

No. 653,240.

Patented July 10, 1900.

W. T. HODGSON.

GRINDING ATTACHMENT FOR SEWING MACHINES.

(Application filed Nov. 18, 1899.)

(No Model.)

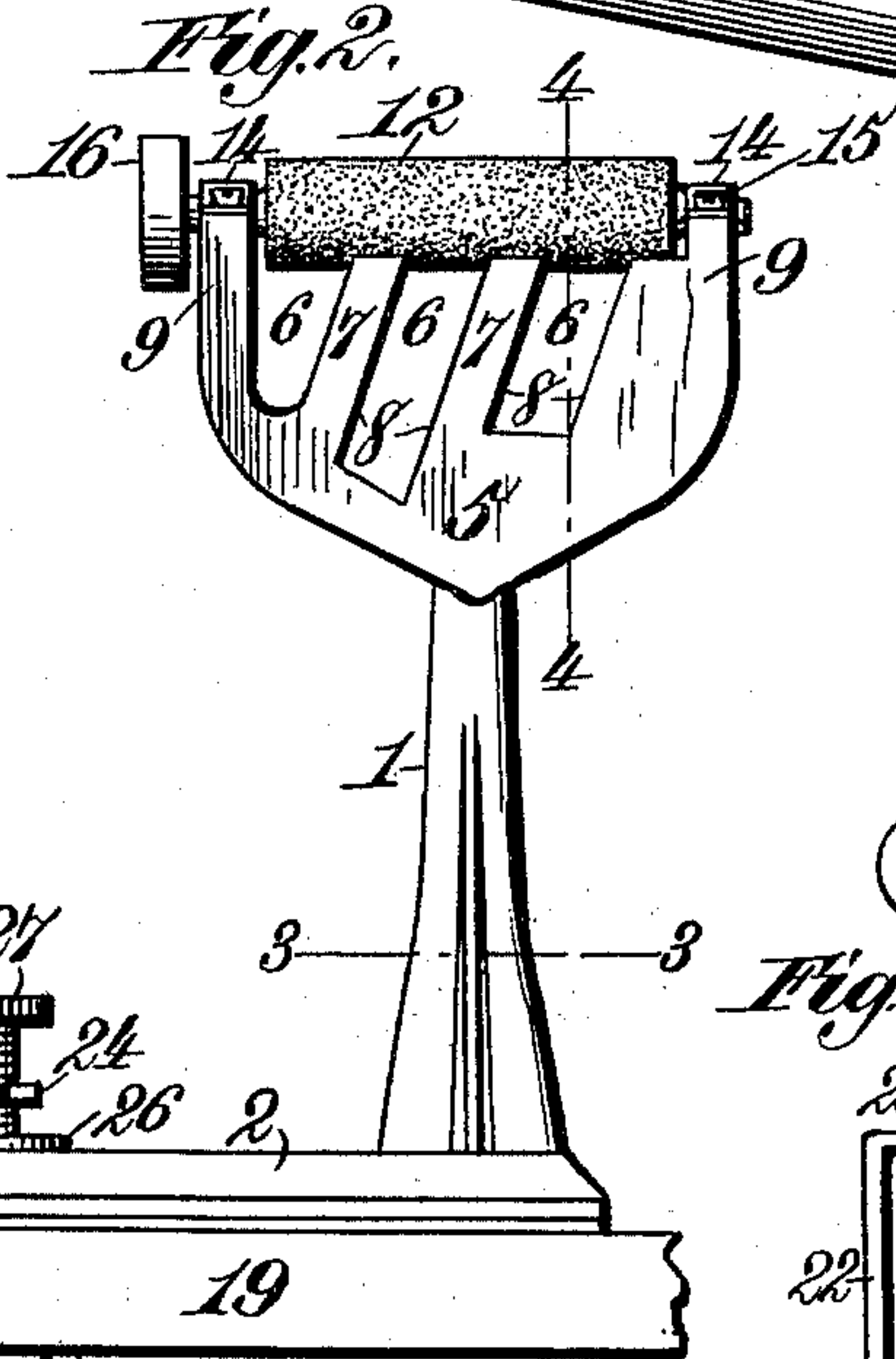
