

April 29, 1924.

1,492,457

A. HAYES

SHARPENING ATTACHMENT FOR MEAT GRINDERS

Filed Jan. 16, 1923

3 Sheets-Sheet 1

Fig. 1.

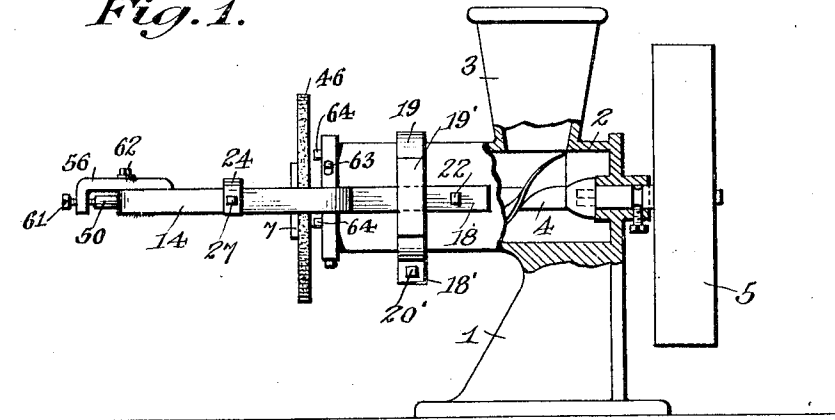


Fig. 8.

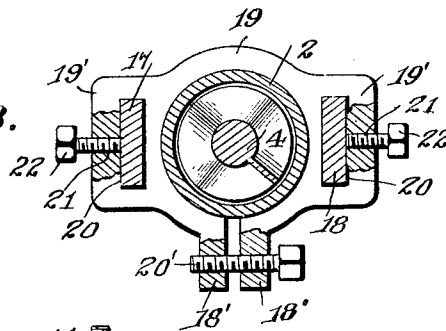
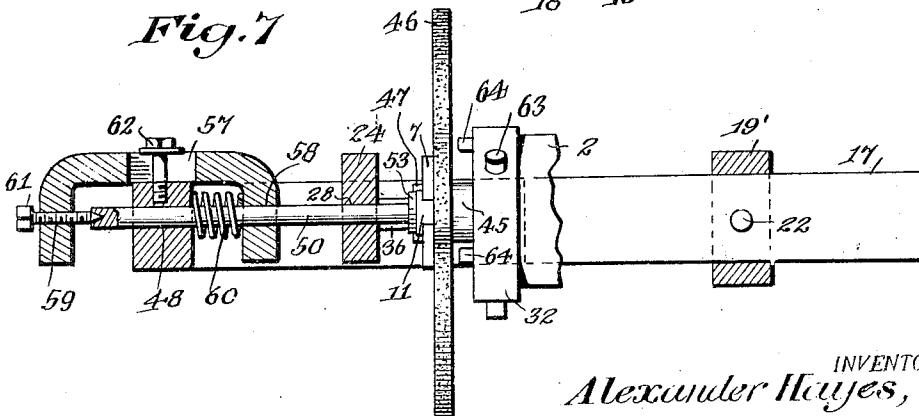


Fig. 7



INVENTOR.
Alexander Hayes,

BY

Geot. Kimmel. ATTORNEY.

April 29, 1924.

A. HAYES

1,492,457

SHARPENING ATTACHMENT FOR MEAT GRINDERS

Filed Jan. 16, 1923

3 Sheets-Sheet 2

Fig. 2.

