

No. 661,013.

Patented Oct. 30, 1900.

R. V. JONES.
MEAT GRINDER KNIFE SHARPENER.

(Application filed July 30, 1900.)

(No Model.)

Figs. 2.

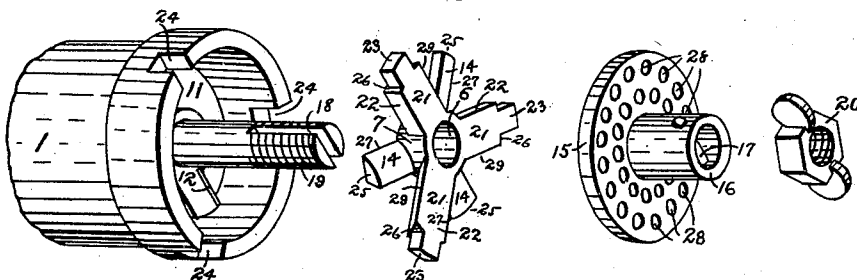


Fig. 3.

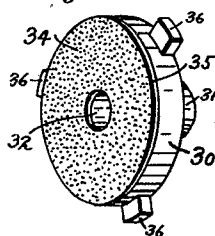


Fig. 1.

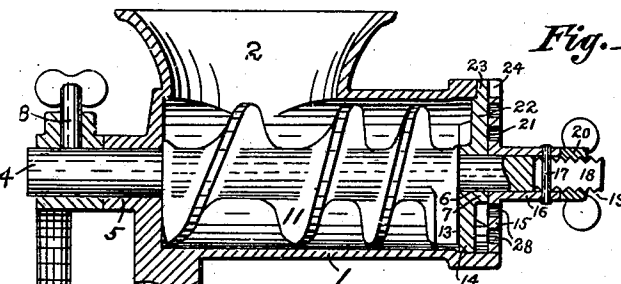


Fig. 5.

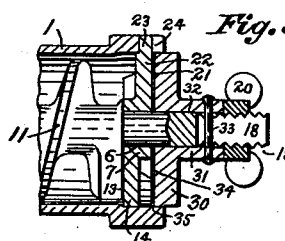


Fig. 6.

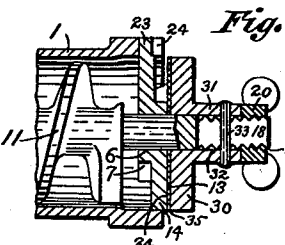
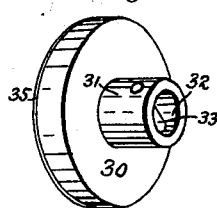


Fig. 4.



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UNITED STATES PATENT OFFICE.

ROBERT V. JONES, OF NORTH INDUSTRY, OHIO, ASSIGNOR OF ONE-HALF TO
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MEAT-GRINDER-KNIFE SHARPENER.

SPECIFICATION forming part of Letters Patent No. 661,013, dated October 30, 1900.

Application filed July 30, 1900. Serial No. 25,214. (No model.)

To all whom it may concern:

Be it known that I, ROBERT V. JONES, a citizen of the United States, residing at North Industry, in the county of Stark and State of Ohio, have invented a new and useful Meat-Grinder-Knife Sharpener, of which the following is a specification.

My invention relates to an improved device for sharpening the knives in that class of meat-grinding machines in which the meat is ground or cut by knives operating against the face of a perforated disk or other suitable shearing edge; and the objects of the improvement are to provide means by which an unskilled user can readily sharpen said knives and by which the respective knives are always ground true with reference to each other and in the proper plane at each sharpening. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an elevation, partly in section, of an ordinary type of meat-grinding machine. Figs. 2 are detached isometric views of the parts concerned in cutting or grinding, all in relative position for assembling. Fig. 3 is a detached isometric view of a sharpening-disk, showing its grinding-face; Fig. 4, a detached isometric view of a sharpening-disk, showing its reverse side; Fig. 5, a sectional view showing the sharpening-disk in place for grinding the forward set of knives, and Fig. 6 a sectional view showing the sharpening-disk in place for grinding the rear set of knives.

Similar numerals refer to similar parts throughout the several views.

The barrel 1, with its hopper 2 and attaching-post 3, is of any well-known form and construction and has mounted in its axis the shaft 4, which turns in a journal-bearing 5 at the rear end of said barrel and in a journal-bearing 6 in the knife-collar 7 at the forward end of said barrel. At the projecting rear end of the shaft 4 is securely attached, by a set-screw 8 or otherwise, a crank 9, having a handle 10.

Attached to or formed on the shaft 4 within the barrel 1 is the spiral or auger-shaped flange 11, which substantially fills the barrel in its diameter, and on being properly rotated

forces meat, which is fed into the hopper 2, forward through the barrel. The spiral flange 11 terminates at its forward end in the cutting or shearing edge 12, which is adjusted against the faces 13 of the knives 14, which radiate from the knife-collar 7 at its rear end. (See Figs. 2.)