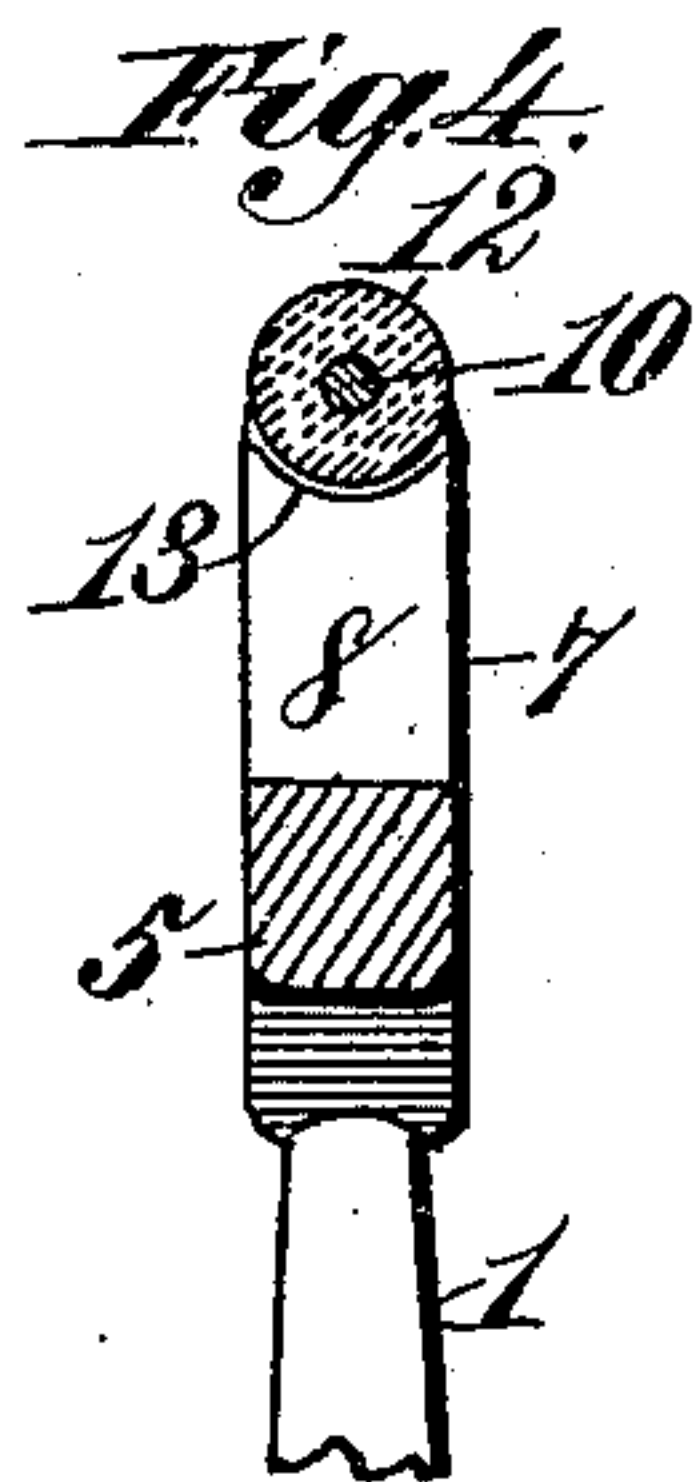
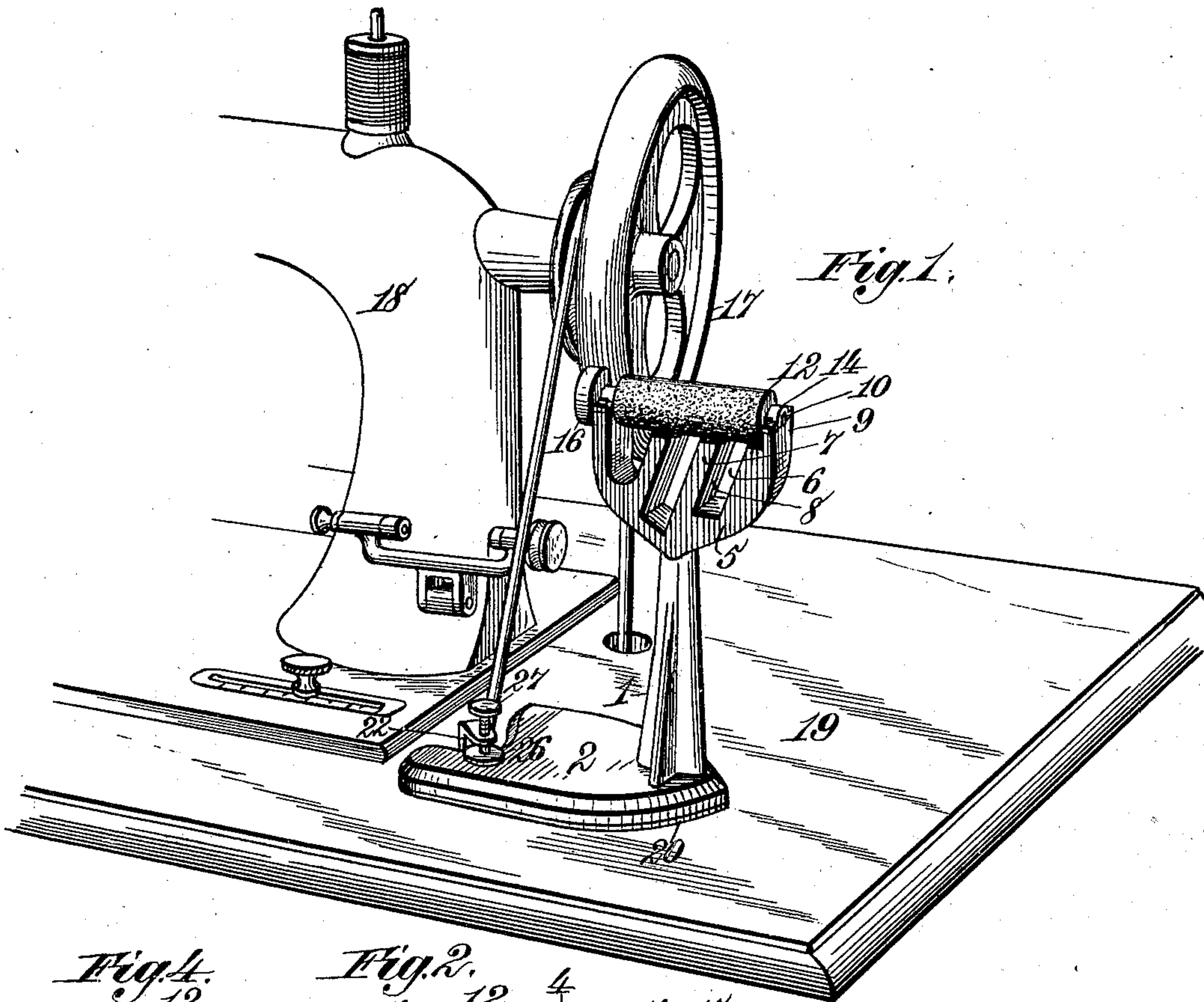


