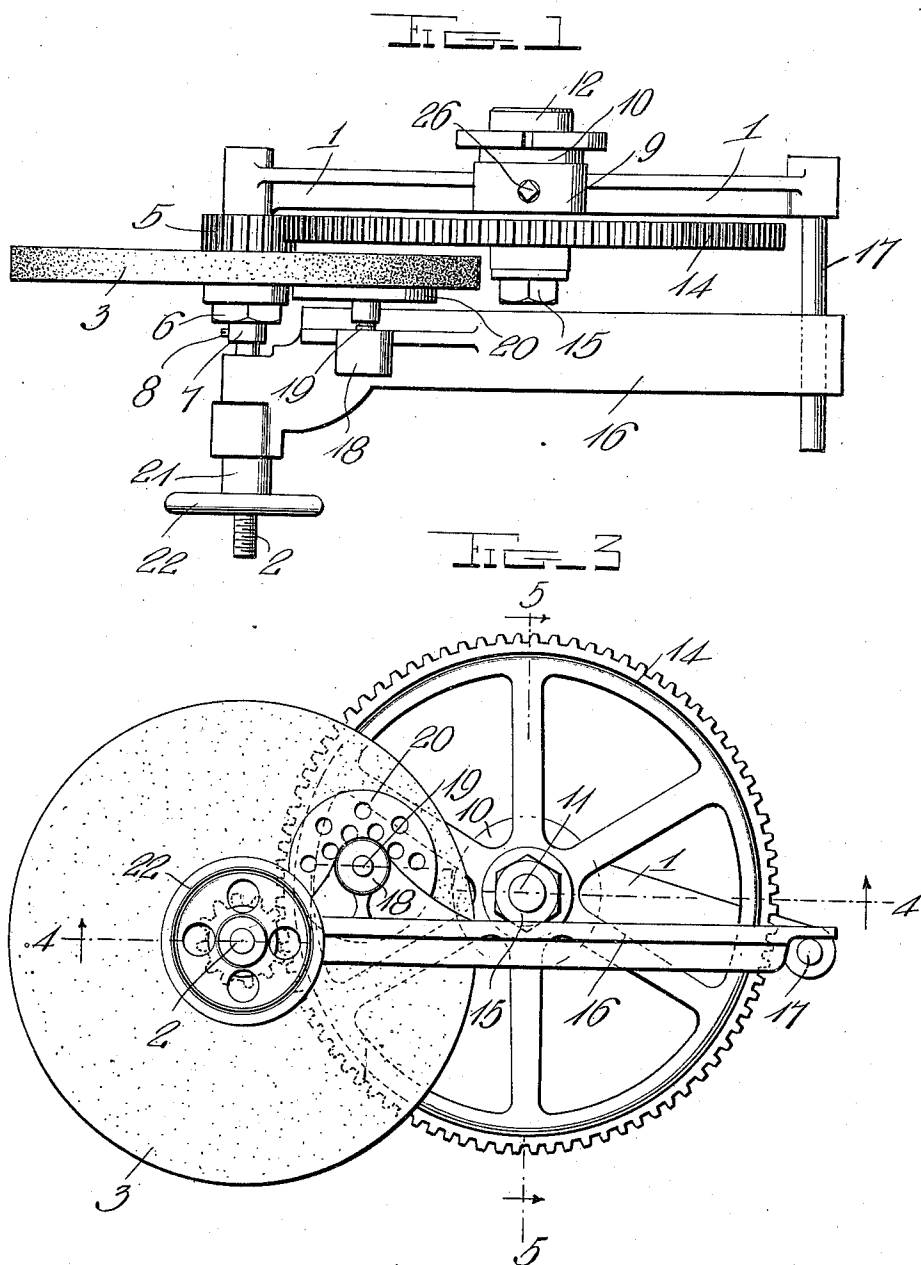


A. H. MARTIN.
KNIFE SHARPENING ATTACHMENT FOR MEAT CHOPPERS.
APPLICATION FILED DEC. 15, 1910.

996,269.

Patented June 27, 1911.

