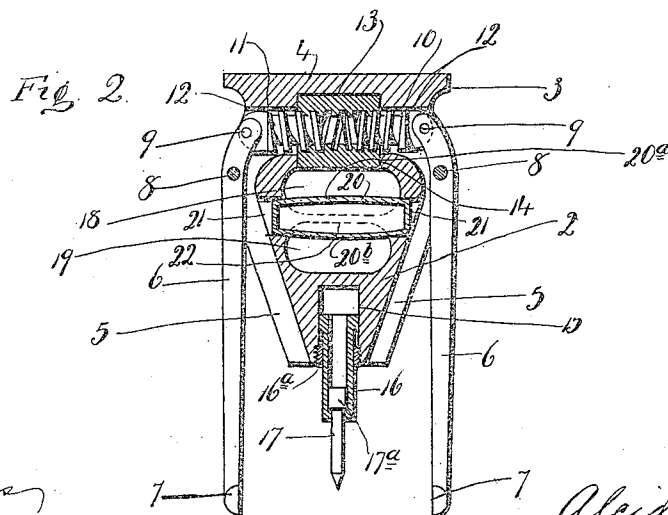
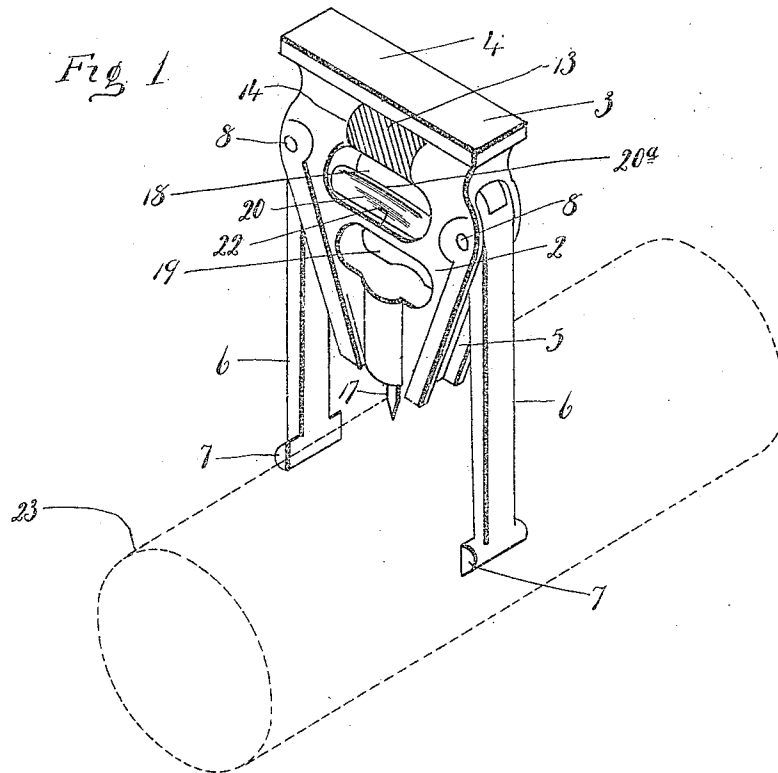


A. FRANCHINI.
 CENTERING DEVICE.
 APPLICATION FILED NOV. 27, 1909.

961,599.

Patented June 14, 1910.



Witnesses
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UNITED STATES PATENT OFFICE.

ALCIDE FRANCHINI, OF NEW HAVEN, CONNECTICUT.

CENTERING DEVICE.

961,599.

Specification of Letters Patent. Patented June 14, 1910.

Application filed November 27, 1909. Serial No. 530,082.

To all whom it may concern:

Be it known that I, ALCIDE FRANCHINI, a subject of the King of Italy, residing at New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Centering Devices; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1 a perspective view of my improved centering device shown as applied to a round rod. Fig. 2 a view of the device partly in vertical central section, and partly in elevation.

My invention relates to an improvement in caliper-like centering devices for machinists, the object being to produce a simple, compact, convenient and reliable device constructed with particular reference to finding the vertical centers of objects having rounded surfaces preparatory to drilling the same.