Fig. 3.

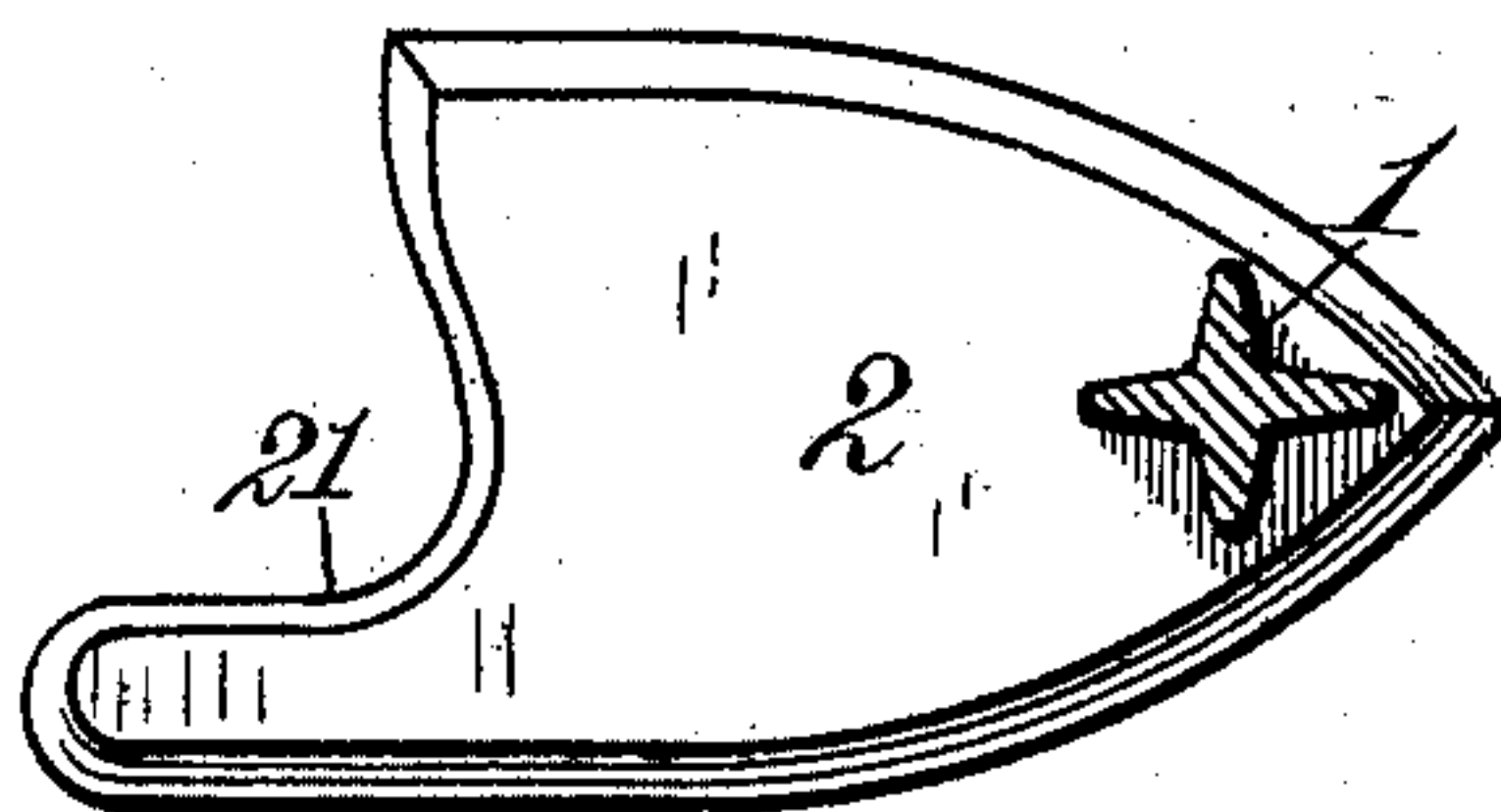
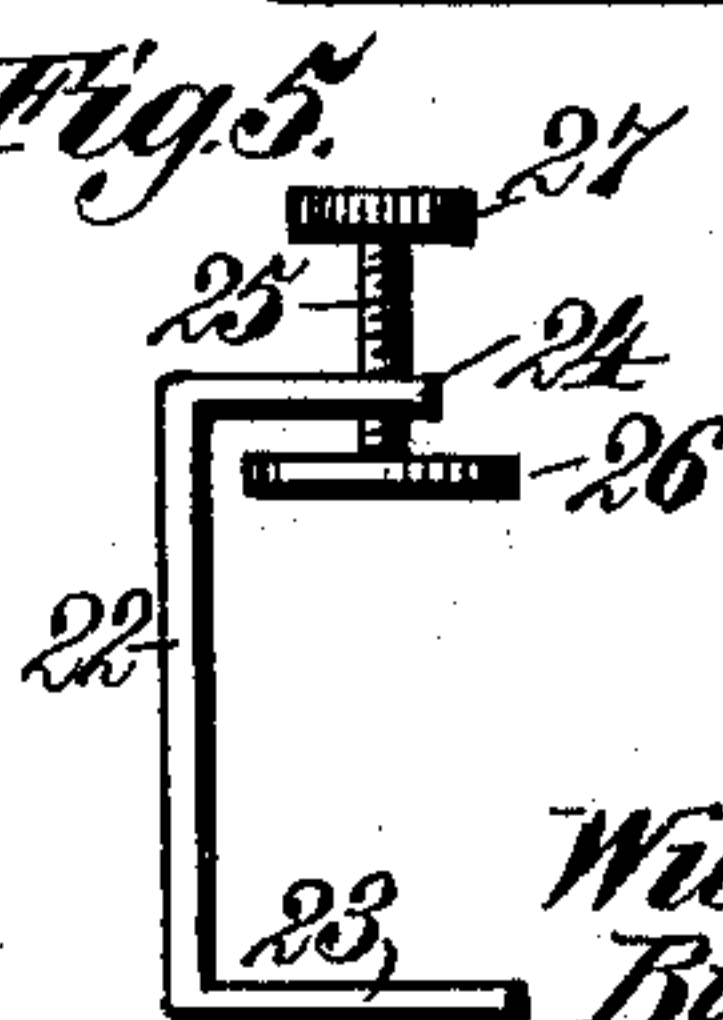


