To all whom it may concern:

Be it known that we, THEODORE H. ALCORN, residing at Kansas City, and EARL L. CHATFIELD, residing at Mount Washington, in the county of Jackson and State of Missouri, citizens of the United States, have invented certain new and useful Improvements in Rubber-Disk Attachers for Bottle-Stoppers, of which the following is a specification.

This invention relates to rubber-disk attachers for bottle-stoppers; and our object is to produce means for disposing the disks in place easily and quickly without injuring them.

This invention consists in certain novel and peculiar features of construction and combinations of parts, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a perspective view showing the attacher as arranged for disposing a rubber disk upon a porcelain bottle-stopper. Fig. 2 is an horizontal section of the same. Fig. 3 is a vertical section of the same. Fig. 4 is an inverted plan view of part of the split barrel-clamp.

Referring now to the drawings in detail, 1 designates a base-plate, preferably of cast metal and provided with an arm 2. In practice the plate is preferably secured to an upright with said arm projecting horizontally; but it may be secured upon a table with said arm projecting vertically upward. In opposite sides of the arm near the base are cavities 3, and extending through the outer end of the arm at right angles to said cavities is a pivot 4, upon which is mounted the members 5 of a clamp, the jaws of the clamp being semicylindrical in cross-section in order to form a tube or barrel when closed. The body of this tube or barrel is of preference conical, as shown at 6, and is formed at one side (its lower side when arranged horizontally) with a slot 8, formed by cutting away the edges of the jaws, as at 7, the object of this slot being to enable the spreader, hereinafter referred to, to be more readily dislodged when necessary. The bore is sharply choked at its front end, as at 9, to insure close connection with the spreader at that point, and thus guard against the disk, hereinafter mentioned, wholly or partially entering the barrel-clamp with the spreader.

9 designates a pair of coil-springs which engage the cavities 3 at their inner ends and at their outer ends sockets 10 of the handle ends of the clamp and tend to hold the jaws of the latter together.

11 designates a pair of intersecting levers 60 pivoted to boss 18 of plate 1 and constituting a pair of pincers, the jaws 18 of the same being provided with recesses 14 to engage the outer sides of the handle ends of the clamp members. The handle ends of the pincers are connected by a cord or other flexible connection 15, and this is connected in turn by a cord 16 with a foot-lever or treadle 17, pivoted to work vertically in a bracket 18, secured to a wall or other support, the arrangement being such that foot-pressure on the lever or treadle operates the pincers against the resistance of springs 9 and opens the jaws to enable the spreader, presently described, to drop or be drawn out of the clamp.

It drops out through slot 8 when the clamp occupies a horizontal position and is withdrawn when the clamp is arranged vertically.

The spreader 19 is of conical form and dished at its base, as at 20, and is forced partly through the rubber disk, as at 21, the latter being first lubricated for easy movement on the spreader by being dipped in water. The spreader is then forced into the barrel-clamp until the clamp comes in contact with the end of the barrel, as shown in Fig. 1.

When it is desired to equip a porcelain stopper, as at 22, with a rubber disk, the attenuated end of said stopper beyond end of greater diameter than the grooved portion 23 is fitted in the dished end of the spreader, and then sufficient pressure is brought to bear upon the stopper to force the spreader into the clamp until the rubber disk registers with and snaps into the groove of the stopper, this action being rendered positive and reliable because the close fit between the spreader and choked end of the barrel prevents the disk from getting pinched between them, and consequently invariable effects its proper deposit.
on the stopper. Immediately after this takes
place the equipped stopper is thrown aside,
and by depressing the lever or treadle, and
thereby throwing the jaws apart, the spreader
is permitted to drop down through slot 8 into
the operator's hand or upon the workbench.

In Fig. 3 is shown an ordinary wire stopper
24, the same being provided with a head 25
at one end and a smaller enlargement 26 a
sizable distance from said head, so as to pro-
vide a space between them to receive a rub-
ber disk. With this type of stopper, it is pref-
erable to use a spreader, as at 27, provided
with a slot 28 and a hole 29, leading from its
base to said slot, the base being of course
dished or concaved, as hereinafter explained.

