My invention relates to a power operated rotary head for sanding machines. An important object of the invention is to provide a head for sanding machines, wherein the sandpaper sheet or disc can be changed or adjusted without disassembling the parts of the head or removing any screws or the like.

A further object of the invention is to provide a sanding head wherein the sandpaper is clamped between two members and held in place by spring tension, thus eliminating the need for attaching screws, and providing a full circular sanding surface.

A further object of the invention is to provide a sanding head adapted to be mounted upon the armature shafts of portable or stationary motors, and which is extremely simplified in construction, durable and inexpensive to manufacture.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are employed to designate like parts throughout the same:

Figure 1 is a central vertical section through the sanding head embodying the invention, and showing the same mounted upon the armature shaft of an electric motor, parts in elevation.

Figure 2 is a plan view of a sanding sheet or disc removed.

Figure 3 is a side elevation of a locking sleeve removed.

Figure 4 is an end elevation of the same.

Figure 5 is an elevation of a sanding disc.

Figure 6 is a side elevation of the same.

Figure 7 is an elevation of a clamping disc.

Figure 8 is a side elevation of the same.

Figure 9 is a fragmentary side elevation of the clamping disc, taken at right angles to Figure 8.

Figure 10 is a fragmentary end elevation of the clamping disc.

In the drawings, where for the purpose of illustration is shown a preferred embodiment of the invention, the numeral 15 designates an electric motor, having an armature shaft 16, including a reduced end extension 17.

Detachably mounted upon the reduced extension 17, and rigidly secured thereon, by means of a set-screw 18, is a sanding disc 19, including a spindle 20. The spindle 20 is cylindrical and includes a reduced screw-threaded extension 21 forming a lateral annular shoulder 22, and having a central axial bore or opening 23 to receive the extension 17. The spindle 20 is disposed at the center of the disc 19 which is circular, rigid and flat. The disc 19 is rounded at its peripherial edge 24. The disc 19 is integral with the spindle 20, and disposed at right angles to the same. The top of the set-screw 18 does not project above the outside diameter of the extension 17.

 Mounted upon the screw-threaded extension 21 is a locking sleeve 25. This locking sleeve is internally screw-threaded and cylindrical at its end adjacent to the shoulder 22 as at 26. The locking sleeve 25 includes diametrically oppositely disposed projections or pins 27, which project radially from the sleeve. The end 26 of the sleeve 25 remote from the shoulder 22 is hexagonal, as shown. The outer end of the sleeve 25 is adapted to engage the shoulder 22, when the sleeve is in a locked or clamping position. In such position, the set-screw 18 is disposed beyond the opposite end of the sleeve 25, as shown.

Disposed inwardly of the sanding disc 19, and adapted to engage the disc 19, is a clamping disc 28, including an axial sleeve 29, integral therewith, and disposed at the center of the disc 29. The sleeve 30 is cylindrical and tubular and engages over the spindle 20 and cylindrical end 26 of sleeve 25, as shown. The sleeve 30 is slidably upon the spindle 20 and end 26.

The sleeve 30 has an inner annular end 31, having diametrically oppositely arranged cylindrically curved radial recesses 32, adapted to form seats for the pins 27 of sleeve 25, when such sleeve is in the locking position. Adjacent to the recesses 32 and spaced angularly slightly therefrom, Figure 10, and formed in the end 31 and side wall of the sleeve 30 are spiral slots 33, which terminate near the longitudinal center of the sleeve 30, as shown. The pins 27 are adapted to slidably enter the spiral slots 33 when the sleeve 30 is in the unlocked position. The forward face of the clamping disc 29 is slightly concave, as shown at 34, so that only a relatively narrow circumferential portion 35 of the disc 29 engages the inner flat surface of the sanding disc 19. The disc 29 is somewhat resilient due to its curvature.

A circular sandpaper sheet 36, or the like, having a scalloped marginal edge, forming triangular teeth 37, is mounted upon the forward face of the sanding disc 19. The triangular teeth 37 are folded around the rounded edge 24 and arranged between the inner face of the disc 19 and the narrow annular portion 35 of the clamping disc 29. The teeth 37 are provided to prevent wrinkling of the sandpaper sheet 36. The rounded edge 24 prevents possible cutting of the sandpaper...
The entire forward or working face of the sanding disc 19 is covered by the sandpaper sheet 36, as shown.

In use, the sanding head is applied to the armature shaft of the motor, as shown in Figure 1. The set-screw 18 is tightened, and the head will rotate with the armature shaft. With a sandpaper sheet 38 in place, as in Figure 1, the locking sleeve is screwed to the left, Figure 1, until the shoulder 22 is engaged. The pins 27 are now engaged in the recesses 32 of the sleeve 30, and the clamping disc 29 is locked in tight clamping engagement against the sanding disc 19, to secure the sheet 36 in place. The disc 29 is slightly resilient, as stated, and exerts a yielding force upon the scalloped edge of the sandpaper sheet.

When it becomes necessary to change the sandpaper sheet, it is unnecessary to disassemble the sanding head. A wrench or the like is applied to the hexagonal end 28 of locking sleeve 25, and the sleeve is unscrewed sufficiently for the pins 27 to disengage from within the recesses 32. When this occurs, the sleeve 30 is turned slightly upon its longitudinal axis, until the pins 27 engage in the spiral slots 33 at the sleeve end 31. The sleeve 30 is now turned further, and due to the action of the pins 27 in the spiral slots 33, the sanding disc may be readily shifted axially to a position like that shown by dotted lines in Figure 1. Abundant space is thus provided to change the sandpaper sheet 36. The sleeve 30 is then turned in the opposite direction, and the disc 29 will advance toward the clamping position. The pins 27 will leave the spiral slots 33, and are again engaged in the recesses 32. The locking sleeve is now tightened against the shoulder 22, and the new sandpaper sheet 36 is securely clamped in place.

It is to be understood that the form of the invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of the invention, or the scope of the subjoined claims.

Having thus described the invention, I claim:

1. A rotary head for sanding machines including a motor having an armature shaft, such head comprising a sanding disc mounted upon the armature shaft for rotation therewith, said sanding disc including a spindle having a screw-threaded extension, a clamping disc slidably mounted upon the spindle and adapted to engage to the sanding disc and including a sleeve having an end recess and spiral slot, and a locking sleeve mounted upon the screw-threaded extension and including a part to alternately engage in the end recess and spiral slot.

2. A rotary head for sanding machines includ-