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM T. HODGSON, OF SIOUX CITY, IOWA, ASSIGNOR OF ONE-HALF TO
CHARLES L. BEATTY, OF SAME PLACE.

GRINDING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 653,240, dated July 10, 1900.

Application filed November 16, 1899. Serial No. 737,229. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. HODGSON, a citizen of the United States, residing at Sioux City, in the county of Woodbury and State of Iowa, have invented new and useful Improvements in Grinding Attachments for Sewing-Machines, of which the following is a specification.

This invention relates to compact and portable devices for grinding and sharpening various articles—such as knives, scissors, shears, and other implements or tools; and the chief objects of the present invention are to provide a novel, simple, efficient, economical, and conveniently-manipulated grinding and sharpening attachment particularly designed to be operated by the direct action of the driving or belt wheel of a sewing-machine; to provide a new and improved grinder or sharpener which can be clamped upon the work-table of a sewing-machine around the usual belt-hole therein and have its grinding and sharpening cylinder or roller rapidly rotated by the driving or band wheel of the sewing-machine through the medium of a friction-disk on the shaft of the cylinder or roller; to provide a new and improved construction of the supporting frame or standard of the grinding and sharpening cylinder or roller whereby the frame or standard is susceptible of properly steadying, supporting, and grinding the blades of shears and scissors beneath the grinding and sharpening cylinder or roller at the correct angle of inclination relatively thereto for simultaneously grinding and sharpening both blades and providing the same with true and perfect beveled cutting edges; to provide a simplified grinder and sharpener which can be conveniently and rapidly applied to the table of any known type of sewing-machine whereby the driving-wheel of the latter can directly operate the grinding cylinder or roller in contradistinction to driving such cylinder or roller by the action of the sewing-machine driving-belt; to provide a grinding and sharpening attachment for sewing-machines of such construction and arrangement that the rotary grinding cylinder or roller while driven by the sewing-machine driving-wheel will be supported at the proper elevation or height from the work-table and stand in a free field to

enable shears, knives, or tools of any size within reasonable limits to be ground and sharpened without striking the work-table or interfering with any part of the sewing-machine; to provide a grinder or sharpener with a supporting foot or base-plate shaped to fit around the driving-belt of the sewing-machine where the belt passes through a belt-hole in the work-table whereby the grinder or sharpener can be clamped in a perpendicular position and have its rotary grinding and sharpening cylinder or roller driven by the direct action of the sewing-machine belt-wheel, and finally to provide guide devices in the frame or support for the grinding and sharpening cylinder or roller to simultaneously provide both blades of a pair of shears or scissors with true bevels and perfect cutting edges.