2 SHEETS-SHEET 1.



Witnesses

E. C. Martin

C. H. Griesbauer

Inventor

A. H. Martin

by

A. B. Wilson & Co.

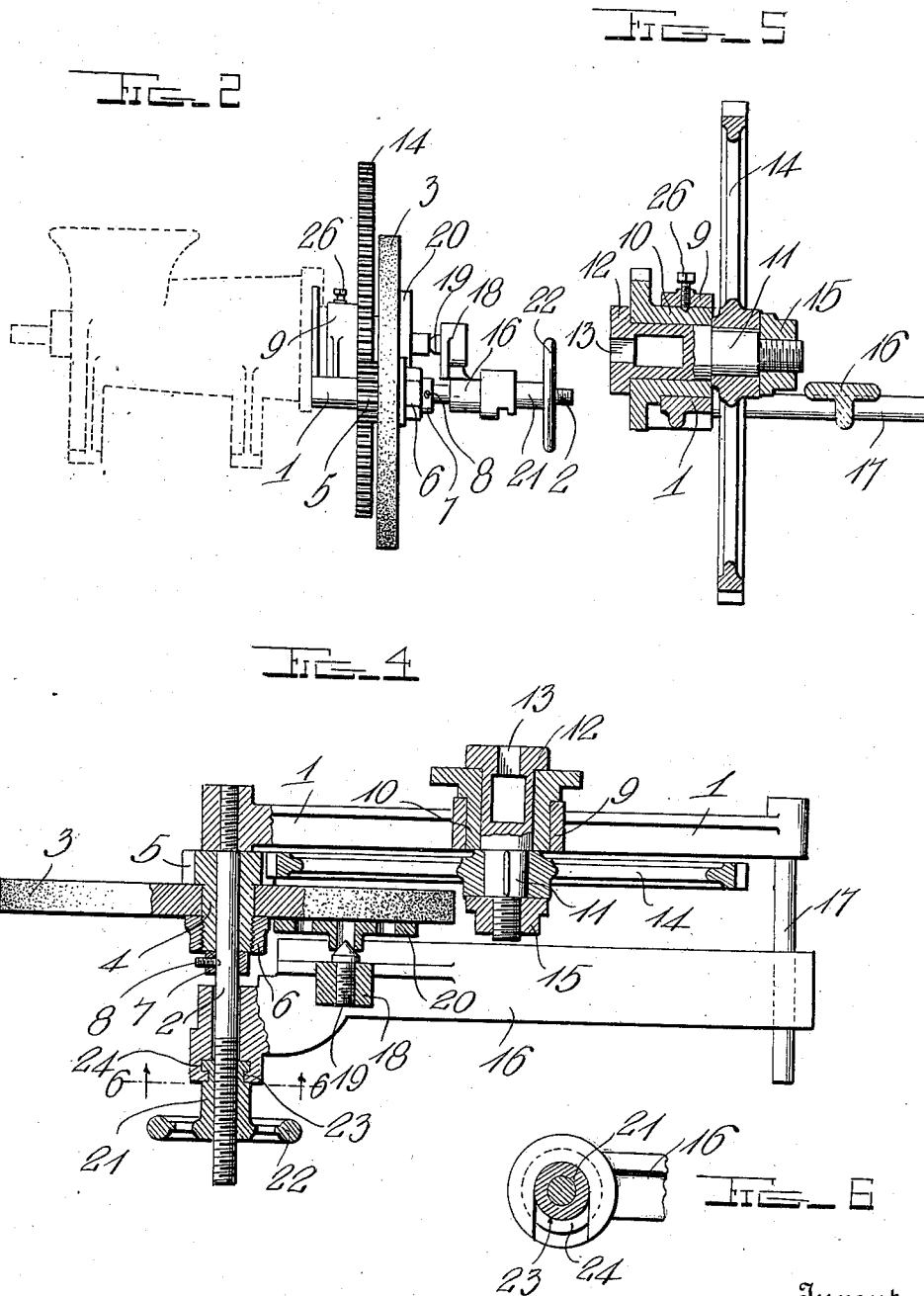
Attorneys

A. H. MARTIN.
KNIFE SHARPENING ATTACHMENT FOR MEAT CHOPPERS.
APPLICATION FILED DEC. 15, 1910.

996,269.

Patented June 27, 1911.

2 SHEETS-SHEET 2.



Witnesses

E. E. Martin

C. H. Gresham

Inventor

A. H. Martin

by *A. B. W. S. S. S. S.*

Attorneys

UNITED STATES PATENT OFFICE.

ARTHUR H. MARTIN, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO WILLIAM F. DODGE,
OF SOMERVILLE, MASSACHUSETTS.

KNIFE-SHARPENING ATTACHMENT FOR MEAT-CHOPPERS.

996,269.

Specification of Letters Patent. Patented June 27, 1911.

Application filed December 15, 1910. Serial No. 597,413.

To all whom it may concern:

Be it known that I, ARTHUR H. MARTIN, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Knife-Sharp-
5 ening Attachments for Meat-Choppers; and I do declare the following to be a full, clear, and exact description of the invention, such
10 as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to knife sharpening attachment for meat choppers.

