J. M. ADAMS.

MACHINE FOR POLISHING THE HEADS OF SCREWS, BOLTS, AND THE LIKE.

APPLICATION FILED JUNE 3, 1916.

1,205,314.

Patented Nov. 21, 1916.

2 SHEETS—SHEET 1.

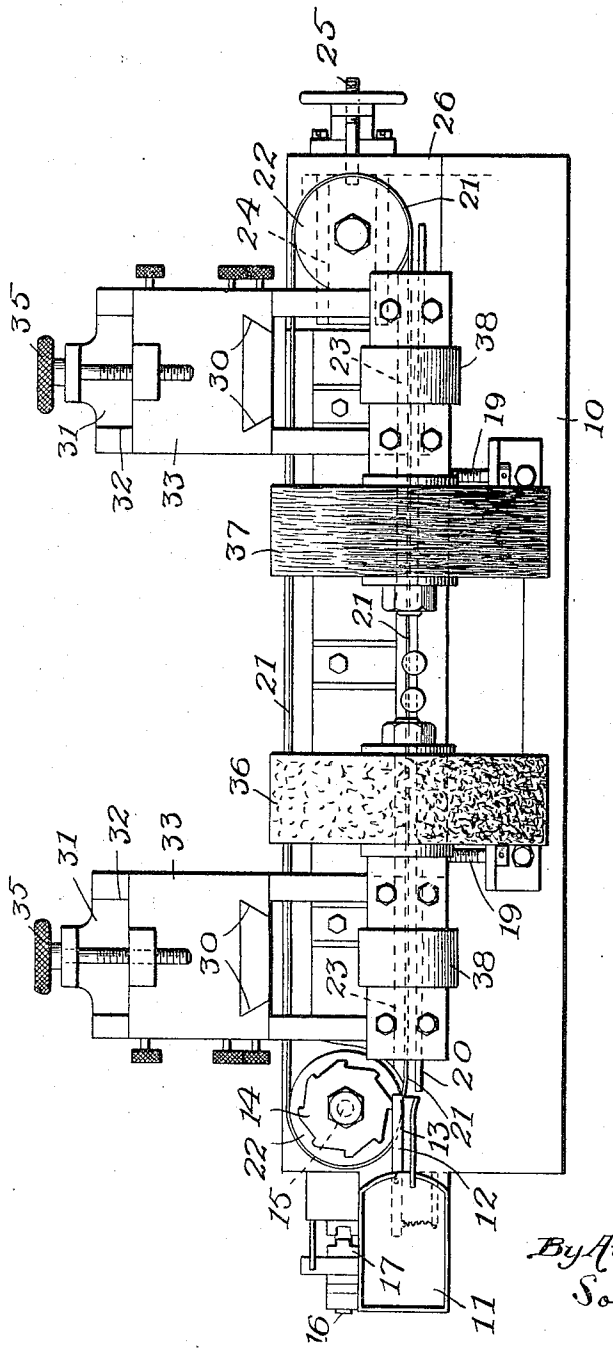


Fig. 1.

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Fig. 2.

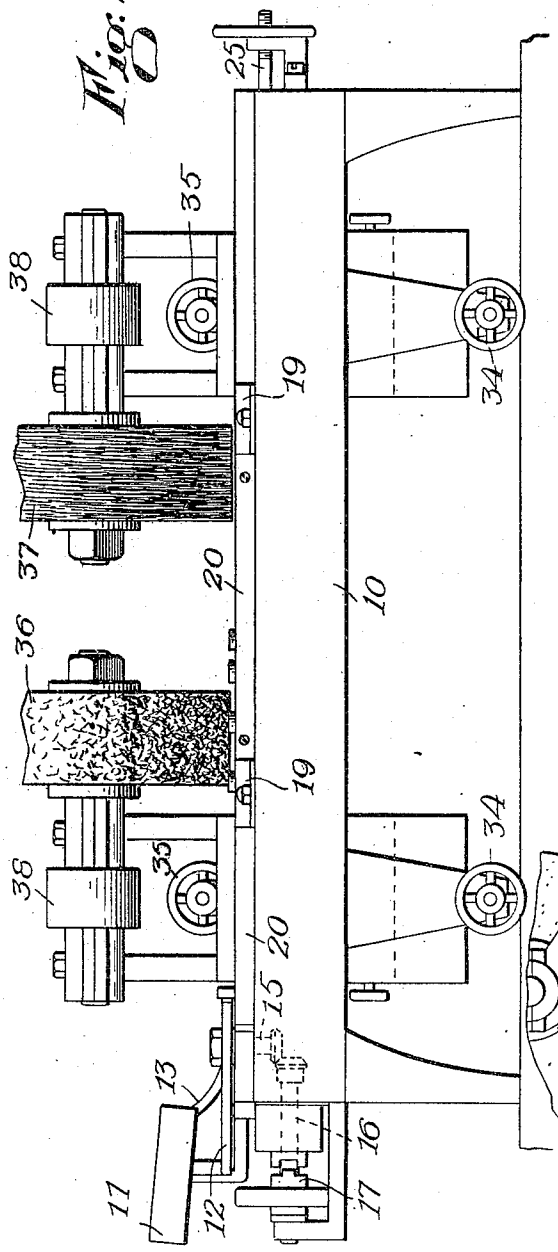
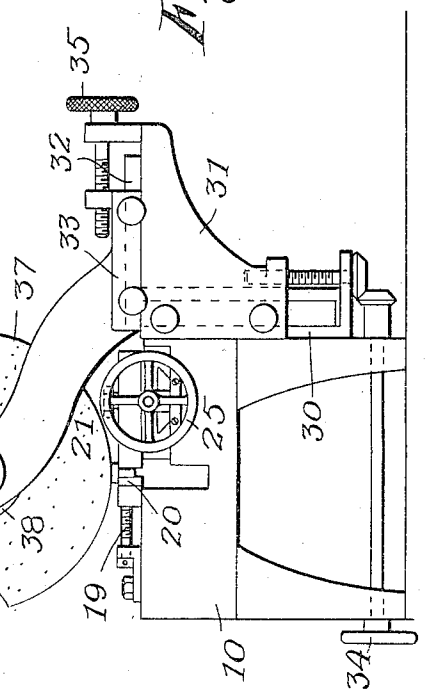