To accomplish all these objects, my invention involves the features of construction and the combination or arrangement of devices hereinafter described and claimed, reference being made to accompanying drawings, in which—

Figure 1 is a perspective view showing a portion of a sewing-machine and my grinding and sharpening attachment applied thereto. Fig. 2 is a detail front elevation of my improved grinding and sharpening attachment on a somewhat-larger scale than Fig. 1. Fig. 3 is a sectional view taken on the line 3 3, Fig. 2, and looking toward the foot or base-plate of the vertical supporting standard or frame. Fig. 4 is a detail vertical sectional view taken on the line 4 4, Fig. 2; and Fig. 5 is a detail side elevation of the screw-clamp for securing the grinder or sharpener on the table of the sewing-machine.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The numeral 1 indicates a supporting-frame composed of a perpendicular standard rising from a foot or base-plate 2, preferably converging at one end into a point, which imparts a pear shape to the same. The standard is preferably fluted longitudinally to give an ornamental appearance thereto and at the same time enable it to be made comparatively slender, but sufficiently strong and durable.

The standard terminates at its upper end in a comparatively-broad flattened head 5, which is constructed with several inclined slots 6 to provide a plurality of guiding and supporting fingers 7 for the blades of shears, scissors, and like instruments to be ground and sharpened. The opposing faces 8 of the fingers are inclined to a perpendicular plane, and these faces are parallel, perfectly flat, and rectilinear to receive, guide, and accurately support the flat side of one blade of a pair of shears or scissors, as will hereinafter appear. The head 5 is also constructed with vertical end lugs or projections 9, forming bearings for the rotary shaft 10 of a grinding and sharpening cylinder or roller 12, which may be of any material suitable for the purpose in hand, but is preferably composed of corundum or carborundum or emery. The cylinder or roller is shown of uniform diameter from end to end; but it may be of any other desired shape. The upper ends of the guiding and supporting fingers 7 are concaved, as best seen at 13, Fig. 4, and the grinding cylinder or roller sits down within the concavities, so that the upper ends of the fingers partially surround and their guiding - faces 8 are brought into very close proximity to the surface of the cylinder or roller.

The shaft 10 is held in its bearings by cap-plates 14, attached by screws 15, and at one end the shaft is provided with an attached friction disk or wheel 16, adapted to bear directly against and be rapidly driven by frictional contact with the periphery of the driving or belt wheel 17, located at the rear of the overhanging arm 18 of a sewing-machine. The foot or base-plate of the standard is designed to rest upon and be clamped to the work-table 19 of the sewing-machine, and to avoid marring or scratching the polished surface of the table the lower side of the foot or base-plate is covered with a cushion or pad 20, of felt or any other soft material suitable for the purpose. The foot or base-plate should be clamped in juxtaposition to the belt-hole in the table through which the driving-belt of the driving or belt wheel 17 passes in order that the friction disk or wheel 16 may occupy the proper position to bear in contact with the periphery of said driving or belt wheel and enable the grinding cylinder or roller to stand at such height that large shears and other instruments can be ground and sharpened without striking the table or other parts of the sewing-machine. To accomplish this, the standard is of suitable height to place the friction disk or wheel 16 at one side of the belt-wheel 17 near a line horizontally through the center of the latter, and the foot or base-plate is recessed or notched at one end, as at 21, to receive the driving-belt of the sewing-machine and enable the clamp (best seen in Fig. 5) to clamp the foot or base-plate and pass through the usual belt-hole in the work-table 19. The recessed end 21 of the foot or base-plate extends

around the belt-hole, and the clamp, passing through the belt-hole, engages the under side of the work-table and the upper side of the foot or base-plate. To effect this, the body of the clamp is yoke-shaped, comprising a vertical arm or member 22 to pass through the belt-hole and having a lateral arm 23 at its lower end and a lateral arm 24 at its upper end. The lower arm engages the under side of the table, and the upper arm is provided with a screw-threaded orifice, with which engages a screw 25, having a disk-shaped footpiece 26 at its lower end and a milled thumb or finger piece 27 at its upper end, by operating which the disk-shaped footpiece can be forced against the upper surface of the foot or base-plate to rigidly clamp it in a fixed position. By this means the grinding cylinder or roller will stand off in a clear field in rear of the wheel which drives the sewing-machine, whereby the articles or instruments to be ground and sharpened can be conveniently applied to the grinding cylinder or roller.