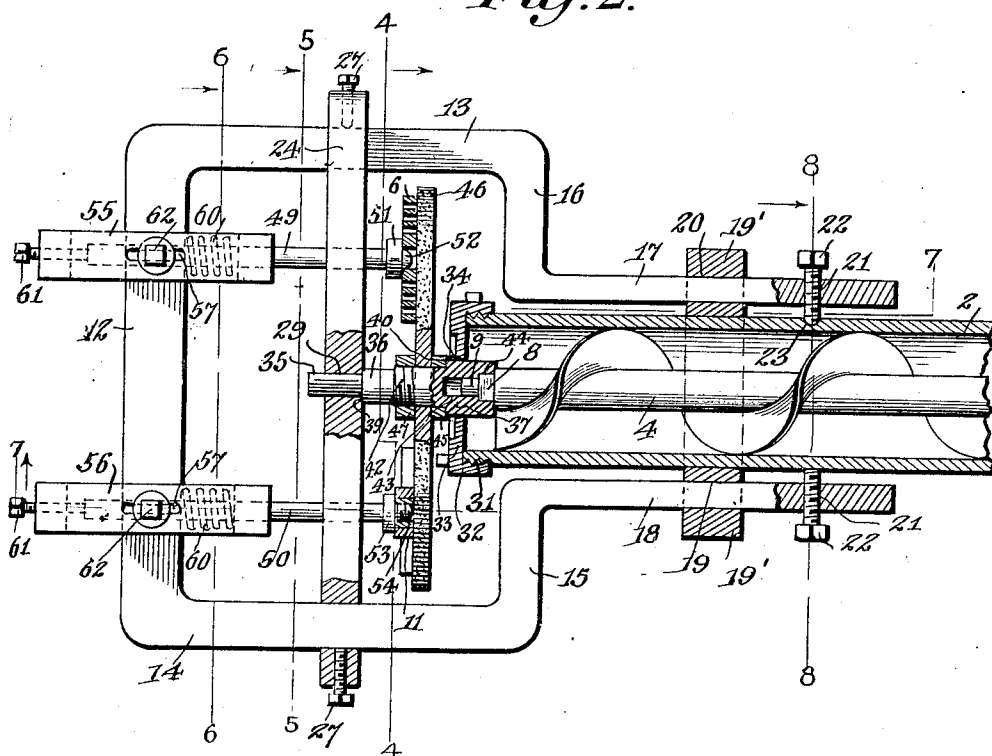
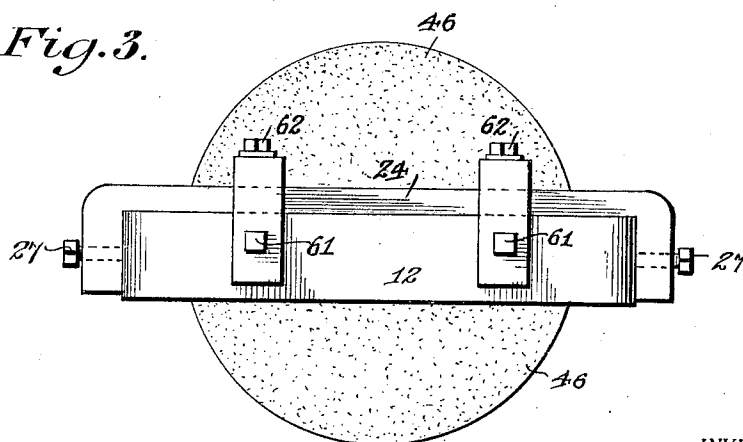


Fig. 3.



INVENTOR.
Alexander Hayes,

BY

Geo. P. Kimmel, ATTORNEY.

April 29, 1924.

A. HAYES

1,492,457

SHARPENING ATTACHMENT FOR MEAT GRINDERS

Filed Jan. 16, 1923

3 Sheets-Sheet 3

Fig. 4.

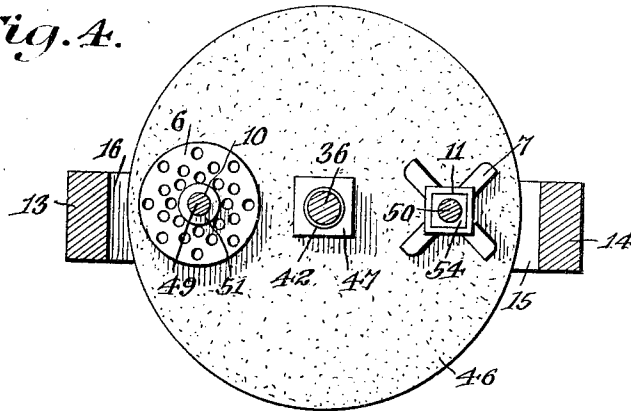


Fig. 5.

