

June 13, 1933.

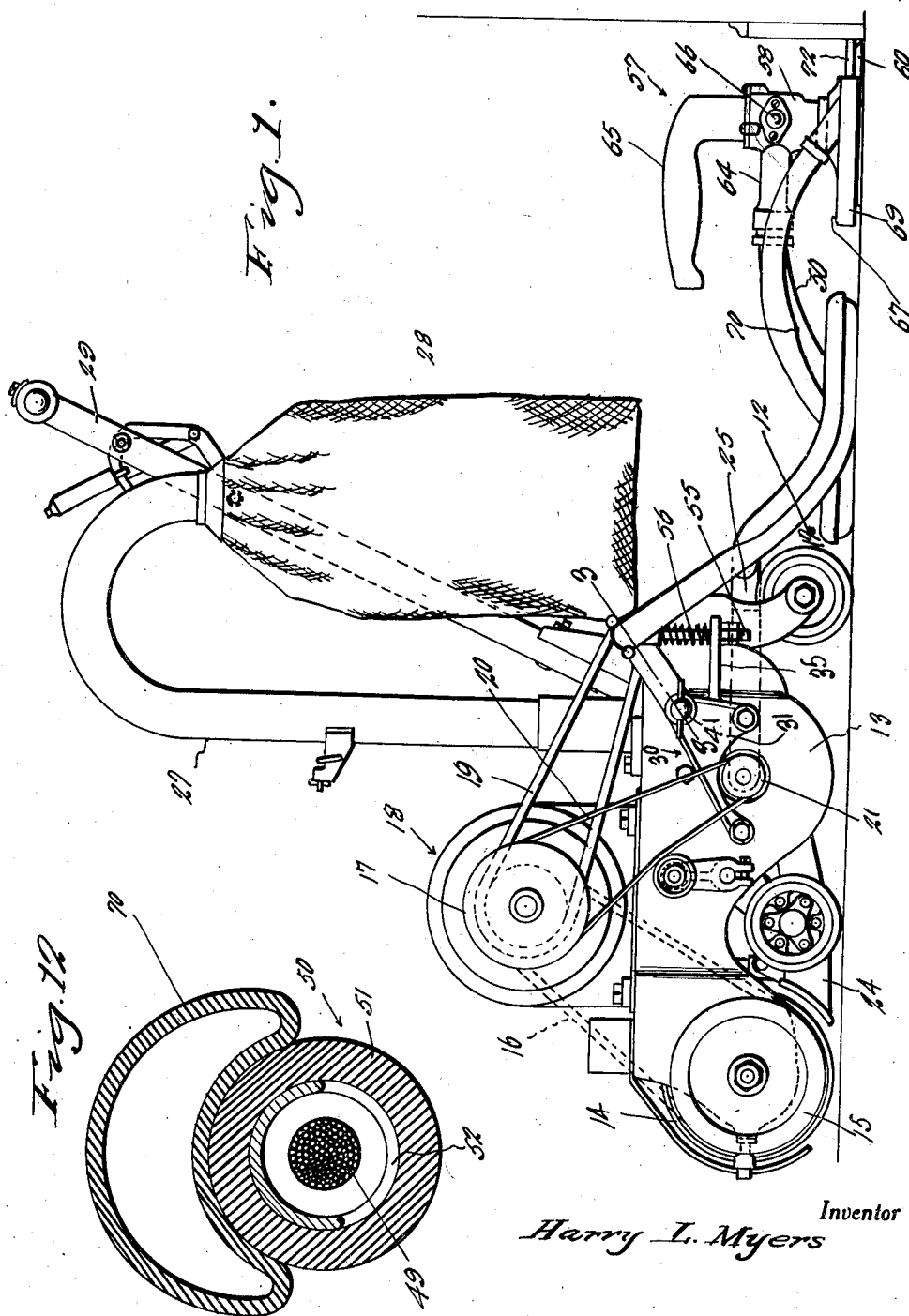
H. L. MYERS

1,914,280

EDGING ATTACHMENT FOR DRUM SANDING MACHINES

Filed July 11, 1932

4 Sheets-Sheet 1



June 13, 1933.