With these ends in view my invention consists in a caliper-like centering device having certain details of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

In carrying out my invention as herein shown, I employ a wedge-shaped frame 2 having a projecting foot 3 formed with a flat face 4 arranged at a right angle to the longitudinal axis of the frame and functioning as a "square" for the device. The opposite edges of the said frame are formed with grooves or channels 5 inclined toward each other, for the reception of centering arms 6 provided at their outer ends with jaws 7 and hung upon pivots 8 in the frame 2. The short inner ends of the said arms 6 are connected by pivots 9 with right and left hand screws 10 and 11 respectively located in aligned chambers 12 arranged at a right angle to the longitudinal axis of the frame and entered into the opposite ends of a knurled operating nut 13 having its opposite ends oppositely threaded and located in a recess 14 interposed between the chambers 12, whereby the arms 6 are moved toward or away from each other as described, by the rotation of the knurled nut 13 in one direction or the other. The apex of the frame 2 is formed with a bore 15 for the reception of

a longitudinally movable socket 16 carrying a longitudinally movable centering-pin 17 the axis of which is coincident with the longitudinal axis of the frame and at a right angle to the face 4 of the foot 3, the socket 16 being held in place by a threaded plug 16^a and the pin 17 being retained in the socket by a head 17^a upon its inner end.

The central portion of the frame is formed with sight-openings 18 and 19 for the convenient observation of a short spirit level in the form of a tube 20 the ends of which are inserted into sockets 21, 21, in the frame, the tube being arranged parallel with the face 4 and at a right angle to the axis of the pin 17. This tube is protected on opposite sides by cross-bars 22 formed integral with the frame, the sight-openings 18 and 19 of which permit the upper and lower surfaces of the tube to be readily seen. It is this tube that adapts my improved centering device to be used for finding the vertical centers of circular objects by the use of the device in a vertical position, either side up. As the device is to be used either side up, the tube should by preference be slightly convexed at the bottom as well as at the top so as not to be too sensitive, the high points of the tube being at its longitudinal center as at 20^a, 20^b.

The use of the device for securing the vertical center of a cylindrical object is shown in Fig. 1 of the drawings. It will be apparent that after the jaws 7 have been brought to bear upon the opposite sides of the rod 23 by the movement of the arm 6, consequent upon turning the operating nut 13, the exact vertical center of the rod 23 may be found by rocking the entire device thereupon until the bubble in the tube 20 stands in the center thereof. At this time the pin 17 will indicate the vertical center of the rod 23. The spot so indicated will then be marked by a prick-point or other tool. Now by reversing the device end for end, so that the arms 6 extend upward instead of downward, the center of the lower face of the rod 3 may be determined in the same way with the assistance of the spirit level. The addition of the face 4 to the device enables it to be used as any level is used in addition to being used as a centering device. The said face 4 also forms a convenient standard for the device when not in use, in either its capacity as a level or centering device.

I claim:—

1. In a centering device, the combination with a wedge-shaped frame having a face functioning as a "square" and located at a right angle to the longitudinal axis of the frame, of two centering arms pivotally mounted in the frame, means for operating the said arms, a centering pin mounted in the frame, and a spirit level mounted in the frame at a right angle to the said centering pin and between the same and the said means for operating the said centering arms.

2. In a centering device, the combination with a frame, of centering arms pivotally mounted therein, right and left hand screws connected with the short inner ends of the said arms, an operating nut receiving the inner ends of the said screws and having right and left hand screw threads for coaction therewith, a centering pin mounted in the said frame, and a spirit-level located at a

right angle to the said pin and between the same and the said screws and nut.

3. In a centering device, the combination with a frame having a face functioning as a "square" and located at a right angle to the longitudinal axis of the frame, of centering arms pivotally mounted in the frame, right and left hand screws respectively pivoted to the inner ends of the said arms, an operating nut coacting with the said screw, a centering pin located in the said frame at a right angle to the said face, and a spirit level mounted in the said frame between the said pin and screws and nut.

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

ALCIDE FRANCHINI.

Witnesses:

FREDERIC C. EARLE,
CLIFFORD J. REED.