Fig. 3.



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JOHN M. ADAMS, OF ORANGE, MASSACHUSETTS.

MACHINE FOR POLISHING THE HEADS OF SCREWS, BOLTS, AND THE LIKE.

1,205,314. Specification of Letters Patent. Patented Nov. 21, 1916.

Application filed June 3, 1916. Serial No. 101,649.

To all whom it may concern:

Be it known that I, JOHN M. ADAMS, a citizen of the United States, residing at Orange, in the county of Franklin and State of Massachusetts, have invented a new and useful Machine for Polishing the Heads of Screws, Bolts, and the like, of which the following is a specification.

This invention relates to a machine adapted to polish the head of any article which is of a general cylindrical shape and which has a head of a larger size than the body of the article, and preferably with a square neck or shoulder.

The principal objects of the invention are to provide an improved feeding device by which articles such as above described can be fed along in a comparatively uniform manner with comparatively little attention on behalf of the operator; to provide improvements in the details of the feeding mechanism, and improvements in the relation of the same with polishing devices.

Reference is to be had to the accompanying drawings in which—

Figure 1 is a plan of a machine constructed in accordance with this invention; Fig. 2 is a side elevation of the same, and Fig. 3 is a view of one end of the machine.

The machine is shown in a form in which it is provided with a main table or support 10 carried on legs which may be very short, so that it can be supported on a bench at a convenient height. However, the machine can be made obviously in such form that it is complete in itself and it is supported entirely by its own frame and legs. The machine is shown as provided with a hopper 11 carried by said frame for receiving the articles to be polished, these articles being located indiscriminately in this hopper. This hopper is carried by an auxiliary pivoted frame 12, and is provided with a bifurcated chute 13 on which the bolts or screws are adapted to descend by gravity. The hopper is shown as inclined, and having a discharge passage large enough to allow one article to be discharged at a time. This chute 13 is provided with a central passage to receive the shanks of the bolts or screws so that they will be supported by the overhanging shoulders of their heads. They will thus be located in a vertical position as they pass down the chute, and are positioned to be received by the machine and carried along through it. Located in a convenient position is a jarring wheel 14 on a vertical shaft 15 operated from the shaft 16 and adapted to be connected and disconnected therewith by a hand-operated clutch 17. This jarring wheel is provided with teeth and as it rotates it vibrates the pivoted plate 12, thus jarring the hopper to gradually move the contents down into the chute 13. The articles delivered to the chute in this manner are deposited on a feeding device which consists of a stationary vertical guide 20 on one side, and belt 21 on the other side, parallel therewith. This belt runs around two pulleys 22 located at opposite ends in the machine, the pulley on one side being located on and consequently rotating with the shaft 15, while the other pulley is rotated by the belt. This belt is held up toward the guide 20 by a backing plate 23 located behind it and extending throughout the length of that strand of the belt. The pulley 22 is located on a vertical shaft carried by a slide 24 which can be adjusted back and forth by a screw 25 to control the tautness of the belt. The guide 20 can be adjusted back and forth by screws 19. It will be obvious that articles of the character described, when landing on this kind of a guide will be constantly forced to turn on their axes by the constantly moving belt 21, being supported on the top of this and the guide 20. This not only gradually moves the articles along the guide, but obviously changes their angular position during their progress. On account of this, it will be clear that the top surfaces of the heads will not receive the polishing strokes always in the same direction, and consequently the polish will be without grain or direction, and will be uniform. When the articles reach the end of the guide near the surface of the pulley 22 they are simply pushed beyond the guide and left on the shelf 26 or dropped automatically from the machine without the necessity of providing any mechanism for that purpose.

