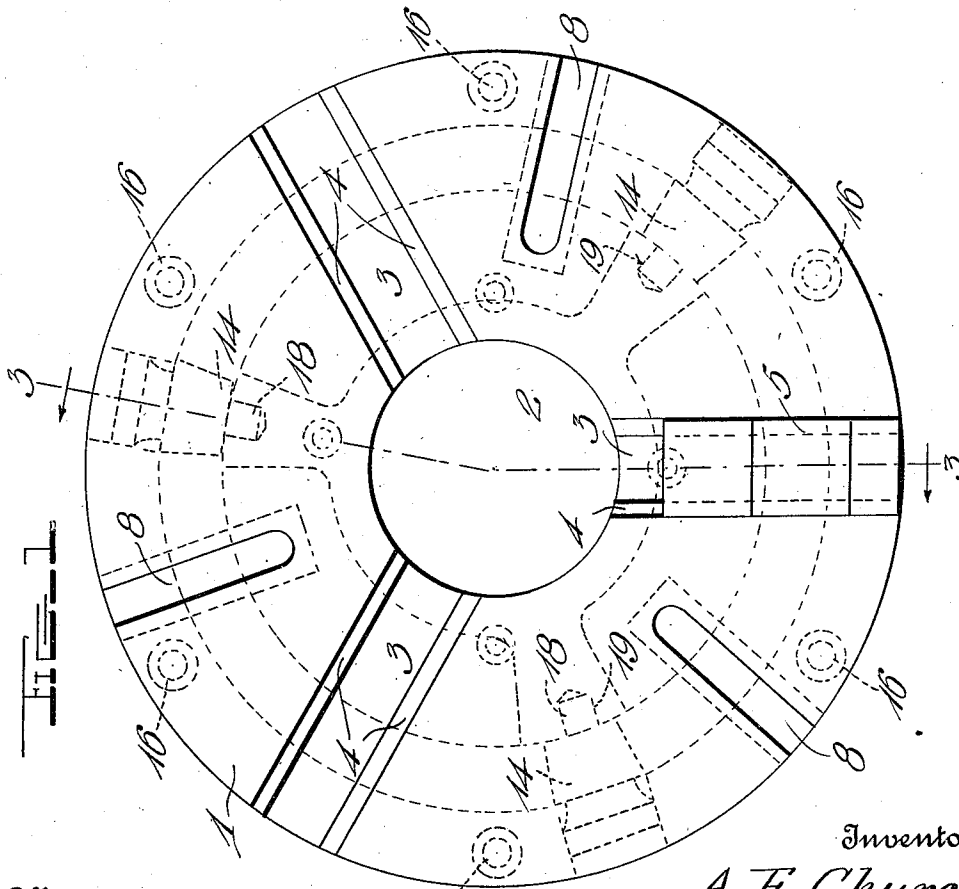
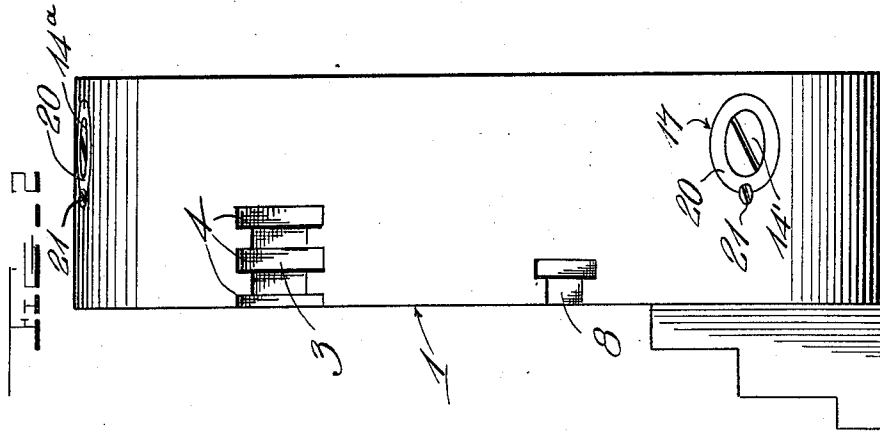


A. E. CHURCH.
MACHINE CHUCK.
APPLICATION FILED OCT. 24, 1910.

1,013,373.

Patented Jan. 2, 1912.
2 SHEETS—SHEET 1.



