No. 697,827. Patented Apr. 15, 1902.

# B. FLUDER.

## JOINING FLANGE FOR TEST PUMPS.

(Application filed Nov. 12, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

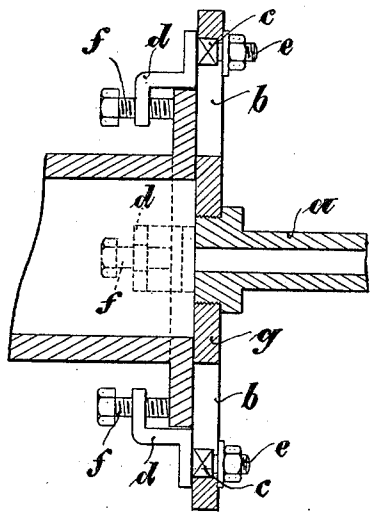
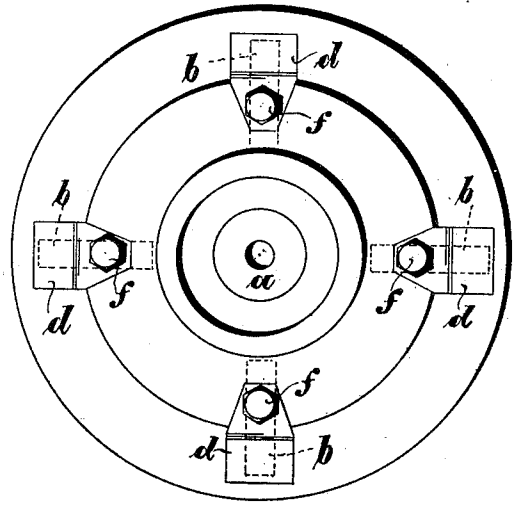



Fig. 2.




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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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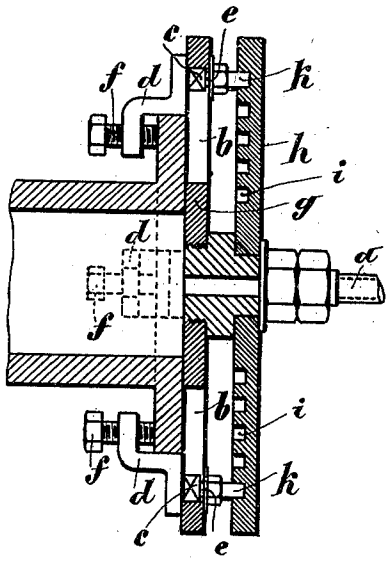
# B. FLUDER.

## JOINING FLANGE FOR TEST PUMPS.

(Application filed Nov. 12, 1901.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 3.



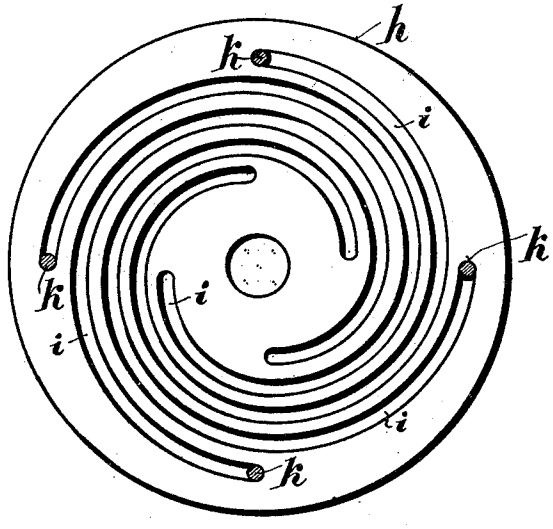




Fig. 4.

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# UNITED STATES PATENT OFFICE.

BERTHOLD FLUDER, OF ECKERSDORF, GERMANY, ASSIGNOR OF ONE-HALF TO FRANZ ENGEL, DOING BUSINESS UNDER THE FIRM-NAME OF ENGEL & GROSS, OF BRESLAU, GERMANY.

## JOINING-FLANGE FOR TEST-PUMPS.

SPECIFICATION forming part of Letters Patent No. 697,827, dated April 15, 1902.

Application filed November 12, 1901. Serial No. 82,028. (No model.)

*To all whom it may concern:*

Be it known that I, BERTHOLD FLUDER, engineer, of Eckersdorf, near Möhlten, in the Province of Silesia, Germany, have invented new and useful Improvements in Joining-Flanges for Test-Pumps, of which the following is a full and clear description.

In applying test-pumps it was up to the present necessary to have for each size of the diameter of the flange, pipe, or valve a different joining-flange of the corresponding size and with a correspondingly large hole. Apart from the consumption of the required different materials a very considerable loss of time was caused by the continually necessary replacing of the joining-flange. To do away with this inconvenience is the purpose of the present invention.

The inclosed drawings illustrate two different styles of said invention.

Figure 1 represents a vertical section, and Fig. 2 a front view, of one style, while Fig. 3 illustrates a vertical section of the other style, and Fig. 4 illustrates the part *h* of Fig. 3.

The joining-flange *g*, properly secured to the pipe *a* of the test-pump, has radial slits *b*, in which the tappets *d* are removably adjusted. In order to prevent the tappets *d* from turning, their adjoined pieces *c*, by means of which they slide in the slits *b*, are formed prismatically. The fixation of the tappets *d* is effected by screws. The bolts *e* of these screws are from practical reasons lengthening-pieces of the prismatic adjoined pieces *c*. The tappets *d* are formed like a Z, and the upper free ends of the tappets are provided with pressing-screws *f*, by means of which the flange of the pipe or valve to be tested is pressed on the flange *g* after the tappets *d* have been properly adjusted. In order to obtain a tight joining, a washer is laid between the two flanges. Four tappets *d*, with pressing-screws *f*, will be in every case sufficient and advantageous.

For the purpose of avoiding the proper adjustment of each single tappet by itself the second style of said invention similar to the adjustment of the chucks of lathes is provided with a simple device for the simultaneous adjustment of all four tappets. The same consists of a disk *h*, the front side of which is provided with eccentric grooves *i*. This disk *h* is thus arranged that the same is parallel and removable and also axial to the flange *g*. The number of the grooves corresponds with that of the tappets *d*. The bolts *e* of the screws securing the tappets *d* have lengthening-pieces in shape of smooth tenons *k*, each of which catches in one of the grooves *i* of the disk *h*. The arrangement of the grooves *i* is obvious from Fig. 4. Their form is spiral and the same for all four, so that by turning the round plate *h* an equally large radial removing of the four tappets is effected. This adjustment may be performed after the joining of the piece to be tested.

I claim—

1. In a coupling the combination with joining-flanges on the parts to be coupled abutting against each other, one of said flanges having radial slots, of tappets removably secured in said slots and pressing-screws mounted in said tappets in position to engage the other flange, substantially as described.

2. In a coupling the combination with joining-flanges on the parts to be coupled abutting against each other, one of said flanges having radial slots, of tappets movably guided in said radial slots, pressing-screws mounted in said tappets in position to engage the other flange and means for simultaneously moving all said tappets toward and from the center, substantially as described.

3. In a coupling the combination with joining-flanges on the parts to be coupled abutting against each other, one of said flanges having radial slots, of tappets movably guided in said slots, pressing-screws mounted in said tappets in position to engage the other flange and means for simultaneously moving all said tappets toward and from the center comprising a disk having a plurality of spiral grooves to receive tenons or projections from the tappets, substantially as described.

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

BERTHOLD FLUDER.

Witnesses:

ALBERT SCHENK,

RUDOLF THESS.