15 One object of the invention is to provide a sharpening or grinding attachment adapted to be applied to and operated by a meat chopper for the purpose of sharpening the knives of the chopper or other edged tools.

20 Another object is to provide an attachment of this character which will be simple, strong, durable and inexpensive in construction, efficient and reliable in operation and which may be quickly and easily applied to
25 a meat chopper for operation and readily removed therefrom.

With the foregoing and other objects in view the invention consists of certain novel features of construction, combination and
30 arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a plan view of the attachment. Fig. 2
35 is a side view thereof showing the same attached to a meat chopper, the latter being shown in dotted lines. Fig. 3 is a front view of the attachment. Fig. 4 is an irregular, horizontal section on the line 4—4 of
40 Fig. 3. Fig. 5 is a vertical sectional view on the line 5—5 of Fig. 3. Fig. 6 is a vertical sectional view on the line 6—6 of Fig. 4.

In the embodiment of the invention I provide a supporting bar 1 in one end of which
45 is rigidly secured the shaft 2 of the grinding wheel 3. The wheel 3 is arranged on a sleeve or bushing 4 which is loosely mounted on the shaft 2 and has formed on one end a
50 spur gear pinion 5. The opposite end of the sleeve or bushing 4 is threaded and has secured thereon a clamping nut 6 between which and the pinion 5 is rigidly clamped the grinding wheel 3. The wheel 3 is thus
55 loosely mounted on the shaft 2 and is held

in position thereon adjacent the bar 1 by a collar 7 having arranged therein a set screw 8.

In the bar 1 between its ends, is formed a bearing 9 in which is arranged a bushing 60 10. In the bushing 10 is revolubly mounted a drive shaft 11 having on one end a stop flange 12 which engages the adjacent end of the bushing 10 as shown. In the flanged end of the shaft 11 is formed a squared 65 socket 13, the purpose of which will be hereinafter described. The opposite end of the shaft 11 projects beyond the inner side of the bearing 9 and is threaded and has fixedly secured thereto a spur gear 14. The gear 14 70 is held in place by a clamping nut 15 screwed onto the projecting threaded end of the shaft. The gear 14 meshes with the pinion 5 of the grinding wheel whereby when said gear 14 is revolved, the motion thereof 75 is imparted to the grinding wheel, thus revolving the same on the shaft 2.

Slidably and pivotally mounted on one end of the shaft 2 is a knife supporting arm 16, the opposite end of which rests on and 80 has a sliding engagement with a supporting pin 17 secured in the adjacent end of the supporting bar 1. On the arm 16, adjacent its pivoted inner end, is formed an upwardly projecting knife supporting lug 18, having 85 formed therein a threaded passage, with which is engaged a knife engaging stud 19, said stud having a threaded shank which is screwed into the threaded passage of the lug 18 and a conical outer end which is adapted 90 to engage the bearing aperture of the knife 20, when the latter is arranged in position for grinding. When the knife is thus engaged with the conical end of the stud 19, said knife will be held against the adjacent 95 side of the grinding wheel whereby, when the latter is revolved, the working surface of the knife will be evenly and smoothly ground and the edges of the cutting apertures therein thus sharpened. 100

In order to adjust the arm 16 for holding the knife in proper engagement with the grinding wheel I provide an adjusting nut 21 which has an operative engagement with the threaded outer end of the shaft 2, and is 105 provided with a hand wheel 22 whereby said nut may be screwed inwardly or outwardly on the shaft. In the inner end of the nut 21 is formed an annular groove 23, which provides an annular flange 24. The groove 23 110

and flange 24 on the inner end of the nut are engaged with a similar groove and flange formed in the outer side of the pivoted end of the arm whereby when said nut is screwed inwardly or outwardly on the threaded end of the shaft 2, the arm will be moved inwardly or outwardly, thereby regulating the pressure of the knife 20 on the grinding disk. The grooved and flanged side of the pivoted end of the arm 16 is cut away at the lower side of said end to permit the grooved and flanged inner end of the nut to be engaged therewith.