Witnesses

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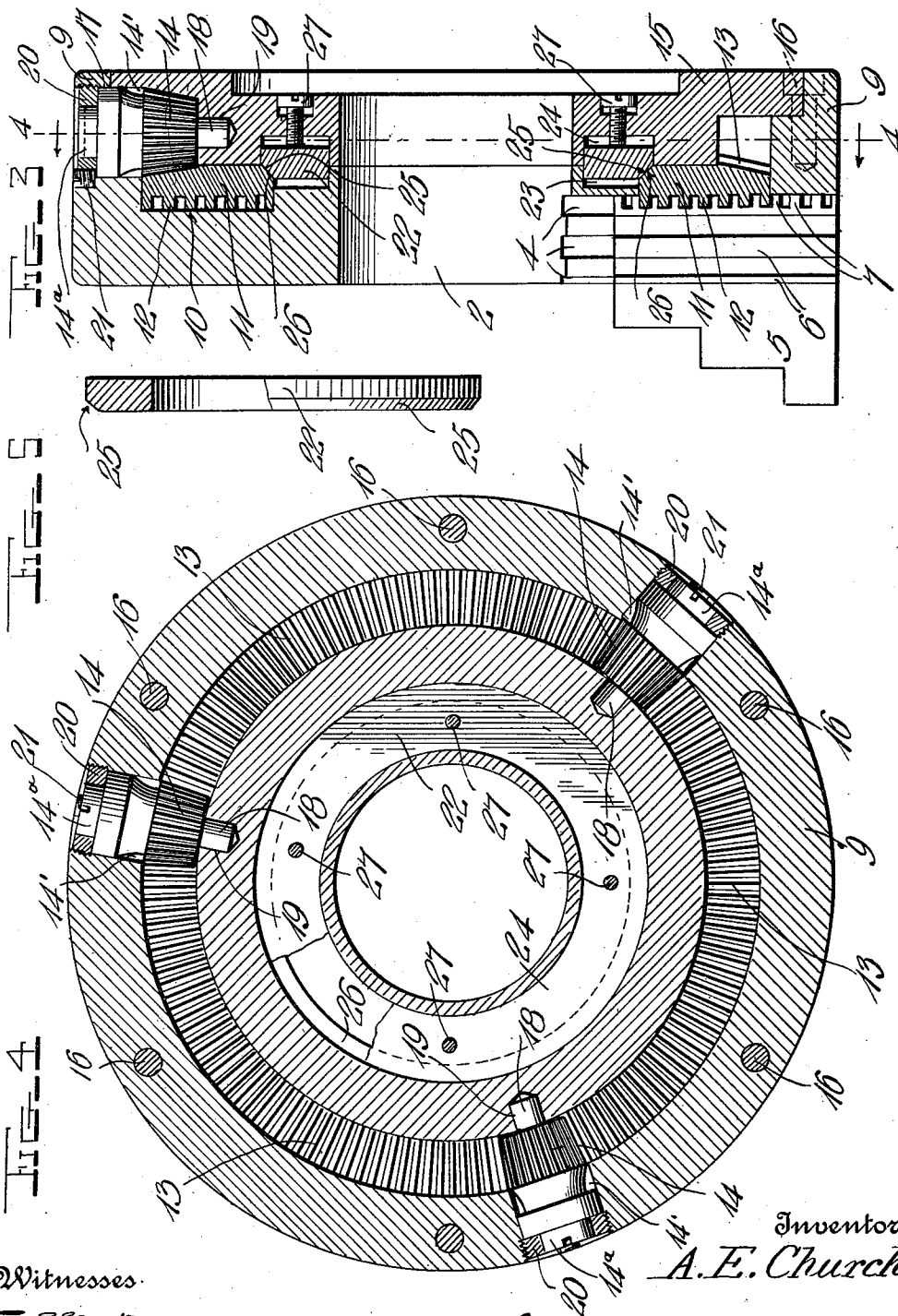
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C. Clement

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UNITED STATES PATENT OFFICE.

ALBERT E. CHURCH, OF NEW BRITAIN, CONNECTICUT.

MACHINE-CHUCK.

1,013,373.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed October 24, 1910. Serial No. 588,744.

To all whom it may concern:

Be it known that I, ALBERT E. CHURCH, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Machine-Chucks; and I do 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 appertains to make and use the same.

This invention relates to improvements in machine chucks.

The invention consists in the construction and arrangement of parts, as will be hereinafter described and particularly pointed out in the claim.

In the accompanying drawings: Figure 1 is a front view of my improved chuck; Fig. 2 is a side view thereof; Fig. 3 is a vertical section on the line 3—3 of Fig. 1; Fig. 4 is a vertical section on the line 4—4 of Fig. 3; and, Fig. 5 is a detail side view partly in section, of the adjusting ring.