H. L. MYERS

1,914,280

EDGING ATTACHMENT FOR DRUM SANDING MACHINES

Filed July 11, 1932

4 Sheets-Sheet 2

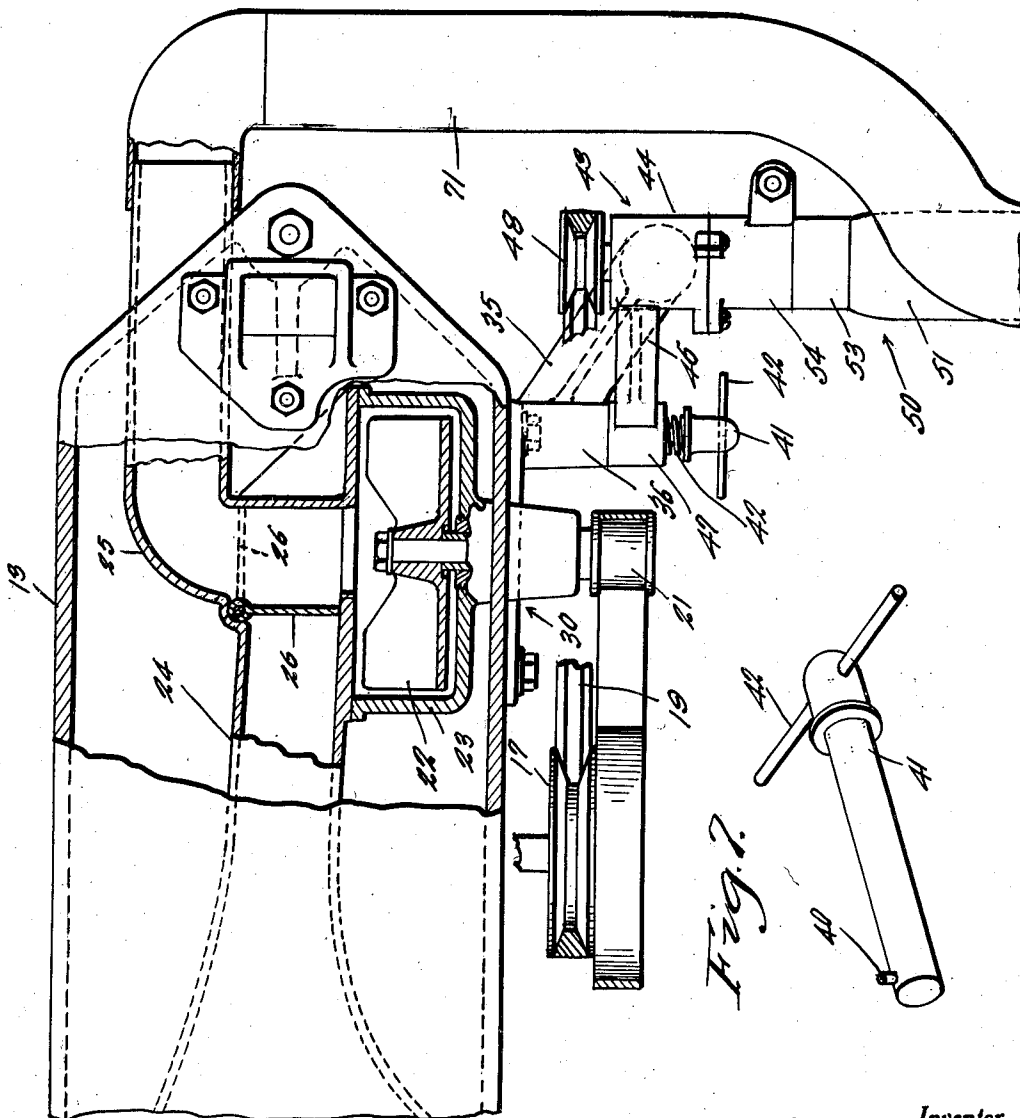


Fig. 2.

Harry L. Myers *Inventor*

By *Clarence A. O'Brien* *Attorney*

June 13, 1933.