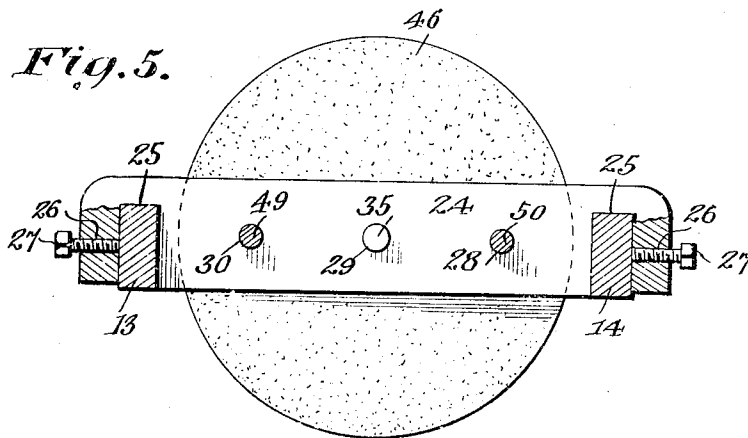
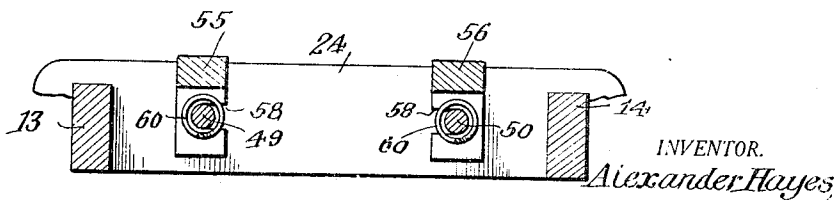


Fig. 6.



INVENTOR.

Alexander Hayes

BY

Geot. Kimmel

ATTORNEY.

UNITED STATES PATENT OFFICE.

ALEXANDER HAYES, OF THOMASVILLE, GEORGIA, ASSIGNOR TO C. R. HOLTON, OF THOMASVILLE, GEORGIA.

SHARPENING ATTACHMENT FOR MEAT GRINDERS.

Application filed January 16, 1923. Serial No. 612,985.

To all whom it may concern:

Be it known that I, ALEXANDER HAYES, a citizen of the United States, residing at Thomasville, in the county of Thomas and State of Georgia, have invented certain new and useful Improvements in Sharpening Attachments for Meat Grinders, of which the following is a specification.

This invention relates to a sharpening attachment designed primarily for use in connection with meat grinders, but it is to be understood that a sharpening attachment in accordance with this invention can be employed for any purposes wherein it is found applicable, and the invention has for its object to provide in a manner as hereinafter set forth an attachment of such class including a sharpening element and means for detachably connecting said element with the operating shaft of the grinder so as to be driven therefrom for the purpose of utilizing one side of said element to simultaneously sharpen or grind the cutting knife and apertured discharge plate of the grinder, as well as further permitting of the utilization of the edge of said element for sharpening the blades of other cutting tools or market appliances.

A further object of the invention is to provide in a manner as hereinafter referred to, an attachment for the purpose set forth including a pair of spring controlled holding elements for maintaining a pair of tools or other devices to be ground or sharpened yieldingly against the sharpening element of the attachment so as to prevent injury or damage to such tools or devices during the grinding or sharpening operation.

Further objects of the invention are to provide a sharpening attachment which is simple in its construction and arrangement, strong, durable, compact, readily connected up in position to be driven from a driving means therefor, efficient and convenient in its use, and comparatively inexpensive.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying

drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which fall within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:—

Figure 1 is a side elevation, broken away, of a meat grinder showing the adaptation therewith of a sharpening attachment in accordance with this invention.

Fig. 2 is a sectional plan of the attachment illustrating the same detachably connected with the cylinder of a meat grinder and also showing the sharpening element of the attachment connected to the operating shaft of the grinder for the purpose of driving said sharpening element.

Fig. 3 is an end elevation of the attachment.

Fig. 4 is a section on line 4—4 of Fig. 2.

Fig. 5 is a section on line 5—5 of Fig. 2.

Fig. 6 is a section on line 6—6 of Fig. 2.

Fig. 7 is a section on line 7—7 of Fig. 2.

Fig. 8 is a section on line 8—8 of Fig. 2.

Referring to the drawings in detail, 1 denotes the base, 2 the cylinder, 3 the hopper, and 4 the operating shaft of a meat grinder. The shaft 4 is in the form of an auger or provided with a conveying element. An operating means for the shaft 4 is indicated at 5.

In meat grinding devices, of the known type, the cylinder 2 at one end, is provided at one end with an apertured discharge plate and in proximity to said plate with a cutting element. The apertured discharge plate is secured to the cylinder 2 by a flanged band. The shaft 4 is mounted at one end in the apertured discharge plate. The cutter element and apertured discharge plate are not illustrated in position with respect to the cylinder 2, in Fig. 2, but have been removed from said cylinder and arranged in position to be ground or sharpened, as clearly shown in Figs. 2 and 4. The apertured discharge plate is indicated at 6, and the cutting element at 7.