Upon this spreader the disk is placed in the
manner already explained, and then the
spreader is inserted in the clamp. The free
end of the wire stopper is then slipped through
the hole 29 in the base and through the regis-
tering slots 28 and 8 or, if no slot 8 is pro-
vided, through the space between the jaws, as
the latter will be forced apart some distance
by the insertion of the spreader. The stop-
er is then manipulated in such a manner
that the enlargement 26 fits snugly in the
dished portion or cavity 20 of the spreader,
as shown by dotted lines in Fig. 3. The op-
erator then by means of the butt-end of an awl
or other equivalent tool forces the spreader in-
wardly between the jaws until the disk is
forced beyond the end of the spreader and
snaps upon the wire stopper between its head
25 and enlargement 26. The spreader may
then be withdrawn by pulling outward on the
stopper, or the stopper may be first withdrawn
and the spreader withdrawn by slipping the
small end of the tool through the slot 28, or
it may be removed by opening the clamp in
the manner previously described.

The above-described manner of equipping
the wire stopper with the rubber disk is the
preferred one; but it may also be equipped
by slipping the disk over the head 25 through
the medium of a clamp and a spreader of
proper proportions, as will be readily un-
derstood.

Heretofore all devices for attaching rubber
disks to stoppers of the types shown have
usually been instruments which were inserted
in the holes of the disks, stretching the latter
and slipping them upon the stopper, which
operation was frequently attended by injury
to the disks.

By the use of our spreaders the disks can
be attached to the stoppers with the danger
of tearing the former practically eliminated,
and such operation can also be performed
much more expeditiously than in the old way.

Having thus described the invention, what
we claim as new, and desire to secure by Let-
ters Patent, is—

1. A rubber-disk attacher for bottle-stop-
pers, comprising a split tubular clamp, and a
disk-carrying spreader to be forced into said
clamp until the latter pushes the disk off
the end of the spreader onto the stopper.

2. A rubber-disk attacher for bottle-stop-
pers, comprising a split tubular clamp, and a
disk-carrying spreader to engage the clamp
and provided with a dished or recessed base.

3. A rubber-disk attacher for bottle-stop-
pers, comprising a split tubular clamp, and a
disk-carrying spreader, provided with a slot
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and hole opening from said slot through its
base.

4. A rubber-disk attacher for bottle-stop-
pers, comprising a split tubular clamp, com-
posed of two members, pivoted together and
having the inner faces of one end of said
members recessed, the front end of the rec-
cesses being segmental and of smaller diame-
ter than the body portions thereof, said rec-
cesses conjointly constituting a bore having
90
its front end choked, springs for holding the
jaws pressed yieldingly toward each other,
and a disk-carrying spreader, circular in
cross-section, to be forced into the clamp until
the ends of said jaws push the disk off
the end of the spreader onto the stopper.

5. A rubber-disk attacher for bottle-stop-
pers, comprising an arm, a tubular clamp
consisting of two members pivoted together
and to said arm, springs bearing at their op-
posite ends against said arm and the handle
ends of said clamp members, pinces engag-
sing said handle ends, and a foot-lever or
treadle connected to the pinces to operate
the same and thereby open the clamp.

6. A rubber-disk attacher for bottle-stop-
ers, a split barrel-clamp having its jaws
pressed yieldingly together and the bore of
its jaws choked or contracted at its front end.

7. In a rubber-disk attacher for bottle-
stopers, a split barrel-clamp having the front end of its bore choked
or contracted, and a conical disk-carrying
spreader to be forced like a wedge into said
split barrel-clamp.

In testimony whereof we affix our signatures
in the presence of two witnesses.

THEODORE H. ALCORN.
EARL L. CHATFIELD.

Witnesses:
H. C. RODGERS,
G. Y. THOMAS.