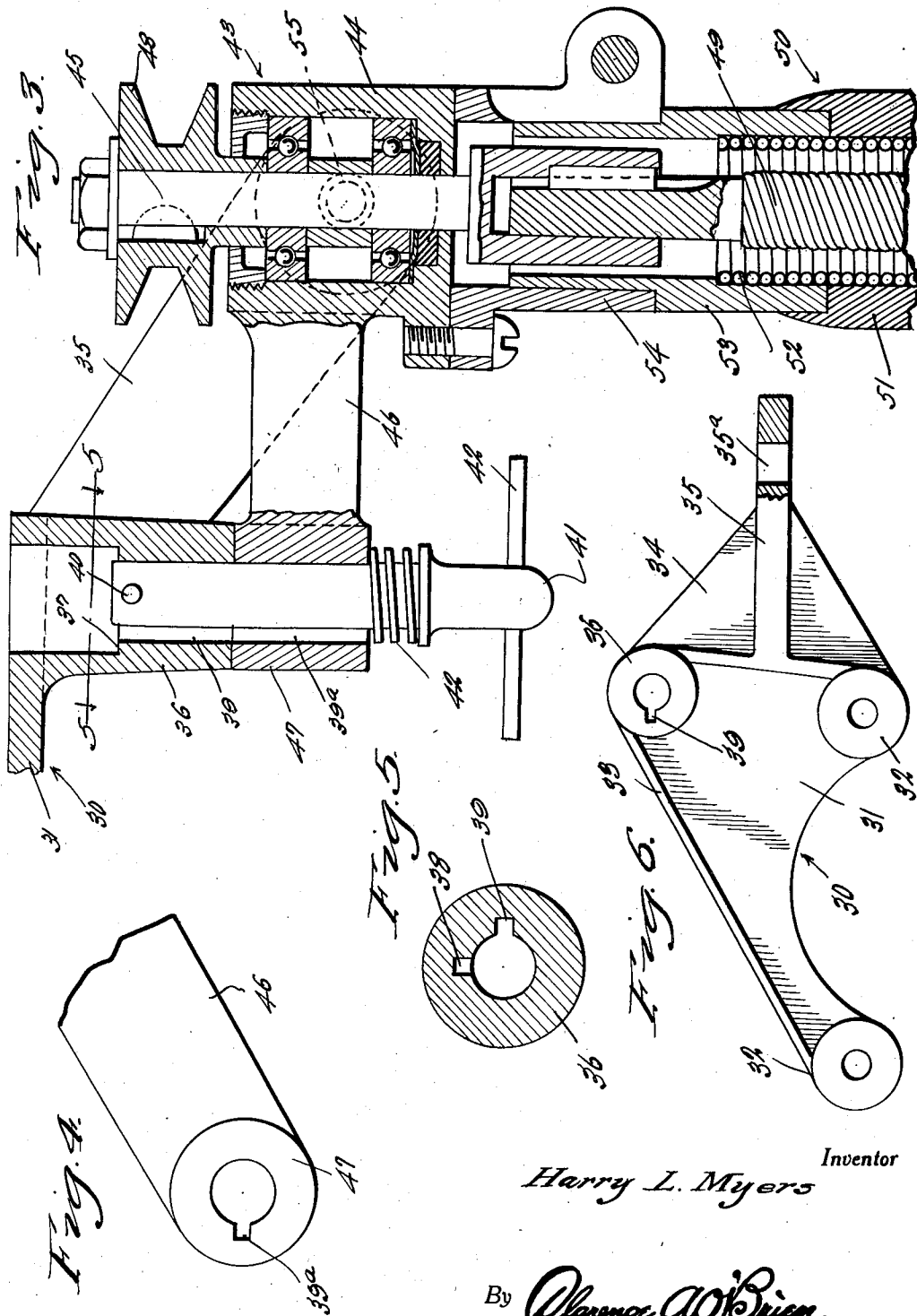
H. L. MYERS

1,914,280

EDGING ATTACHMENT FOR DRUM SANDING MACHINES

Filed July 11, 1932

4 Sheets-Sheet 3



Inventor

Harry L. Myers

By

Clarence A. O'Brien

Attorney

June 13, 1933.

