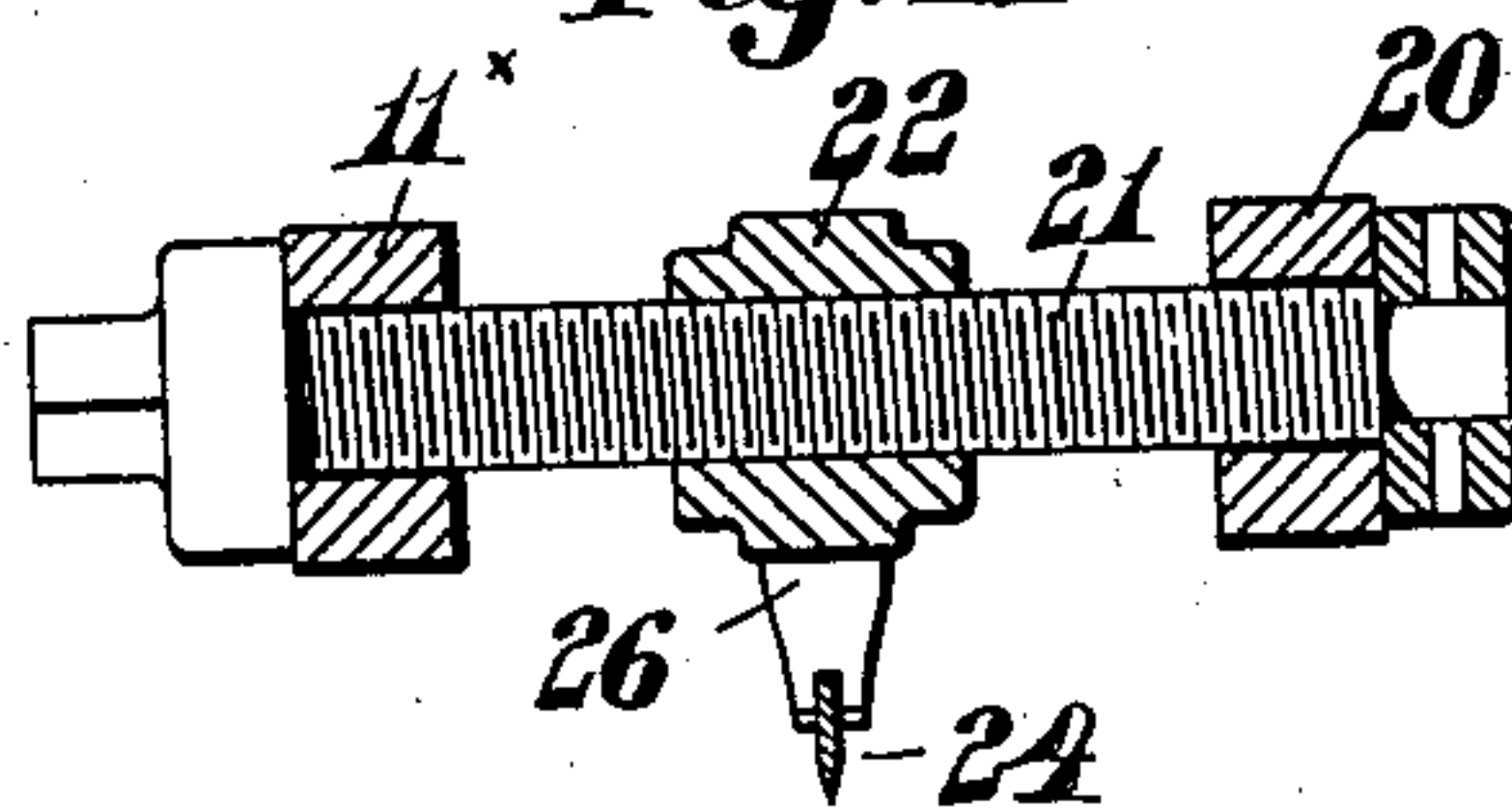


Fig. 11.



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UNITED STATES PATENT OFFICE.

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SECTIONAL DIE.

955,277.

Specification of Letters Patent.

Patented Apr. 19, 1910.

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To all whom it may concern:

Be it known that we, WILLIAM J. MACFARLAND and WILLIAM G. EATON, citizens of the United States of America, and residents, respectively, of Dorchester and Roxbury, both in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Sectional Dies, of which the following is a specification.

10 This invention relates to cutting dies and particularly to that class of dies which are utilized for the purpose of cutting blanks for use in the manufacture of boots and shoes.

15 It has for its object the provision of a die having a knife blade of irregular form for cutting out the outline of the blank and provided with stiffening webs formed integral therewith interposed between the two portions of said knife blade for the purpose of stiffening the same and retaining the outline of said die.

