

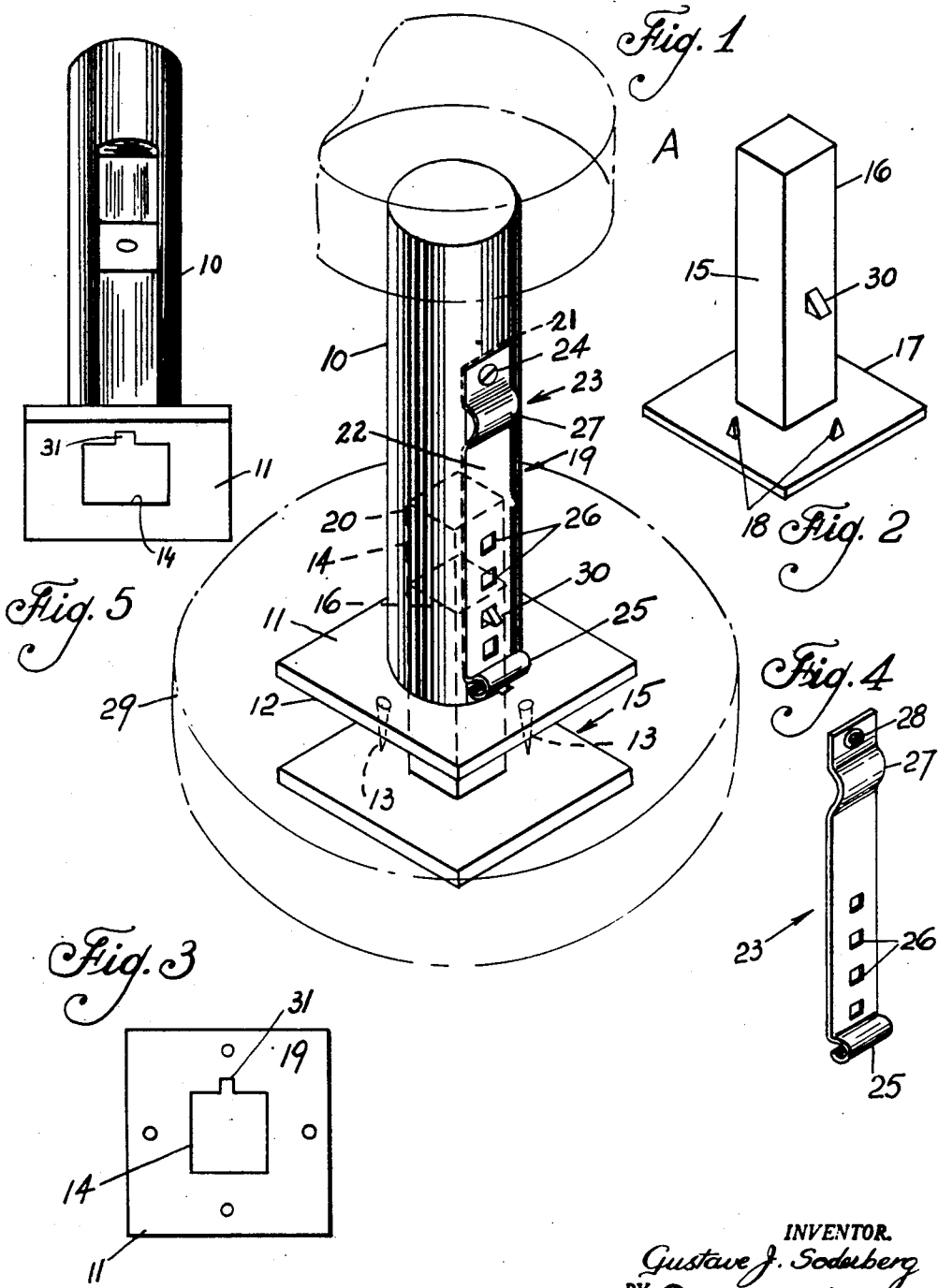
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G. J. SODERBERG

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CONNECTING MEANS

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INVENTOR.
Gustave J. Soderberg
BY Richard J. Feiler
ATTORNEYS

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CONNECTING MEANS

Gustave J. Soderberg, Babylon, N. Y.

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5 Claims. (Cl. 51-168)

This invention relates to separable connecting means between a driven shaft and objects secured thereto in such a manner that they be readily assembled and disassembled therefrom.

One object of the invention is the provision of such a connecting means especially adapted for use in connection with a buffing or polishing machine.

Another object of the invention is the provision of such a connection which will permit the use of polishing or buffing disks of various thicknesses.

A further object of the invention is the provision of means for preventing relative rotary movement between the shaft and polishing disk carried thereby.

Another object of the invention is the provision of a device of this nature, wherein the maximum simplicity of construction and operation is secured.

Other objects and advantages will become more apparent as the nature of the improvements is better understood, the invention consisting in the novel arrangement and co-relation of parts, herein described, and illustrated in the accompanying drawing wherein similar reference characters are used to denote corresponding parts in the several views.