Referring more particularly to the drawings, 1 denotes the front section or member of the chuck, said member being in the form of a circular disk or block having formed therein a centrally disposed passage 2. In the front side of the member or section 1 is formed a series of radially disposed guide slots 3 which extend through from the outer side of the member to the passage 2 as shown. The opposite side walls of the slots 3 are provided with series of longitudinally disposed parallel grooves or channels 4. Slidably or adjustably engaged with the slots 3 are the gripping jaws 5 of the chuck, said jaws having stepped outer ends as shown. The opposite sides of the jaws are provided with a series of longitudinally disposed ribs 6 which are adapted to slidably engage the grooves 4 formed in the opposite side walls of the slots 3 whereby said jaws are held in sliding engagement with the slots.

On the inner ends or sides of the jaws are formed a series of segmental gear teeth or threads 7 by means of which the jaws are adjusted radially by the adjusting mechanism hereinafter described. In the front side of the member or section 1 between the slots 3 are also formed a series of radially disposed slots 8 which are adapted to receive other appliances for use in connection with the chuck.

On the rear side of the section or member 1 of the chuck is formed an annular longitudinally extending flange 9 and in the inner face of the section 1 is formed an annular recess 10. Loosely engaged with the recess 10 and adapted to revolve therein is a scroll plate 11 having on its inner side a spiral thread 12 which is adapted to engage the teeth or threads 7 on the jaws whereby when the scroll plate is revolved in one direction or the other, the jaws will be moved inwardly or outwardly toward or from the center of the chuck.

On the outer side of the scroll plate 11 adjacent to its outer edge is formed an annular series of beveled gear teeth 13 with which are engaged bevel gear pinions 14 whereby the scroll plate is revolved in either direction in the recess 10 of the outer section 1 of the chuck.

The scroll plate 11 is held in operative engagement with the recess 10 in the section 1 of the chuck by means of a rear section or member 15 comprising an annular plate or disk adapted to fit into the flange 9 on the rear side of the section or member 1 as shown. The rear member or section 15 is secured to the front member 1 by suitable fastening screws 16. The pinions 14 are arranged in suitable recesses 14' formed in the inner side of the member or section 15 adjacent to its outer edge and in suitable passages 17 formed in the flange 9 of the front section 1. The pinions 14 are provided on their inner ends with journals 18 which revolubly engage the bearing sockets 19 formed at the inner ends of the recesses 16 in the sections 15 and are held in position by threaded fastening rings 20 which are screwed into the threaded outer ends of the passages 17 in the flange 9. The pinions 14 have formed on their outer ends reduced circular projections or bosses 14^a which project through the rings 20 and are provided with slots adapted to receive a screw driver or similar instrument whereby the pinions may be revolved. The fastening rings 20 are locked in engagement with the outer ends of the pinions by means of set screws 21.

In order to take up any lost motion which may occur from the wearing of the scroll plate or jaws I provide an adjusting mechanism comprising an adjusting ring 22 which is loosely engaged with annular recesses 23 and 24 formed in the meeting inner faces

of the sections 1 and 15 of the chuck, as clearly shown in Fig. 1 of the drawing.

The outer corner of the inner edge of the ring 22 is beveled as shown at 25 and said
 5 beveled corner is adapted to engage a beveled surface 26 formed on the inner corner of the apertured scroll plate whereby when the ring 22 is forced downwardly in the recesses 23 and 24 the beveled corner 25 of
 10 the ring will force the scroll plate down into close engagement with the teeth or threads of the jaws, thus taking up any wear or lost motion between these parts. The ring 22 is operated to adjust the scroll plate by
 15 means of a series of adjusting screws 27, which are arranged in threaded passages formed in the outer section or member 15 of the chuck and have their inner ends engaged with the outer side of the ring 22 as
 20 shown.

By means of the ring 22 arranged as herein shown and described and provided with the adjusting screws 27, it will be readily seen that all lost motion due to the
 25 wear of the parts of the jaw adjusting mechanism of the clutch may be readily taken up in all directions and said parts thus held in perfect working engagement.

From the foregoing description taken in
 30 connection with the accompanying draw-

ings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Having thus described my invention, what I claim is:

35 A chuck consisting of a front section and a rear section secured together and having registering annular concentric recesses in their opposed faces, a scroll ring fitted in the outer registering recesses and having a
 40 beveled inner edge, a plurality of radial slidable jaws fitted in one body ring and engaged by one face of said scroll ring, means for actuating the scroll ring mounted in the
 45 other body ring, a wear ring mounted in the inner registering annular recesses and having a beveled outer edge engaging the beveled inner edge of the scroll ring, means for holding said beveled edges unyieldingly
 50 in contact, the rear section having a flange thereon, and a scroll plate held in position by said flange.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALBERT E. CHURCH.

Witnesses:

MARY A. TAYLOR,

J. R. DUTTING.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."