For the purpose of connecting the shaft 4,

with the plate 6, as well as the cutting element 7, and also for driving the sharpening element of the device from the shaft 4, the said sharpening element will be presently referred to, the shaft 4 has one end terminal thereof provided with a reduced polygonal portion 8 and a reduced cylindrical portion 9. When the plate 6 and cutter element 7, are mounted at the end of the cylinder 2, the reduced cylindrical portion 9 extends into a centrally arranged opening 10 formed in the plate 6, and the cutter element 7, is formed with a polygonal hub 11, for the purpose of mounting on the polygonal shaped reduced portion 8 of the shaft 4, and by this arrangement, the cutter element 7 will be carried with the shaft 4 and the latter will be rotatably supported within the plate 6. The providing of the shaft 4, with the reduced polygonal shaped portion 8 and the reduced cylindrical portion 9, is a part of this invention and is utilized for operatively driving the sharpening element of the attachment.

The attachment includes a body portion consisting of a supporting frame and which is formed of a top member 12, side members 13, 14, a pair of rear members 15, 16, and a pair of connecting arms 17, 18, which project respectively from the rear members 15, 16. Mounted on the cylinder 2, is a combined coupling and supporting element, indicated at 19, and consisting of a split flanged collar formed with a pair of oppositely extending lateral extensions 19'. The flanges of the collar 19 are indicated at 18', and are connected together by a clamping screw 20' which threadingly engages with the flanges 18'. Each of the extensions 19' is formed with a rectangular slot 20, and through one of said slits 20 extends the arm 17 and through the other slot 20 extends the arm 18. The arm 17, as well as the arm 18, is provided with an opening 21, having a threaded wall and engaging with the threaded walls of said openings 21, are clamping screws 22, which engage in seats 23, formed in the periphery of the cylinder 2, and by this arrangement the body portion of the attachment is secured to and in spaced relation with respect to the cylinder 2.

Overlapping and supported by the side members 13, 14, of the body portion of the attachment, is a supporting bar 24, and which is provided near each end with a vertically disposed slot 25, and extended into the slot 25, are the side members 13, 14, of the body portion of the attachment. Each end of the bar 24, is formed with an opening 26, having a threaded wall, and engaging with the threaded wall is a clamping screw 27, which abuts against the side member of the body portion and clamps the bar 24 in position. The bar 24 is formed with a pair of openings 28 and 30 and arranged between

the openings 28 and 30, is an opening 29. The function of the openings 28, 29, and 30 will be presently referred to.

The cylinder 2, at one end is formed with peripheral threads 31, and threadingly engaging with the threads 31, is the threaded flange 32, of a disk 33, which is formed with a central opening 34. Extended through the opening 34, of the disk 33, and operatively connected with the shaft 4, is a grinding or sharpening element driving shaft of step formation and consists of the portions 35, 36 and 37 of different diameters. The portion 35 which is of the smallest diameter, is arranged at the outer end of the shaft, the portion 37 is of the greatest diameter and arranged at the inner end of the shaft, the portion 36 is of less diameter than the portion 37, but of greater diameter than the portion 35. The portions of different diameters of the shaft, provide the shoulders 39 and 40. The portion 36 of the shaft is provided with threads 42. The portions 36 and 37 of the shaft are formed with a pocket, one part of which is cylindrical, as at 43, and the other part of which is polygonal as at 44. The reduced portion 35 of the shaft is mounted in the opening 29 in the bar 24, and the shoulder 39 abuts against one face of the bar 24. Mounted on the portion 36 of the shaft and abutting against the shoulder 40 is a collar 45. When the shaft is set up in operative position for the purpose of driving the grinding or sharpening element, the polygonal-shaped portion 8 of the shaft 4 is seated in the polygonal-shaped portion 44 of the socket and the cylindrical portion 9 of the shaft 4 extends into the cylindrical portion of the socket. The manner of setting up the grinding or sharpening element driving shaft with respect to the shaft 4 of the meat grinder is illustrated in Fig. 2.

The grinding or sharpening element is in the form of a circular disk, constructed of any suitable abrading material, preferably emery, and is indicated at 46. The disk 46 is of substantial diameter, and is formed with a centrally disposed opening 47, of a diameter to receive the portion 36 of its driving shaft and the said disk 46 is positioned against the collar 45, and retained in position on the driving shaft therefor, through the medium of a nut 47, which engages with the threads 42 on the portion 36 of the driving shaft. The shoulders 39 and 40 prevent endwise thrust of the driving shaft for the sharpening element during the operation of said shaft.