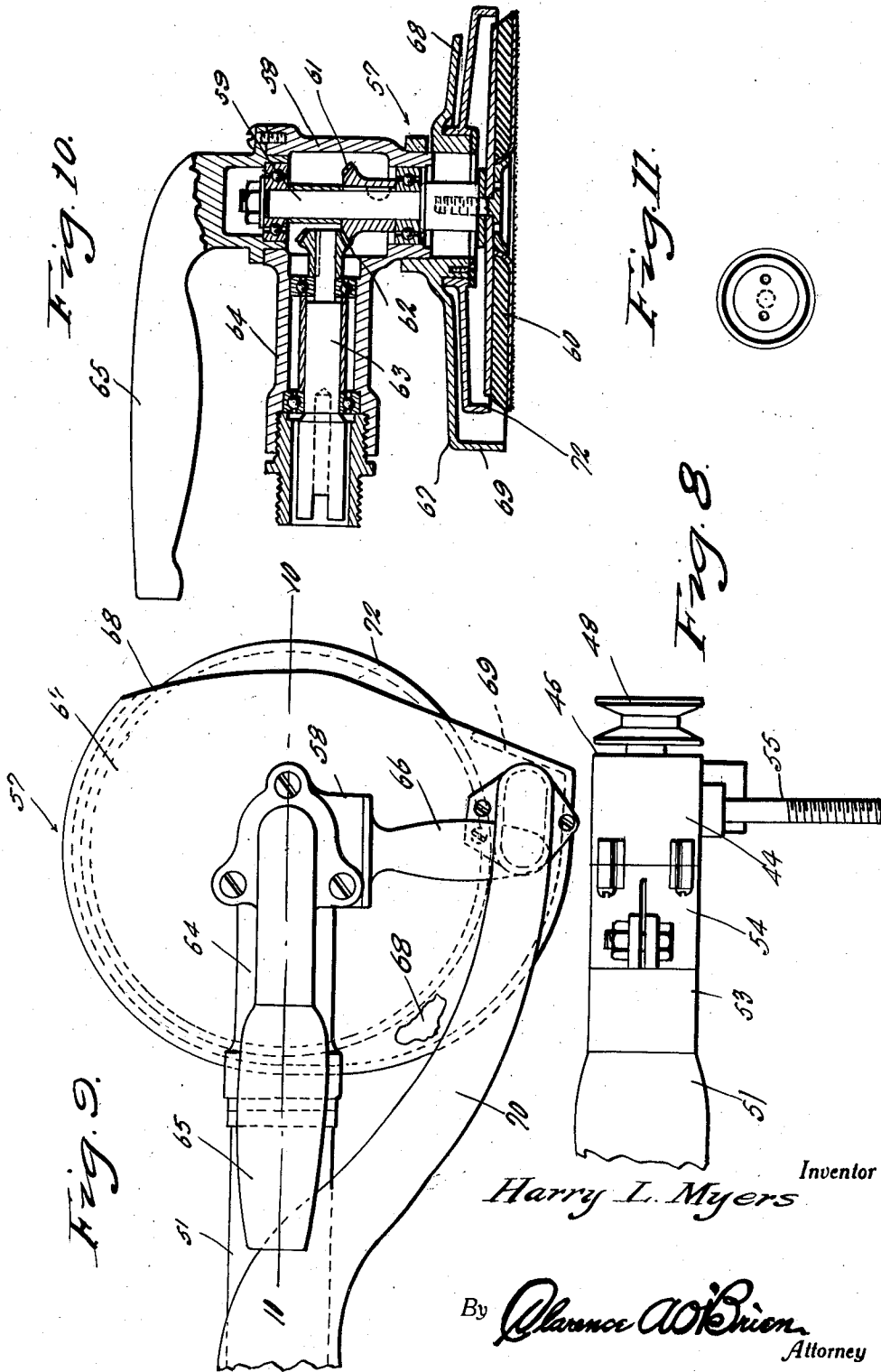
H. L. MYERS

1,914,280

EDGING ATTACHMENT FOR DRUM SANDING MACHINES

Filed July 11, 1932

4 Sheets-Sheet 4



Harry L. Myers

Inventor

By *Clarence A. O'Brien*
Attorney

UNITED STATES PATENT OFFICE

HARRY L. MYERS, OF TOLEDO, OHIO, ASSIGNOR TO THE AMERICAN FLOOR SURFACING MACHINE COMPANY, OF TOLEDO, OHIO, A CORPORATION OF OHIO

EDGING ATTACHMENT FOR DRUM SANDING MACHINES

Application filed July 11, 1932. Serial No. 621,968.

This invention relates to a novel rotary disc edging attachment for rotary drum sanding machines.