20 It has for a further object the provision of a means for securing to said stiffening webs a second or smaller die within the confines of the knife blade of the larger die.

25 Another object of the invention is to provide the intermediate members within the confines of the knife blade with a plurality of punches adapted to ornament the blank while it is being cut from a piece of material.

30 A further object of the invention is the provision of a plurality of marking or spacing pins adapted during the cutting of the blank to prick the blank for the purpose of showing the exact position of lap of the other parts of the upper stock to be sewed thereto in the construction of the boot and shoe or for the purpose of centering the blank upon the last during such construction.

35 It has for a further object the production of a yieldable marking member adapted to indent the blank, while being cut from a piece of material, to form in the blank a line to serve as a guide for the stitcher during the construction of the boot or shoe in which the blank is used.

40 It has for a further object the adjustability of said marking member relative to the cutting blade of said die.

45 The invention consists in certain novel features of construction and arrangement of parts which will be readily understood by

reference to the description of the drawings and to the claims hereinafter given.

Of the drawings: Figure 1 represents an inverted plan of a die embodying the features of this invention. Fig. 2 represents an elevation of the same. Fig. 3 represents a section of the same, the cutting plane being on line 3—3 on Fig. 1. Fig. 4 represents an elevation of one of the marking or spacing pins. Fig. 5 represents a detailed section through the stiffening webs and the smaller die secured thereto, the cutting plane being on line 5—5 on Fig. 1. Fig. 6 represents an enlarged sectional detail through a portion of one of the smaller dies and showing the punch mounted therein. Fig. 7 represents a section through the die, the cutting plane being on line 7—7 on Fig. 1, and showing in elevation the adjustable marker supporting member mounted therein. Fig. 8 represents a sectional detail through the same, the cutting plane being on line 8—8 on Fig. 7. Fig. 9 represents a sectional detail through the same, the cutting plane being on line 9—9 on Fig. 7. Fig. 10 represents a plan of one of the springs interposed between the marking member and its supporting member, and Fig. 11 represents a sectional detail, the cutting plane being on line 11—11 on Fig. 1, and showing the mechanism for adjusting the movable member relative to the cutting edge of the die.

Similar characters designate like parts throughout the several figures of the drawings.

In the drawings, 10 represents a continuous cutting blade of a die adapted to cut blanks for use in the manufacture of boots and shoes, this cutting blade being provided with a plurality of stiffening webs 11 interposed between two parts of said knife blade. The stiffening webs 11 are of less depth than the knife blades 10 so that when in use the webs never contact with the material from which the blanks are cut. These stiffening webs 11 are cast or otherwise formed integral with the knife blade 10 and serve to retain the shape of the die and prevent its distortion while subjected to pressure in the process of cutting.

The stiffening webs 11 may be provided at different points therein with perforations 12 in each of which is mounted a marking or spacing pin 13 which are adapted, when the blank is being cut, to enter the surface

of the material at a stated distance from the edge of the blank and make suitable indentations therein which will serve as a guide to show the exact position of lap of the other parts of the upper which are to be stitched thereto in the process of constructing the boot or shoe. The point of the marking or spacing pin 13 is slightly within the plane of the knife edges of the blade 10.

Formed integral with the cutting blade 10 and with the stiffening webs 11 are other intermediate members 15 which project toward each other leaving a space between adjacent faces thereof in which may be mounted a second smaller die 16. This die 16 is secured in position and locked to said members 15 by means of the wedge-shaped locking members 17 extending through openings in said webs 15 and into openings through the body of the die 16 and firmly driven into position as indicated in Fig. 5 of the drawings. This smaller die may be of any desired ornamental form, as indicated in Fig. 1, and preferably has two parallel marking edges 18 which are adapted to make indentations in the surface of the blank when it is being died out. This die 16 is also provided with a plurality of ornamental cutting members 19 threaded thereto as indicated in Figs. 5 and 6, these cutting members being adapted either to cut out from the blank small portions thereof in any desired shape or simply cut into the surface of the blank to leave an impression therein and give an ornamental appearance to that portion of the blank. In some classes of shoes it is very desirable to ornament the blank in the manner described but in a cheaper grade of shoes this ornamentation is omitted, in which case the pins or locking members 17 may be removed and the die 16 withdrawn from the die 10 and plain blanks cut therefrom in an obvious manner.

Extending from one of the stiffening webs 11* to ears 20 and freely revoluble in bearings therein are two threaded members 21 extending through a member 22 provided with threads engaging the threads of said revoluble members 21. It is obvious that by turning the members 21 the member 22 may be adjusted toward and from one portion of the knife blade 10.