Any instrument or tool having a beveled cutting edge can be laid by its flat side against the flat surface 8 of a finger 7, and thus be accurately and correctly supported and guided while the beveled cutting edge is presented to and ground and sharpened by the grinding cylinder or roller.

In grinding and sharpening a pair of shears or scissors the blades are opened and one blade laid by its flat side against the left-hand inclined surface 8 of a finger 7, and the blades are opened and closed as they are moved from a point nearest their pivotal connection to their points or tips as the grinding cylinder or roller swiftly revolves against the beveled cutting edges of the two blades, thereby grinding and sharpening both blades simultaneously and providing them with true beveled cutting edges.

The slots 6 are of varying depth to provide inclined guiding and supporting fingers 7 of different length to accommodate shear or scissor blades of varying size or width.

The device is well adapted for grinding and sharpening knives of various description, even of large size, such as bread-knives having notched cutting edges.

The grinding and sharpening are effected without the use of oil, water, or other lubricant, which makes the device quite clean in action.

The standard, its slotted head, and the foot or base-plate may be in separate pieces or all may be cast integral of any suitable metal. I do not wish to be understood as limiting myself to any particular number of inclined slots and blade or tool guiding and supporting fingers beneath the grinding cylinder or roller, as the number may be varied to suit the conditions required or the special purpose for which the device is intended.

Having thus described my invention, what I claim is—

1. A grinding and sharpening attachment for a sewing-machine consisting of a frame adapted to be secured to the sewing-machine table, and provided with a plurality of blade
5 guiding and supporting fingers at its upper end, and a grinding-cylinder journaled in the upper end of said frame above said fingers, and provided with a friction-disk adapted to
10 contact with the driving or belt wheel of the sewing-machine, substantially as described.

2. A grinding and sharpening attachment for a sewing-machine, consisting of an upright frame constructed at its upper end with a plurality of inclined blade guiding and sup-
15 porting fingers and having a flattened base-plate to rest upon the surface of the machine-table and constructed with a recess to extend around the belt-hole in said table, a clamp
20 constructed to pass through said belt-hole and engage the flattened base-plate and the under side of the machine-table, and a grinding-cylinder journaled in the upper end of
25 the upright frame above said inclined blade guiding and supporting fingers and having a shaft provided with a friction-disk arranged in direct contact with the driving or belt
wheel of the sewing-machine, substantially as described.

3. A grinding and sharpening attachment,
30 consisting of a vertical frame having a slotted upper end to provide a blade guiding and supporting finger, a grinding cylinder or roller journaled on the frame over said finger and having its periphery in close proximity
35 to the upper end of the latter, a driving disk or wheel mounted on the shaft of the cylinder or roller and arranged in direct contact with the belt-wheel of a sewing-machine to be driven by frictional contact therewith,
40 and means for holding the frame in a fixed position, substantially as described.

4. A grinding and sharpening attachment for a sewing-machine, consisting of an upright frame having its upper end constructed with an inclined slot forming a blade guiding
45 and supporting finger having an inclined face, a foot or base-plate on the frame, a clamp for securing the foot or base-plate to the sewing-machine work-table, a grinding
50 cylinder or roller journaled on the frame over said finger and having its surface in close proximity to the upper end of the latter, and a friction-disk connected to the shaft of the cylinder or roller and arranged to be driven
55 by the sewing-machine driving-wheel, substantially as described.

5. A grinding and sharpening attachment, consisting of a standard having a head constructed with slots and blade or tool guiding and supporting fingers having inclined faces,
60 a grinding cylinder or roller journaled on the head over the upper ends of said fingers, means for driving the cylinder or roller, and means for holding the standard in a fixed position, substantially as described.
65

6. A grinding and sharpening attachment, consisting of a frame having separated, inclined fingers constructed with concaved upper ends, a grinding cylinder or roller jour-
70 naled on said frame and set down in the concaved upper ends of the fingers, a disk or wheel on the shaft of the cylinder or roller for driving the latter, and means for clamping the frame in a fixed position, substantially as described.
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In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM T. HODGSON.

Witnesses:

C. W. TAYLOR,
W. G. MADDY.