

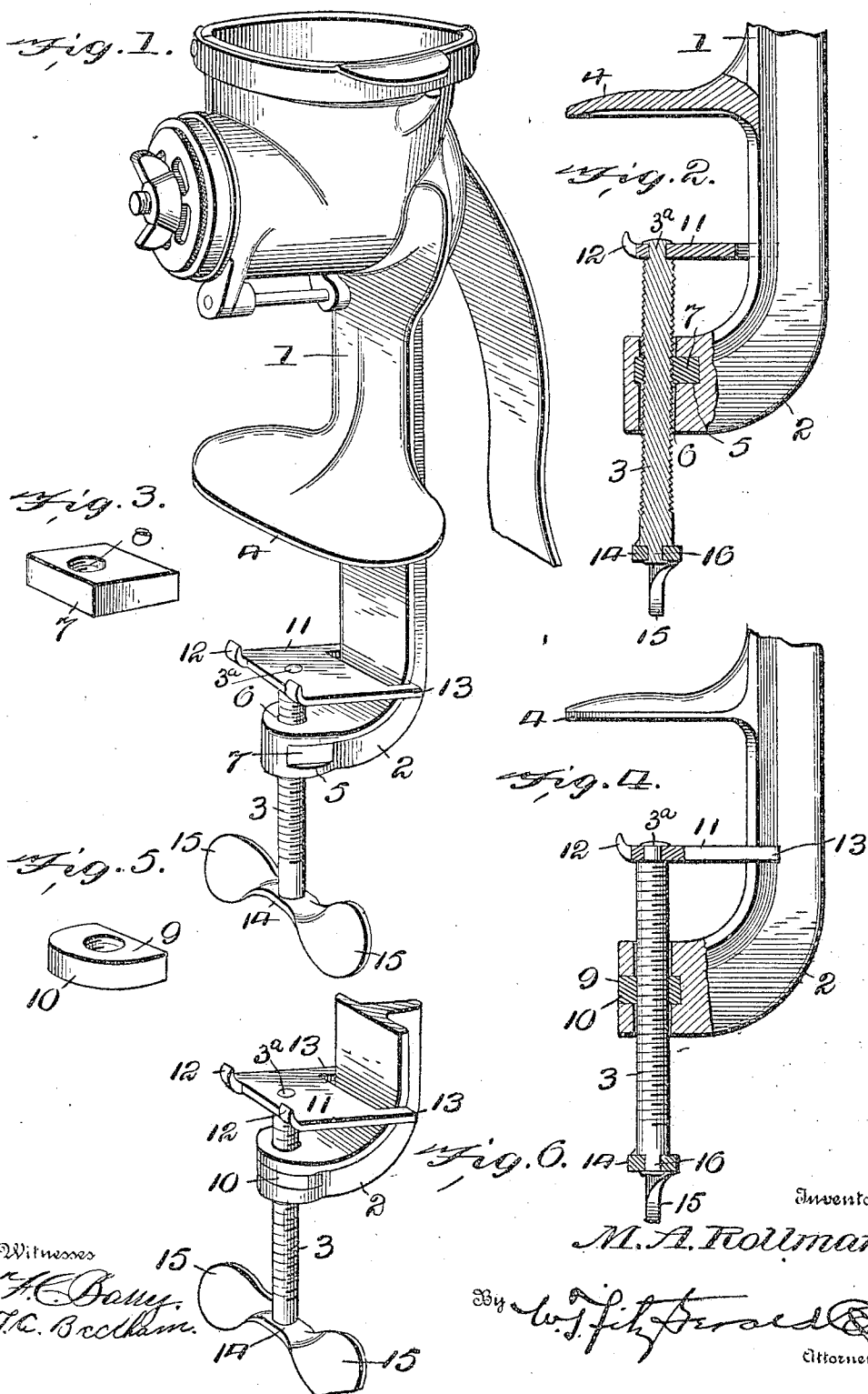
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M. A. ROLLMAN.

CLAMPING DEVICE FOR GRINDING MACHINES, &c.

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CLAMPING DEVICE FOR GRINDING-MACHINES, &c.

No. 831,629.

Specification of Letters Patent.

Patented Sept. 25, 1906.

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To all whom it may concern:

Be it known that I, MICHAEL A. ROLLMAN, a citizen of the United States, residing at Mount Joy, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Clamping Devices for Grinding-Machines, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a clamping device which will be found reliably efficient in character and useful upon all manner of grinding-machines which it is desirable shall be removably secured in their operative positions to any convenient form of support, as the edge of a table, shelf, or the like, as is common in the case of food-choppers, grinding-machines, fruit paring and coring machines, &c., as well as in connection with other classes of mechanism—as, for instance, where it is desired to insure a screw-threaded bearing-surface for the clamping-screw of relatively harder material than the material employed in the other parts, as may be illustrated by the ordinary malleable or wooden clamps used by cabinet-makers, &c.; and my invention consists of certain novel features of construction and combination of parts, the preferred form whereof will be hereinafter clearly set forth and claimed.