While the attachment is adaptable for use in connection with conventional marketed types of rotary drum sanding machines, it is particularly designed for use in conjunction with the well known American Universal drum sander, and especially for use as a supplement for the light weight surfacing machine, shown, described and claimed in my co-pending application identified as Serial No. 563,183, filed in the United States Patent Office under date of September 16, 1931.

The latter statement is made in view of the fact that the attachment herein illustrated is shown as applied to a light weight drum machine of the form shown in the aforesaid co-pending application.

Briefly, the aforementioned light weight surfacing machine comprises a portable electric motor-equipped frame characterized by a horizontal frontal rotary drum, said frame having appropriate transportation means and being provided with a dust collector which in accordance with the principles of the present invention is slightly amplified and expressly made to accommodate dust conveying means with which the attachment is provided.

One feature of novelty is predicated upon the specific construction and application of the edging attachment, said attachment being of a quick detachable type so that it may be employed as a supplement or accessory to the main machine, and being constructed with a power take-off pulley arranged to permit said pulley to be actuated from the existing type motor of said machine, whereby to promote simplicity and convenience and to materially add to the utility of said machine due to the fact that the attachment may be sold in conjunction therewith or separately therefrom to be applied to machines already in use without requiring alteration of the existing or stock parts.

Another feature of the attachment is found to exist in the clever and skillfully designed adaptation fixture and the means

permitting the power propulsion or transmission unit of the attachment to be readily applied and removed.

A further feature and advantage is predicated upon the incorporation in said attachment of a flexible drive shaft and an intimately associated flexible dust conveying hose, whereby to promote compactness and convenience in the association and use of these details.

A still further feature is found in the particular construction of the abrading head of the rotary disc edging device, wherein the disc is properly housed in a dust collector unit and wherein means is provided to prevent the marginal edge of the disc from coming into contact with any adjacent right angularly disposed surface such as a wall, washboard, door frame and the like in order to avoid marring and defacing thereof.

Briefly stated, the principal novelty is predicated upon the provision of a surface conditioning machine primarily intended for treating the marginal edge portion of a floor or wall at its point of juncture with a right angularly disposed wall or surface wherein the structure is characterized by a suitable portable body equipped with bearings, a power shaft mounted for rotation in the bearings, a surfacing disc or equivalent element operatively connected with the shaft, and anti-friction means supported from the body, wherein said means is freely movable with respect to the disc and cooperates with the edge portion of the disc in a manner to permit the means to be forced or pressed firmly against an adjacent relatively stationary wall, such as a wash board or the like, to space the edge of the disc from the wall to eliminate defacing the wall and to facilitate stabilizing and expeditious handling of the disc while it is moved bodily over the surface being treated, such as for example the floor.

Referring now to the accompanying illustrative drawings, wherein like numerals are employed to designate like parts throughout the multiplicity of views, it will be observed that:

Figure 1 is an elevational view of the light weight sanding machine of the type constitut-

ing the subject matter of the aforesaid co-
pending application, (Serial No. 563,183,
September 16, 1931) showing the manner in
which the novel rotary disc edging attach-
ment is attached thereto for use.

Figure 2 is a top plan view on an enlarged
scale with portions broken away and shown
in section to disclose the means for taking
care of the dust.

Figure 3 is a slightly enlarged sectional and
elevational view showing essential parts of
the adaptation fixture or plate and power
transmission and attaching unit, the section
being taken on the line 3—3 of Figure 1.

Figure 4 is a detail view of a coupling and
stabilizing arm forming a part of said unit.

Figure 5 is a detail section on the line 5—5
of Figure 3.

Figure 6 is an elevational and sectional
view of the adaptation plate or fixture.

Figure 7 is a perspective view of the cou-
pling key.

Figure 8 is a detail elevational view of the
pulley equipped power transmission unit.

Figure 9 is a plan view of the rotary disc
edger per se.

Figure 10 is a detail section taken approxi-
mately on the plane of the line 10—10 of Fig-
ure 9.

Figure 11 is a detail view.

Figure 12 is a section taken approximately
on the plane of the line 12—12 of Figure 1.

Referring now to the drawings, wherein
the complete operative structure is illustrat-
ed, I deem it advisable to first explain a few
of the essential features of the aforemen-
tioned light weight rotary drum surfacing
machine shown in co-pending application Ser-
ial No. 563,183, filed September 16, 1931.