For the purpose of performing the polishing operation and buffing the surfaces after the preliminary polishing, the machine is shown as provided with two sets of vertical ways 30 on the back, and carriages 31 capable of moving up and down these ways. Each carriage has a horizontal way 32 for a horizontally moving frame 33. Hand

wheels 34 and 35 are shown connected by screws and other mechanism with these members for raising and lowering them and moving them back and forth over the machine. The frames 33 are provided with arms which carry bearings for the shafts of a polishing wheel 36 and a buffing wheel 37. The shafts of these two wheels are provided with pulleys 38 for receiving belts for rotating the wheels. It will be obvious that these wheels can be adjusted to the proper position to polish and buff the upper surfaces of the articles being carried along the guides, and that, as has been stated, the articles under the wheels are turning slowly while they are operated upon so as to get a uniform surface. In this way I find that flat and round-headed bolts and screws, and other articles of a similar nature can be polished and buffed with great rapidity and that the work produced is of an extremely high degree of excellency. One man can attend to several machines so that the labor cost is greatly reduced.

Although I have illustrated and described only a single form of the invention I am aware of the fact that modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited to all the details of construction herein shown and described, but

What I do claim is—

1. In a machine of the character described, the combination with a polishing wheel, of a guide located immediately under the wheel, and a belt parallel with and adjacent to said guide engaging the shanks of the articles to be fed, said belt being movable constantly in one direction for feeding the articles with a rolling motion along the guide with their heads in contact with the bottom surface of the wheel.

2. In a machine of the character described, the combination of a vertical guide adapted to support on its upper surface the under surface of the head of an article to be polished, a movable member moving parallel with said guide and having its upper surface at the height thereof for assisting in supporting the articles to be fed, and for moving them along with a rolling motion and a polishing wheel located over said guide and member for polishing the upper surfaces of the heads of said articles.

3. In a machine of the character described, the combination of a vertical longitudinal guide and a belt parallel with said guide and movable longitudinally, the upper edges of said guide and belt being adapted to support the articles to be operated upon with their shanks hanging down between them and in contact with both the guide and belt, whereby said articles will be moved along the guide by the belt with a rolling motion, and means for operating on the upper surface of the heads of the articles thus fed.

4. In a machine of the character described, the combination of a hopper for receiving articles, a chute adapted to guide the articles from the hopper, and a pair of guides for receiving the articles from the chute, one being stationary and the other movable, the stationary guide being adjustable toward and from the movable guide, and the movable guide being adapted to move the articles along the stationary guide.

5. In a machine for polishing headed articles, the combination of a hopper for receiving said articles, a bifurcated chute adapted to allow the shanks of said articles to pass through it, but to prevent the heads from passing and to support the heads, means for jarring the hopper to feed the articles into the chute, and a pair of guides, one stationary and the other movable, for receiving the articles from the chute and supporting them and at the same time feeding them along, the said stationary guide being adjustable toward and from the movable guide.

6. In a machine of the character described, the combination with a vertical guide, and means for engaging the shanks of articles to be fed and rolling them along the guide, of a polishing means comprising an adjustable frame, and a polishing wheel carried by the frame and adapted to be adjusted over said guide.

7. In a machine of the character described, the combination with a guide along which the articles to be polished can be fed, and a belt parallel with said guide for engaging the shanks of the articles to be fed, said belt being movable constantly in one direction for rolling the articles along the guide, of a polishing means comprising a vertically and horizontally adjustable frame and a polishing wheel carried by said frame on a horizontal axis and adapted to be adjusted over said guide.

8. In a machine of the character described, the combination with a guide, a belt parallel with said guide engaging the shanks of the articles to be fed for rolling the articles along the guide, of a polishing means comprising a vertically and horizontally adjustable frame and a polishing wheel carried by said frame on a horizontal axis and adapted to be adjusted over said guide, and a buffing wheel similarly adjustable.

9. In a machine for polishing headed articles, the combination of a hopper for receiving said articles, a bifurcated chute adapted to allow the shanks of said articles to pass through it, but to prevent the heads from passing and to support the heads, a

pair of guides, one stationary and the other movable, for receiving the articles from the hopper and supporting them and at the same time feeding them along, a vertical shaft, means on said shaft for vibrating the hopper, means on said shaft for operating the belt, and means for connecting the shaft with a source of power and disconnecting it therefrom.

In testimony whereof I have hereunto set my hand.

JOHN M. ADAMS.

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