The prime object of my invention is to cheapen the cost of manufacture and conserving shop-room without in any wise sacrificing the efficiency and desirability of the product, which I accomplish by dispensing with expensive machine-work in boring and screw-threading holes in irregularly-shaped parts, necessitating slowly-operated jigs, &c., and other special tools and devices.

Other objects and advantages will be hereinafter clearly set forth, reference being had to the accompanying drawings, in which—

Figure 1 shows a perspective view of my invention as applied to a meat-grinding machine. Fig. 2 is a detail view of a portion of the clamp-standard of the machine illustrated in Fig. 1, the clamping-screw being shown in section. Fig. 3 is a perspective view of the insert-block or tap provided with a screw-threaded aperture and adapted to be

used in a manner hereinafter set forth. Fig. 4 shows a slightly-modified construction from that presented in Fig. 2. Fig. 5 is a perspective view of an insert-block having a screw-threaded aperture designed to cooperate with that form of receiving-opening shown in Fig. 4. Fig. 6 is a perspective view of that form of construction illustrated in Fig. 4.

The essential features of my invention and cooperating accessories will for convenience be designated by numerals, the same numeral applying to a corresponding part throughout the several views.

While I shall for the purposes of this application show my invention as applied to a food-chopper, it will be obvious that such application thereof is but one of many special applications possible, inasmuch as a machine of this class is designed to be only temporarily disposed in its operative position, as upon the edge of a table or other convenient form of support, and then removed.

As is well understood, the art as at present developed comprehends a suitable standard, as indicated by the numeral 1, the upper end of said standard being usually integrally connected with the casing of the machine or at least a portion of said casing, while the lower end is usually inturned at right angles thereto, as indicated by the numeral 2, to provide a seat for a screw-threaded aperture in which a clamping-screw 3 is inserted, the upper end of the clamping-screw being commonly provided with a simple washer or disk-like terminal designed to bear against the under side of a table or shelf and force the upper side of such support directly in engagement with the fixed lip 4, also usually formed as an integral part of the standard 1 and concave upon its under side. It is found, however, from experience that while a screw-threaded aperture provided in the inturned end 2 for the reception of the clamping-screw 3 is entirely satisfactory so far as reliability and efficiency are concerned, yet from the standpoint of the manufacturer it is found to be a very expensive and comparatively difficult piece of work to form an aperture in the more or less delicate inturned end 2 and afterward accurately screw-thread the same for the reception of the clamping-screw, inasmuch as the said inturned ends on most of the supporting-standards for machines of the character

mentioned are generally of a very irregular and awkward shape, and when it is attempted to drill a hole and tap a screw-thread in the end of said inturned end it becomes a great and difficult problem to rigidly hold the casting so that the drilling and tapping may be properly accomplished. This work, therefore, as now commonly performed necessitates the making of special tools, designated "jigs," or devices for holding the irregular castings which are to be bored and tapped firmly in place while the drilling and tapping is being done.

Briefly described, it may be stated that my invention consists in part in providing transverse opening or recess of proper character and also an intersecting plain vertical aperture for the clamping-screw 3, said opening and intersecting aperture being formed when the inturned end 2 is cast, together with the standard and other parts carried thereby.

In the present instance I have illustrated two forms of transverse openings provided in the inturned end 2, and it is obvious that both of these ways are but representative of other ways which may be adopted for carrying out my invention. It will be understood, for instance, that a suitable opening 5 may be formed transversely in the end of the inturned end 2, which may be readily accomplished by means of suitably-formed molds in carrying out the casting process, while at the same time an intersecting vertically-disposed aperture, as indicated by the numeral 6, may also be formed in the casting process, said aperture 6 being designed to loosely receive the clamping-screw 3 without bringing said clamping-screw in contact with the walls of said aperture. The opening 5 is of suitable size to receive the insert-block 7, which consists of a piece of properly-shaped sheet-steel provided with a screw-threaded aperture 8 to coöperate with the clamping-screw 3, and it therefore follows that the threads upon said screw are in no wise engaged excepting by said threaded aperture in the insert-block or tap 7.

In Fig. 4 instead of providing the transverse opening 5, as shown in Figs. 1 and 2, to receive the insert-block 7 I merely provide an opening in the extremity of the inturned end 2 and in which I seat the apertured insert-block 9, corresponding to and performing the same office as the insert-block 7, the outer edge of the insert-block 9 being rounded so that it will conform to or be disposed flush with the peripheral face of the rounded extremity of the inturned end 2, it being understood that the opening designed to receive the insert-blocks 7 or 9 may be made any desired size or extent, the object being to provide a sufficient bearing-surface for coöperation with the clamping-screw 3 passing through said insert-blocks.