In applying the grinding device to the chopper, the bushing 10 and shaft 11 are removed from the supporting bar 1 by unscrewing the nut 15 after which the socket end of the shaft is inserted in the end of the chopper with the socket in said end engaged with the stud shaft on the end of the feed screw of the chopper, the shaft thus taking the place usually occupied by the knife which has been previously removed. The flanged end of the bushing is then engaged with the stud shaft of the feed screw and with the end of the screw casing, said bushing thus taking the place formerly occupied by the gage plate of the chopper which has also previously been removed. The flanged end of the bushing is provided with a notch 25 corresponding to the notch in the plate and adapted to engage the stop lug or stud on the casing which is usually engaged by the notch in the gage plate for holding the latter against revolving. After the shaft 11 and the bushing have been thus engaged with the chopper, the supporting bar of the machine is engaged with the bushing and secured thereto by a set screw 26, after which the gear wheel is engaged with and secured to the end of the shaft by the nut 15. The knife or gage plate of the chopper is then engaged with the stud 19 and the arm 16 adjusted to bring the knife or plate into engagement with the grinding wheel. When the parts are thus arranged the grinder is ready for operation by the driving mechanism of the chopper.

In addition to the use of the machine for grinding the knives of the chopper in the manner described, the same may be effectually employed for sharpening knives, cleavers, or other edged tools in the same manner as an ordinary grind stone is used.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention as defined in the appended claims.

What I claim is:

1. A grinding attachment for meat choppers or similar machines comprising a support adapted to fit in the end of the meat chopper casing, a grinding wheel carried thereby, a drive shaft journaled in the support and adapted to detachably engage the power shaft of the machine, and gearing connecting said drive shaft with the grinding wheel. 70

2. A device for the purpose set forth comprising a support adapted to fit in the end of the meat chopper casing, a grinding wheel carried thereby, a driving shaft journaled in the support and adapted to detachably engage the power shaft of the chopper, gearing connecting said shaft with the grinding wheel, and a knife rest carried by the support adjacent the grinding wheel. 80

3. In a grinding attachment for meat choppers a supporting bar, a grinding wheel revolubly mounted on one end of said bar, a drive shaft also revolubly mounted in said bar and geared to said grinding wheel, means on the supporting bar to engage the end of the chopper casing and connect the drive shaft with the power shaft of the meat chopper, and means to adjustably support the chopping knives in engagement with said grinding wheel. 85

4. In a grinding attachment for meat choppers a supporting bar, a grinding wheel revolubly mounted on one end thereof, a revolubly mounted drive shaft on the supporting bar geared to said grinding wheel, a bushing arranged on said shaft, means to operatively connect said shaft and bushing with the feed screw shaft of the meat chopper and lock the same in the chopper casing, a work supporting arm, means thereon to engage and support the chopping knives in engagement with said grinding wheel, and means to adjust said arm whereby the chopping knife is brought into operative engagement with the grinding wheel. 90

5. In a grinding attachment for meat choppers a supporting bar having in one end a shaft, and in its opposite end a work supporting pin, a grinding wheel revolubly mounted on said shaft, a drive bushing arranged in said supporting bar, a drive shaft revolubly mounted in said bushing, a gear wheel fixedly mounted on said shaft, a pinion operatively connected to said grinding wheel and meshing with said gear whereby the movement of said shaft is imparted to the grinding wheel, means whereby said shaft and bushing are operatively engaged with the feed screw shaft of the meat chopper, a work supporting arm having a sliding engagement with said shaft and work supporting pin, means on said arm to hold the cutting knives of the chopper in engagement with the grinding wheel, an adjusting nut having a screw threaded engagement with the wheel supporting shaft and hav- 130

ing a loose connection with said work supporting arm whereby when said nut is screwed inwardly or outwardly on the shaft, said arm will be adjusted to support the
5 knife in proper engagement with the grinding wheel, and a hand wheel on said nut.

6. A device for the purpose set forth comprising a support, a grinding wheel carried thereby, a drive shaft journaled in the support, adapted to fit within the chopper casing and detachably engage the power shaft of the chopper and arranged to operate the grinding wheel, a knife rest mounted on the support, and means to adjust said rest laterally to and from the side of the grinding wheel.
15 wheel.

7. A device for the purpose set forth comprising a support, a grinding wheel carried thereby, a drive shaft journaled in the support adapted to fit within the end of a chopper casing and detachably engage the power shaft therein and arranged to operate the
20

grinding wheel, an arm on the support parallel with the side of the grinding wheel, and means on said arm to hold a knife
25 against the side of the grinding wheel.

8. A device for the purpose set forth comprising a support, a grinding wheel carried thereby, a drive shaft journaled in the support adapted to detachably engage a power
30 shaft and arranged to operate the grinding wheel, an arm on the support parallel with the side of the grinding wheel, and a pin on said arm projecting toward the grinding wheel to hold a knife against the side
35 thereof.

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

ARTHUR H. MARTIN.

Witnesses:

S. LILLIAN RHOADES,
CHAUNCEY DAVIDSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