The front member 12 of the supporting frame is formed with a pair of openings 48, one of which is in alinement with the opening 30, and the other of which is in alinement with the opening 28. Extending through one of the openings 48 is a holding

rod 49 and extending through the other opening 48 is a holding rod 50. The inner end of the rod 49 is provided with a collar 51 and a rounded extension 52. The inner end of the rod 50 is formed with a collar 53 and a threaded extension 54. Mounted on the member 12, near each end thereof, is an inverted yoke-shaped support, and one of said supports is indicated at 55 and the other at 56. Each of said supports has its top formed with a lengthwise slot 57. The inner arm of each of said supports is formed with an opening 58 and the outer arm of each of said supports is formed with an opening 59 having a threaded wall. The rod 49 extends through the opening 30 in the bar 24, the opening 58 in the support 55, and through an opening 48, as well as projects outwardly from the member 12. The rod 50 extends through the opening 28, and through the opening 58 of the support 56, and thence through the other opening 48 in the member 12 and projects outwardly. Carried by the rods 49 and 50, and interposed between the member 12 and the inner arms of the yoke-shaped supports, is a coiled spring 60. Carried by the outer arm of each of the yoke-shaped supports, is an adjusting screw 61, which engages with the threaded wall of the opening 59. Extending through the slot 57, is a clamping screw 62, which engages with the member 12, and is utilized for clamping the yoke-shaped support in its adjusted position.

The holding bars 49 and 50, in connection with the elements which associate therewith, are employed for yieldingly supporting the discharge plate 6, and cutter element 7, against one side of the element 46, as clearly shown in Figs. 2 and 4. The rod 49 has its extension 52 extend in the central opening of the plate 6, and the rod 50 has its threaded extension threadingly engaging with the cutter element 7, as shown in Fig. 2.

The disk 33 is provided with lugs 63, on the flange 32 thereof, to facilitate the positioning and the removing of the disk 33 when occasion so requires, and said disk 33 is also provided with lugs 64, which can also be employed to facilitate the removal and positioning of the disk 33, and furthermore act as spacing means between the element 46 and the disk 33.

The element 46 is of the necessary diameter, so that one side thereof, can be employed to grind or sharpen the plate 6 and cutting element 7, and during the operation of the element 46, with respect to the plate 6 and cutter element 7, the edge of the element 46, can be employed simultaneously for sharpening tools or other appliances.

When the attachment is not in use, it is removed from the cylinder 2 and the plate 6 and cutter element 7 mounted in position

at the end of the cylinder 2 and upon the shaft 4, that is to say, the reduced cylindrical portion 9 is extended into the central opening of the plate 6 and the polygonal shaped portion 8 extended into the cutter element 7, and by this arrangement, the latter will be operated when the shaft 4 is driven, and further the shaft 4 will be rotatably mounted in the plate 6. When it is desired to employ the grinding attachment, the plate 6 and cutter element are removed, the coupling device 19 is secured to the cylinder 2, the disk 33 mounted in position with respect to the open end of the cylinder 4, and the driving shaft for the element 46 operatively connected with the shaft 4, whereby when the latter is driven, the shaft of the element 46 will be carried therewith, causing the element 46 to revolve and grind or sharpen the plate 6 and cutter element 7 which have been mounted on the bars 49 and 50 and positioned in yielding contact with respect to one side of the element 46.

From the foregoing description taken in connection with the accompanying drawings, a grinding attachment is set up which not only provides means for grinding or sharpening the discharge plates and cutter elements of a grinding machine, but can simultaneously be used for sharpening or grinding tools or other devices, and although the preferred embodiment is as illustrated, yet it is to be understood that changes in the details of construction can be had without departing from the spirit of the invention as claimed.

What I claim is:—

1. A grinding attachment comprising a pair of supporting elements, a driving shaft mounted therein and provided with a plurality of shoulders abutting thereagainst to arrest lengthwise movement of the shaft, said shaft further provided at one end with a socket having a polygonal portion for connecting the shaft with an operating means therefor, an abrading element mounted on and secured to said shaft intermediate the ends thereof, and a plurality of holding elements for yieldingly maintaining devices to be acted on by said abrading element against one side of the latter.