The machine comprises a portable frame
which is approximately channel-shaped in
cross section and here denoted by the numeral
13. Supported in appropriate bearings in
the frontal portion of the frame is the hori-
zontal rotary abrading drum 14. This is pro-
vided at one end with a pulley 15 to accom-
modate a detachable V-belt 16 which belt is
trained over a complementary pulley 17 on the
electric motor 18.

In using the edger attachment to be here-
inafter detailed, the belt 16 is removed.
Therefore the drum 14 is not in use while the
edger attachment is employed. Instead a
somewhat shorter V-belt 19 is substituted for
operating the attachment.

The motor also serves through the medium
of a belt 20 to operate a pulley 21 (see Figure
2) which pulley drives a fan 22 in the fan
housing 23 constituting a part of the dust
collector. The dust collector also includes an
appropriately shaped duct 24 leading from
the drum to the fan housing and in order to
accommodate the attachment I add a supple-
mental duct or conduit 25. Therefore both
ducts connect with the same fan housing and

so that the ducts may be individually used
I provide a two-way gate valve 26.

The duct 25 is somewhat in the nature of
an elbow and projects through the rear end
of the frame of the machine to accommodate
the attachment. Merely as a matter of com-
pleteness I call attention to Figure 1 showing
the upstanding gooseneck pipe 27 forming a
part of the dust collector system and carry-
ing the accumulation bag 28. The numeral
29 merely designates the handle of the ma-
chine.

Referring now to the specific details of the
attachment, I first call attention to the nu-
meral 30 in Figure 6 which designates a fix-
ture such as may be conveniently termed an
adaptation bracket. This comprises an ap-
propriately shaped plate 31 which is shaped
to fit against one of the side walls of the ma-
chine frame as shown in Figure 1.

It is provided with bosses 32 apertured to
accommodate retaining bolts in the manner
shown. The plate is also formed with a mar-
ginal reinforcing flange 33 and reinforcing
web 34 for a laterally and outwardly extend-
ing apertured bracket arm 35. Also forming
an integral part of this plate is a protuber-
ance 36 which is shown in Figure 3 and
formed to provide a socket. In fact it is cast
to form an annular shoulder 37 having a de-
pression or notch 38 as shown in Figure 5
functioning as a keeper seat. Also along one
side is a horizontal clearance groove 39 for
the keeper pin 40 on the coupling key 41.
The key is shaped as shown and provided
with a handle 42.

The key and its retention spring 42 actu-
ally forms a part of the composite power
transmission unit 43 shown in Figure 3. The
unit embodies a shell 44 forming a bearing
enclosure to accommodate the bearing for the
rotary rigid shaft 45.

Forming an integral part of the shell is a
stabilizing and coupling arm 46 terminating
in a coupling eye 47 having a clearance
groove 39a in registration with the comple-
mental groove 39. The socket 36 and eye 47
form the companion portions of a coupling
to accommodate the rotary key and to pro-
vide means for quickly attaching this unit
portion of the attachment to the frame 13.

The shaft 45 is provided with a pulley 48
to accommodate the previously mentioned
belt 19. Likewise the shaft is operatively
connected with the rotary flexible core 49 of
the flexible shaft 50. The flexible shaft in-
cludes the usual rubber outer casing 51 and
internal lining 52 and ferrule 53 which is
telescopically joined to an attaching neck 54
carried by the bearing enclosure 44.

As seen in Figure 8, the bearing enclosure
44 is provided with a depending screw-
threaded retaining stud or bolt 55 whose
lower threaded end is adapted to pass
through the aperture 35a (see Figure 6) and

bracket arm 35. The threaded end of the bolt obviously serves to accommodate retaining nuts as shown in Figure 1.

Moreover, in this arrangement I provide a cushioning and vibration shock absorbing coil spring 56 which surrounds the bolt in the manner illustrated. This arrangement allows the bolt to be tightened to tension the spring in order to raise and lower the pulley 48 for tensioning the belt 19.

Attention is now invited to the particular construction of the rotary disc edger per se which may be unitarily referred to as an abrading head. As shown in Figures 9 and 10, this head 57 embodies a suitably shaped casting embodying a body portion 58 having bearings for the stub shaft 59 which drives the abrading disc 60 through the medium of a beveled gear 61.