In vertical openings through the member 22 are mounted the headed pins 23 to the lower ends of which are secured a blade 24 provided with a notched or serrated edge 25 which is adapted to engage with the surface of the blank while it is being cut to indent the same and leave a mark in its outer surface to form an ornamental line therein or serve as a guide to stitch a cap thereto in the construction of the shoe.

Interposed between the member 22 and the members 24 are a plurality of flat springs 26 provided with notches 27 at their ends,

into which the upper edge of the blade 24 extends. Each spring 26 also has a central opening 28 which surrounds the reduced end 29 of an adjusting screw 30 mounted in the member 22 and adjustable to regulate the tension of the springs 26. Interposed between this adjusting screw 30 and the blade 24 is also a spiral spring 31, the tension of which is likewise adjusted by turning said screw 30. When the tension of the springs has been properly adjusted the screw 30 is prevented from turning by means of the check member 32 threaded to said member 22.

This provides a very convenient form of die cast or otherwise formed in one piece with a continuous cutting knife blade stiffened by means of suitable webs formed integral therewith, these webs providing means for securing thereto in any convenient location marking or other spacing members adapted to serve as guides for the lap of other portions of the upper to be stitched thereto or to receive cutting members which are adapted to cut into the face of the material or through the material a plurality of ornamental designs or imitation stitches. It provides a means of utilizing the same die for cutting plain blanks or for simultaneously cutting the blanks and cutting or impressing therein ornamental designs while it provides a means of detaching the second ornamenting die and substituting therefor other secondary dies of any desired form to vary the design to be impressed into the blank. It also provides a ready means of marking into the surface of the blank, at the same time that the blank is being cut, a line of indentation which may serve either for ornamenting the blanks or as a guide for the stitcher in the construction of the boot or shoe for which the blank is used and it provides a means for adjusting the position of this marking member relative to a portion of the cutting blade and also a means for permitting the marking member to yield under pressure.

It is believed that from the foregoing description the operation and many advantages of the invention will be thoroughly understood.

Having thus described our invention, we claim:

1. A die of irregular form having a continuous cutting blade, and stiffening webs formed integral with said continuous blade and interposed between the inner faces thereof but separated from each other; an ornamental cutting member adapted to be positioned between said webs; and means for securing said cutting member to said webs.

2. A die of irregular form having a continuous cutting blade, and stiffening webs formed integral with said continuous blade and interposed between the inner faces

thereof but separated from each other; an ornamental cutting member provided with a plurality of indenting members adapted to impress a pattern in the material being cut; and means for securing said cutting member to said webs.

3. A die of irregular form having a continuous cutting blade, and stiffening webs formed integral with said continuous blade and interposed between the inner faces thereof but separated from each other; an ornamental cutting member provided with a plurality of punches adapted to impress a pattern in the material being cut; and means for securing said cutting member to said webs.

4. A die of irregular form having a continuous cutting blade, and stiffening webs formed integral with said continuous blade and interposed between the inner faces thereof but separated from each other; an ornamental cutting member provided with a plurality of punches adjustably mounted therein and adapted to impress a pattern in the material being cut; and means for securing said cutting member to said webs.

5. A die of irregular form having a continuous cutting blade, and stiffening webs formed integral with said continuous blade and interposed between the inner faces thereof but separated from each other; an ornamental cutting member provided with a plurality of punches threaded thereto adapted to impress a pattern in the material being cut; and means for securing said cutting member to said webs.

6. A die of irregular form having a continuous cutting blade, and stiffening webs formed integral with said continuous blade and interposed between the inner faces

thereof; parallel threaded members supported by said webs; a member adjustable thereon; and a yielding marking blade supported by said member.

7. A die of irregular form having a continuous cutting blade, and stiffening webs formed integral with said continuous blade and interposed between the inner faces thereof; parallel threaded members supported by said webs; a member adjustable thereon; and a spring interposed between said blade and member.

8. A die having a stiffening web; a member adjustably mounted thereon and provided with openings therein; slidable members therein; a marking blade secured to said members; and a spring interposed between said member and said blade.

9. A die having a stiffening web; a member adjustably mounted thereon and provided with openings therein; slidable members therein; a marking blade secured to said members; a spring interposed between said member and said blade; and means for adjusting the tension of said spring.

10. A die having a stiffening web; a member adjustably mounted thereon and provided with openings therein; slidable members therein; a marking blade secured to said members; a spring interposed between said member and said blade; and a threaded member for adjusting the tension of said spring.

Signed by us at 4 Post Office Sq., Boston, Mass., this 10th day of April, 1909.

WILLIAM J. MACFARLAND.

WILLIAM G. EATON.

Witnesses:

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