In carrying out a preferred embodiment of the invention, it was found advantageous to provide the polishing disk holding shaft with a chamber or recess for the reception of a removable plug, and to further provide the shaft with a spring member for releasably engaging the said plug, the polishing disk being held on the plug between a flange thereon and a similar flange on the shaft.

In the drawing:

Figure 1 is a fragmental view in perspective of a shaft provided with polishing disk connecting means in accordance with one embodiment of the present invention;

Figure 2 is a perspective view of the adjustable end plug;

Figure 3 is an end view in elevation of the shaft looking from the bottom of Fig. 1;

Figure 4 is a detail view in perspective of the plug retaining spring;

Figure 5 is a perspective view of the shaft with the adjustable plug mounted thereon.

Referring now to the drawing in detail, the numeral 10 indicates a shaft which may be supported horizontally or vertically as shown in a lathe or any other machine A. The said shaft is provided at its extreme end with a flange 11.

The flange 11 may be square in form and may be provided with teeth or projections 13.

A counterbore of considerable length forms a chamber 14 in the free end of said shaft for the reception of the shank 16 of a plug 15. The plug 15 has a flange 17 at one end thereof provided with teeth 18.

One side of the counterbored end of the shaft is slotted or cut away as at 19, the said cut away portion however extending beyond the bottom 20 of the counterbore, to a point 21, the area 22 between the points 20 and 21 forming a seat for a plate spring 23.

The said spring 23 is secured at one end thereof to the seat 22 by means of a rivet 24 and is provided at its opposite end with a loop 25 and with a plurality of holes 26 intermediate the said loop 25 and a bowed portion 27 directly below the hole 28, said hole 28 accommodating the rivet 24.

In practice when it is desired to secure a polishing disk 29 to the shaft 10 the said disk which has a central square hole is placed over the shank 16 of the plug, then the said shank is inserted into the counterbore or chamber 14, the spring 23 being raised by pulling upwardly or outwardly on the loop 25. When in position, the spring is permitted to snap back into position where one of the holes 26 engages a pin or projection 30 on the plug shank. The hole 26 engaged by the pin 30 depends upon the thickness of the disk 29. It is to be understood that the said disk is provided with suitable square recesses or depressions to accommodate the flanges 11 and 17. The holes 26 are so arranged as to permit the use of disks of pre-determined thicknesses. The disc may be also held by teeth 13 and 17.

It will readily be seen that in view of the fact that the spring extends into the shaft slot 19 relative rotation between the plug and shaft is prevented. The teeth 13 and 18 likewise prevent such rotation as well as relative rotation between the polishing disk 29 and shaft 10. A slot or keyway 31 in the shaft flange 11 allows the pin 30 on the plug 15 to pass into the counterbore 14.

To replace the polishing disk 29, the spring loop 25 is lifted up, the plug and disk withdrawn, and a different disk inserted in place as above outlined.

From the foregoing it will be seen that with the improved connections of the present invention, buffs, polishing disks and other similar devices may be readily removably assembled on the

end of a shaft and maintained thereon against relative rotation with said shaft.

It will further be seen that due to spaced apart holes in the spring disks of various pre-determined thicknesses may be used.

What is claimed is:

1. In a machine of the nature referred to, a rotatable shaft, said shaft having at one end thereof, a longitudinal chamber and a slot merging with said chamber, a disk carrying plug adapted to be inserted endwise into the said chamber, resilient means secured to the shaft and extending lengthwise of said slot, and means on said plug for engagement with the resilient means for maintaining the said plug in said chamber.

2. In a machine of the nature referred to, a rotatable shaft, said shaft having at one end thereof, a longitudinal chamber and a slot merging with said chamber, a disk carrying plug adapted to be inserted endwise into the said chamber, a plate spring secured at one end to the shaft, said spring extending longitudinally of said slot and provided with a plurality of spaced apart holes, and a projection on said plug adapted to engage one of the spring holes.

3. In a machine of the nature referred to, a rotatable shaft, said shaft having at one end thereof, a longitudinal chamber open at one of its ends and a slot merging with said chamber, a flange on the shaft at the open end of the chamber, a plug for supporting a polishing disk thereon and adapted at one end thereof to be inserted

into the chamber, a flange at the opposite end of the plug, means carried by said flanges for preventing relative rotation between the polishing disk and shaft and plug, a plate spring secured at one end to the shaft, said spring extending longitudinally of said slot and provided with a plurality of spaced apart holes, and a projection on said plug adapted to engage one of the spring holes.

4. In a machine of the nature referred to, a rotatable shaft, said shaft having at one end thereof, a longitudinal chamber open at one of its ends and a slot merging with said chamber, a flange on the shaft at the open end of the chamber, a plug for supporting a polishing disk thereon and adapted at one end thereof to be inserted into the chamber, a flange at the opposite end of the plug, means carried by said flanges for preventing relative rotation between the polishing disk and shaft and plug, a depressed seat formed on the shaft at one end of the slot, a plate spring secured at one end to the said seat, said spring extending longitudinally of said slot and provided with a plurality of spaced apart holes, and a projection on said plug adapted to engage one of the spring holes.

5. A connection according to claim 2, wherein the spring is provided with means by which it may be lifted out of engagement with the said projection.

GUSTAVE J. SODERBERG.