Meshing with this gear is a companion gear 62 carried by the stub shaft 63 mounted in bearings in the tubular extension 64. The aforesaid flexible shaft is operatively connected with the stub shaft 63. The numerals 65 and 66 designate main and supplemental handgrips arranged at right angles and in proper receptive position to facilitate handling of the head as a unit.

The numeral 67 designates a shield-like dust collector shell or unit which has its front edge cut off on an irregular line as indicated at 68 in Figure 9 to space it away from the wall, washboard, trim and the like. On one side this shield is offset to form a dust collecting nozzle or intake 68, said nozzle being completed by the presence of the depending skirt or flange 69. The dust conducting hose 70 is attached to this intake and superimposed on and attached to the flexible drive shaft and extends along said shaft to a point within the vicinity of the machine where it is branched off as indicated at 71 in Figure 2 to permit it to be connected to the duct or elbow 25.

The numeral 72 in Figure 10 designates a rotary abutment or buffer in the form of a flanged disc swivelly mounted on the shield portion of the unit 67 and of a diameter slightly greater than the disc 60. The purpose of this is to permit the flange to come into rotating or riding contact with the washboard as illustrated in Figure 1 in order to space the edge of the disc 60 therefrom to prevent defacing of the woodwork. In fact, this materially aids in permitting the head to be literally rolled along the washboard, the thrust being absorbed by the freely swivelling flanged buffer disc 72.

Obviously, one edge portion of the disc protrudes beyond the edge 68 of the dust unit as shown in Figure 9. Otherwise stated, the unit is cut away to expose the effective woodwork contacting surface of the swivel disc.

In practice, the adaptation fixture or plate

30 is bolted to one of the side walls of the frame 13 in the position shown in Figure 1 so that it is always in readiness to receive the attachment. The attachment is used only when the attendant desires it for edging purposes. Otherwise stated, the main machine is used for surfacing the major portion of the floor and then the attachment is brought into play for conditioning the edge portion of said floor.

To bring the attachment in use, the valve 26 in Figure 2 is swung to the full line position shown in said figure, permitting the duct 25 to communicate with the fan housing 23. The hose end 71 is attached to said duct. The spring cushioned bolt or stud 55 is secured to the bracket arm 35. The arm 46 in Figure 3 is coupled through the medium of the key 41 to the socket or coupling element 36. In doing this, the keeper pin 40 is turned so that it may be slipped through the grooves 39a and 39 respectively after which the key is turned to seat the pin 40 in the keeper seat 38. Thus in a sense the unit 43 is yieldably and adjustably bolted to the bracket arm 35 as well as coupled to the plate 31 in order to distribute the stress and strain and provide a rigid operating connection.

Obviously, the arm 46 and its associated details serve primarily as a stabilizing means to permit effective operation of the pulley 48. As before indicated, the pulley 48 is operated through the medium of a special short belt 19 which is placed over the motor pulley 17 after the drum belt 16 has been removed.

I wish to have it understood that although I have shown the attachment applied to a particular type of rotary drum machine, it is not restricted to this type. In fact, this same attachment is applicable to the American Universal machine and to other similar drum machines by providing slight corrections in the mechanism.

In conclusion I again wish to emphasize the arrangement particularly illustrated in Fig. 10 comprising a portable surfacing head including the rotary driven shaft 59, the surfacing element or disc 60 operatively connected in any suitable manner with the shaft 59, and the buffer 72 mounted on the head for independent rotation with respect to the surfacing element and constructed in such a manner as to permit its peripheral edge, whether flanged or not, to cooperate with the marginal portions of the surfacing element 60 to serve as a thrust, anti-friction, and wall protection means.

I claim:

1. As a new product of manufacture, an abrading head for use in conjunction with an edger attachment of the class described comprising a casting including a body having bearings and a lateral extension having bearings, a stub shaft mounted in said first named bearings, an abrading disc connected

to said stub shaft, a second stub shaft mounted in the remaining bearings in said extension, gearing connecting said shafts together for operation in unison, a pair of upper and lower handles secured to said casting, a flanged dust unit connected to the lower end portion of the casting and partially embracing said disc, the frontal edge portion of said unit being cut away and without a flange, and one edge portion of said unit being offset with respect to the adjacent edge portion of the casing to provide a tapered dust intake, and a dust collecting hose connected with said intake, together with a rotary flanged disc swivelly mounted on said guard and interposed between the guard and abrading disc, said flanged disc being of a diameter greater than the abrading disc to permit the flanged edge thereof to protrude beyond the marginal edge of the disc to provide a rotary buffer to prevent the abrading disc from striking adjacent woodwork.