A perforated disk 15 is neatly mounted on the shaft 4 in front of the knife-collar 7 and has a forward projecting sleeve 16, with a rod or pin 17 passing therethrough for entering and engaging the sides of the longitudinal slot 18, formed in the forward end of the shaft 4, by means of which the disk 15 is rotated with said shaft.

An external thread 19 is cut on the forward end of the shaft 4, which receives the screw-threaded nut 20, by means of which the rear face of the perforated disk 15 is adjusted snugly against the faces 21 of the knives 22, which radiate from the knife-collar 7 at its forward end.

The outer ends of the knives 22 are provided with the extensions or lugs 23, which enter corresponding notches 24 in the forward rim of the barrel 1, and thereby hold the knives from rotating. The outer ends 25 of the knives 14 and the shoulders 26, formed at the base of the lugs 23, are equally distant from the axis of the knife-collar 7 and conform substantially with the inner face of the barrel 1, thereby keeping the journal-bearing 6 in the middle thereof.

In use the meat to be cut or ground is fed into the hopper 2 and carried forward in the barrel 1 by rotation of the spiral flange 11. The meat is first partially reduced by action of the cutting or shearing edge 12 against the cutting edges 27 of the knives 14. Thence it is forced through the perforations 28 in the disk 15, and in the rotation of said disk the various flows of meat are intermittently cut by action of the cutting edge 29 of the knives 22 against the rear face of the disk 15 and the edges of the perforations 28 therethrough.

It will be readily seen that for a proper and efficient working of such a machine it is essential that all of the knives should have a good sharp cutting edge and that the cutting faces and edges of each respective set of knives must always be in the same plane and

that this plane must be perpendicular to the axis of the shaft which carries and rotates the reciprocal cutting edges. To accomplish this, I provide the sharpening-disk 30, which as applied to the particular machine illustrated is provided with a forward-extending sleeve 31, concentric with its axis, through which disk and sleeve passes the axial hole 32, adapted to neatly fit the forward end of the shaft 4. A rod or pin 33 is provided through the sleeve 31, adapted to enter and engage the sides of the slot 18 in the forward end of said shaft. The sharpening-disk 30 is either made of a gritty or grinding material, or when not so made is provided with a grinding surface or veneer on its face 34. I prefer to make the same by gluing or cementing a sheet of emery-cloth 35 on this face of the disk 30. When one sheet of emery-cloth is worn smooth, another may be glued or cemented thereon, and so on, until it is found desirable to remove them by soaking or otherwise, when the application can be repeated. An unskilled user is thus enabled to keep the grinding-face 34 of the sharpening-disk true and sharp without a frequent dressing or cutting of the same, which would otherwise be necessary.

To grind the faces 21, and thereby sharpen the cutting edges 29 of the knives 22, the nut 20 is turned off the end of the shaft 4, the perforated disk 15 removed, and the sharpening-disk 30 substituted therefor, with its grinding-face 34 presented to the faces 21 of the knives 22, against which it is adjustably held by replacing the nut 20 and turning it against the forward end of the sleeve 31 of said disk. (See Fig. 5.) The knives 22 can then be sharpened by rotating the shaft 4 by its crank-handle 10, and thereby the disk 30 by its engaging pin 33. This rotation is preferably done first toward the cutting edge 29 of the knives and then by a reverse motion to take off such wire-edge as may be formed. A constant and sufficient pressure of the grinding-face 34 of the sharpening-disk is maintained by adjustment of the nut 20. The faces 13 and cutting edges 27 of the knives 14 can be ground and sharpened in a similar

manner by merely reversing the relative position of the knives 14 and 22 and their collar 7 on the shaft 4, as illustrated in Fig. 6.

While my invention has been illustrated and described with reference to a meat-grinding machine in which the knives are stationary as regards rotation, it will be understood that an application of the sharpening-disk can be made to machines in which the knives rotate and the shearing edges are stationary. For instance, in the machine illustrated, if it be desired to grind the forward termination of the spiral flange 11, thereby sharpening the shearing edge 12, the disk 30 is adapted thereto by merely providing the lugs 36 on its periphery, as shown in Fig. 4. By removing the knives 14 and 22 and the other outer parts the disk 30 can be inserted in the barrel 1 with the grinding-face 34 in contact with the shearing edge 12, the lugs 36 entering the notches 24 in the rim of the barrel and holding the disk from rotation. The grinding is then accomplished by rotating the shearing edge 12 against the grinding-face 34 of the sharpening-disk 30, which is adjusted in contact by the nut 20, as before, it being understood that in this use the engaging pin 33 is omitted.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a meat-grinding machine, a disk having a grinding-face, said disk removably mounted on the actuating-shaft of the grinding-machine and against the knives thereof, substantially as specified.

2. The combination of a meat-grinding machine, an insertible sharpening-disk having a grinding-face, adjustably mounted against and in a plane parallel with the cutting-knives thereof, with means for rotating one against the other, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT V. JONES.

Witnesses:

JOSEPH FREASE,
HARRY FREASE.