2. A grinding attachment comprising a plurality of supporting elements, a driven shaft mounted therein, an abrading element carried by and bodily movable with said shaft, and a pair of holding elements for yieldingly maintaining devices to be acted on by said abrading element against one side of the latter.

3. A grinding attachment comprising a body portion provided with means for detachably connecting it in position, a pair of supporting elements, one of said elements carried by said body portion and the other

arranged within and independent of said body portion, a driven shaft mounted in said elements, an abrading element carried by and bodily movable with said shaft and interposed between said elements, and a pair of holding elements extending through that supporting element carried by the body portion for yieldingly maintaining devices to be acted on by said abrading element against one side of the latter.

4. A grinding attachment comprising an abrading element operating shaft provided with a socket at one end having a cylindrical and a polygonal portion, driving means for said shaft having a cylindrical and a polygonal portion engaging respectively with said cylindrical and polygonal portion of said socket, whereby said shaft is operatively connected to said means, an abrading element carried by said shaft, a pair of supporting elements for said shaft, and said shaft having means abutting against said supporting elements to arrest lengthwise thrust of the shaft during the operation thereof

5. A grinding attachment comprising a body portion having a pair of arms, means for detachably connecting said arms with the cylinder of a meat grinder, a pair of supporting elements, one of said elements carried by said body portion and the other of said elements arranged within the body portion and adapted to be detachably connected to the cylinder of a meat grinder, an abrading element operating shaft carried by said supporting elements, means to provide for the driving of said shaft from the meat grinder, an abrading element carried by said shaft and interposed between said supporting elements, and holding elements carried by said body portion and that supporting element carried by the latter and providing means for yieldingly maintaining the devices to be acted on by said abrading element against one side of the latter.

6. A grinding attachment comprising a body portion having a pair of arms, means for detachably connecting said arms with the cylinder of a meat grinder, a pair of supporting elements, one of said elements carried by said body portion and the other of said elements arranged within the body portion and adapted to be detachably connected to the cylinder of a meat grinder, an abrading element operating shaft carried by said supporting elements, means to provide for the driving of said shaft from the meat grinder, an abrading element carried by said shaft and interposed between said supporting elements, holding elements carried by said body portion and that supporting element carried by the latter and providing means for yieldingly maintaining the devices to be acted on by said abrading

element against one side of the latter, and means to provide for the adjusting of said holding elements.

7. A grinding attachment comprising a supporting frame, means for detachably securing it in position, a supporting element carried by the frame, a support, an abrading disk operating shaft journaled in said element and support, an abrading disk secured to the shaft and interposed between said element and support, and a plurality of holding elements supported by the frame and extending through said supporting element and provided with means for yieldingly maintaining devices to be acted on by said disk against one side thereof.

8. A grinding attachment comprising a supporting frame, a supporting element carried thereby, a support, an abrading disk operating shaft journaled in said element and support, an abrading disk secured to the shaft and interposed between said element and support, and means for yieldingly maintaining a device to be acted on by said disk against one side of the latter, said means extended through said element and supported by said frame.

9. A grinding attachment comprising a supporting frame, means for detachably securing it in position, a supporting element carried by the frame, a support, an abrading disk operating shaft journaled in said element and support, an abrading disk secured to the shaft and interposed between said element and support, a plurality of holding means supported by the frame and extending through said supporting element and provided with means for yieldingly maintaining devices to be acted on by said disk against one side thereof, and means for adjusting said holding elements.

10. A grinding attachment comprising a supporting frame, a supporting element carried thereby, a support, an abrading disk operating shaft journaled in said element and support, an abrading disk secured to the shaft and interposed between said element and support, means for yieldingly maintaining a device to be acted on by said disk against one side of the latter, said means extended through said element and supported by said frame, and means cooperating with said frame to provide for the adjusting of the means for yieldingly maintaining the device to be acted on against the disk.

11. A grinding attachment comprising a supporting frame, means for detachably securing it in position, a supporting element carried by the frame, a support, an abrading disk operating shaft journaled in said element and support, an abrading disk secured to the shaft and interposed between said element and support, a plurality of

holding means supported by the frame and extending through said supporting element and provided with means for yieldingly maintaining devices to be acted on by said disk against one side thereof, and means for adjusting said holding elements, said shaft provided with means cooperating with said supporting element and support to arrest lengthwise thrust of the shaft during the operation thereof.

In testimony whereof, I affix my signature hereto.

10

ALEXANDER HAYES.