2. An edging attachment for a rotary drum sander of the class described comprising an adaptation plate adapted to be bolted to the sander machine frame, said plate being provided with a laterally projecting apertured bracket arm, a flexible shaft, an abrading head at the outer end of the shaft, a driving unit at the inner end of the shaft, said unit being provided with a pulley, and a retaining bolt adapted to be detachably connected with said bracket arm, a cushioning spring surrounding the bolt and co-operable with said arm, a stabilizing and connecting arm, and means for detachably coupling said arm to the plate.

3. An edging attachment of the class described comprising an adapter plate designed for detachable connection with a portable frame, said plate having a tubular protuberance defining a coupling socket, said socket having a clearance groove and a keeper seat, an arm formed integrally with said plate and apertured at its outer end, a flexible drive shaft, an abrading head operatively connected with the outer end thereof, a driving unit attached to the inner end thereof, said unit including a pulley equipped rigid shaft, a bearing enclosure for said shaft a lateral brace arm connected with said enclosure and terminating in a grooved eye adapted to be aligned with said socket, a spring-pressed key mounted for rotation in said eye, said key having a keeper pin at its inner end adapted to be passed through the grooves and seated in said keeper seat, said unit also including a spring equipped attaching bolt adapted to be detachably connected to the apertured end of said brace arm.

4. A structure of the class described comprising a portable surfacing head including a rotary driven shaft, a surfacing element operatively connected with said shaft, a dust col-

lector unit partially surrounding said element, and a buffer mounted on said head for independent rotation with respect to said surfacing element, said buffer being of a proportion to permit its peripheral edge to project beyond the marginal portions of the surfacing element.

5. A machine of the class described comprising an abrading head embodying a power driven shaft, a rotary abrading disc carried by said shaft, a disc-like buffer plate mounted for rotation on the head and disposed above said disc and having a depending marginal flange, said buffer being of a diameter greater than the abrading disc with the flange projecting beyond the marginal edge of the abrading disc in order to movably contact the woodwork.

6. A surface edging device comprising a body having bearings, a power shaft mounted for rotation in the bearings, a surfacing disc operatively connected with said shaft, and anti-friction means supported from said body, said means being freely movable with respect to said disc and co-operating with the edge portion of the disc in a manner to permit said means to be pressed firmly against an adjacent wall in a manner to space the edge of the disc from said wall to eliminate defacing and to facilitate stabilizing and expeditious handling of the disc while it is moved bodily over the surface being treated.

7. A surface edging device comprising a body having bearings, a power shaft mounted for rotation in the bearings, a surface conditioning disc operatively connected with said shaft, and anti-friction means supported from said body, said means being arranged with respect to the disc and having its outer marginal portion relatively and freely movable with respect to the edge portion of the disc in a manner to permit said means to be pressed and held firmly against an adjacent right angularly disposed surface while the disc is held against the surface being treated, whereby to space the edge of the disc from the first-named surface and to facilitate stabilizing and expeditious handling of the disc while it is moved longitudinally of the latter surface and held firmly down against the second-mentioned surface.

8. As a new product of manufacture, an edging attachment comprising a body having bearings, a shaft mounted for rotation in said bearings, a surfacing disc operatively connected to said shaft, a pair of upper and lower handles rigidly secured to said body in conveniently manipulated relationship, a relatively rigid dust collector unit connected to the lower end portion of the body and partially embracing the disc, the major portion of said unit being disposed in spaced parallelism above the disc, a rotary flanged annular washboard abutment swivelly mounted on the central portion of said unit

and interposed between the latter and surfacing disc and parallel to the central horizontal portion of the unit and disc, said abutment being of a diameter greater than the
5 abrading disc with the flange protruding beyond the marginal edge of the disc for the purposes described.

In testimony whereof I affix my signature.

HARRY L. MYERS.

10

15

20

25

30

35

40

45

50

55

60