The upper end of the clamping-screw 3 is

commonly provided with a simple disk-like terminal member; but I prefer to dispense with said disk-like terminal member and employ in lieu thereof a bearing-plate 11 of proper width to insure the requisite bearing-surface for the under side of the table or shelf with which it is placed in coöperation and is riveted to the reduced terminal 3^a at the upper end of the clamping-screw. My bearing-plate is formed upon its outer edge with a plurality of frictional points or teeth 12 and upon its inner edge with a recess providing the inwardly-directed fingers 13, adapted to lie upon each side of a contiguous part of the standard and ride upward and downward in engagement therewith incident to the positive and reverse rotation of the clamping-screw 3, as will be readily understood.

The lower end of the clamping-screw is commonly formed integral with thumb-wings, by which it may be rotated in either direction; but I have found from experience that much more desirable results and a greater speed in manufacture may be attained by forming the threads at proper points upon a continuous rod of suitable metal and then cutting said rod into proper lengths and attaching to the lower end thereof suitably-formed thumb-wings, which may be expeditiously stamped and formed from sheet metal, whereby the body portion 14 is provided and has at each end the thumb-wings 15, said wings being twisted to normally occupy a substantially vertical plane in line with the body portion, while the body portion is left in a horizontal position and is provided with a centrally-disposed recess to receive the reduced terminal 16, formed at the lower end of the clamping-screw, which is riveted thereto.

By my new clamp construction as hereinbefore described no machine-work whatever is required on the clamp-standard after it comes from the foundry. The small block of steel which is inserted in the transverse opening is, as before stated, stamped out of sheet-steel, the aperture being punched in it at the same operation. This small block of steel shaped in any way to provide a proper finish is very easily handled and very easily managed in a machine when the thread is cut in the aperture formed therein at the time the block is fashioned. The steel insert-block when apertured and threaded may be easily slipped into the opening formed in the casting just as the latter comes from the foundry or the tinnerns, when the clamping-screw is turned home in the threaded aperture and in no wise comes in contact with the walls of the aperture 6, formed by the casting process. By means of the frictional points 12 and the fingers 13 the bearing-plate at the end of the clamping-screw is held against twisting or rotary movement, the points sinking into the wood at the bottom of the table, and thereby

preventing undue injury to the shelf or table, as will be obvious, and since this plate cannot turn or twist the machine is more reliably clamped in its operative position. I desire also to call attention to the fact that the lip 4 is made concave upon its under side, leaving only the extreme outer edges to first come into engagement with the table, the result being that a more positive grasp or anchorage upon the table or other support will be attained.

The clamping-screw and the thumb-wings are preferably made of steel, said parts being riveted together, as before explained.

15 Believing that the advantages and manner of carrying out my invention have thus been made clearly apparent, further description is deemed unnecessary, and while I have described the preferred combination and construction of parts I wish to comprehend such substantial equivalents and substitutes as fairly fall within the scope of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

25 1. A grinding-mill comprising a casing constructed in one piece with a standard with an upper fixed jaw located beneath the casing and with a lower inturned end located beneath the fixed jaw, and formed with a plain vertical aperture and a transverse opening 30 extending across the plain vertical aperture, an insert-block having a screw-threaded aperture of less diameter than the plain vertical aperture and fitted into the transverse opening in the lower end of the standard, a clamping-screw working and wholly supported in the screw-threaded aperture of the insert-block and passing freely through the vertical aperture in the lower end of the standard, a plain lower movable jaw, mounted upon and 40 fixed at its outer part to the upper end of the clamping-screw having vertical frictional

points at its outer edge, and horizontal guide-fingers at its inner edge, embracing the standard, and a handle-plate having a body portion secured flatwise across and to the lower end of the clamping-screw and thumb-wings twisted in the plane of the handle-plate and extending in line therewith. 45

2. A grinding-mill comprising a casing constructed in one piece with a standard with an upper fixed jaw, located beneath the casing, and with a lower inturned end located beneath the fixed jaw and formed with a plain vertical aperture and a transverse opening 55 extending across the plain vertical aperture, an insert-block having a screw-threaded aperture of less diameter than the plain vertical aperture and fitted into the transverse opening in the lower end of the standard, a clamping-screw having reduced terminals and working and wholly supported in the screw-threaded aperture of the insert-block and passing freely through the vertical aperture in the lower end of the standard, a plain 65 lower movable jaw, mounted upon the upper end of the clamping-screw and riveted at its outer part to the upper reduced terminal thereof, having vertical frictional points at its outer edge, and horizontal guide-fingers at its inner edge embracing the standard, and a handle-plate having a body portion secured flatwise across and to the lower end of clamping-screw and riveted to the lower reduced terminal thereof, and thumb-wings twisted 75 in the plane of the handle-plate and extending in line therewith.

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

MICHAEL A. ROLLMAN.

Witnesses:

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