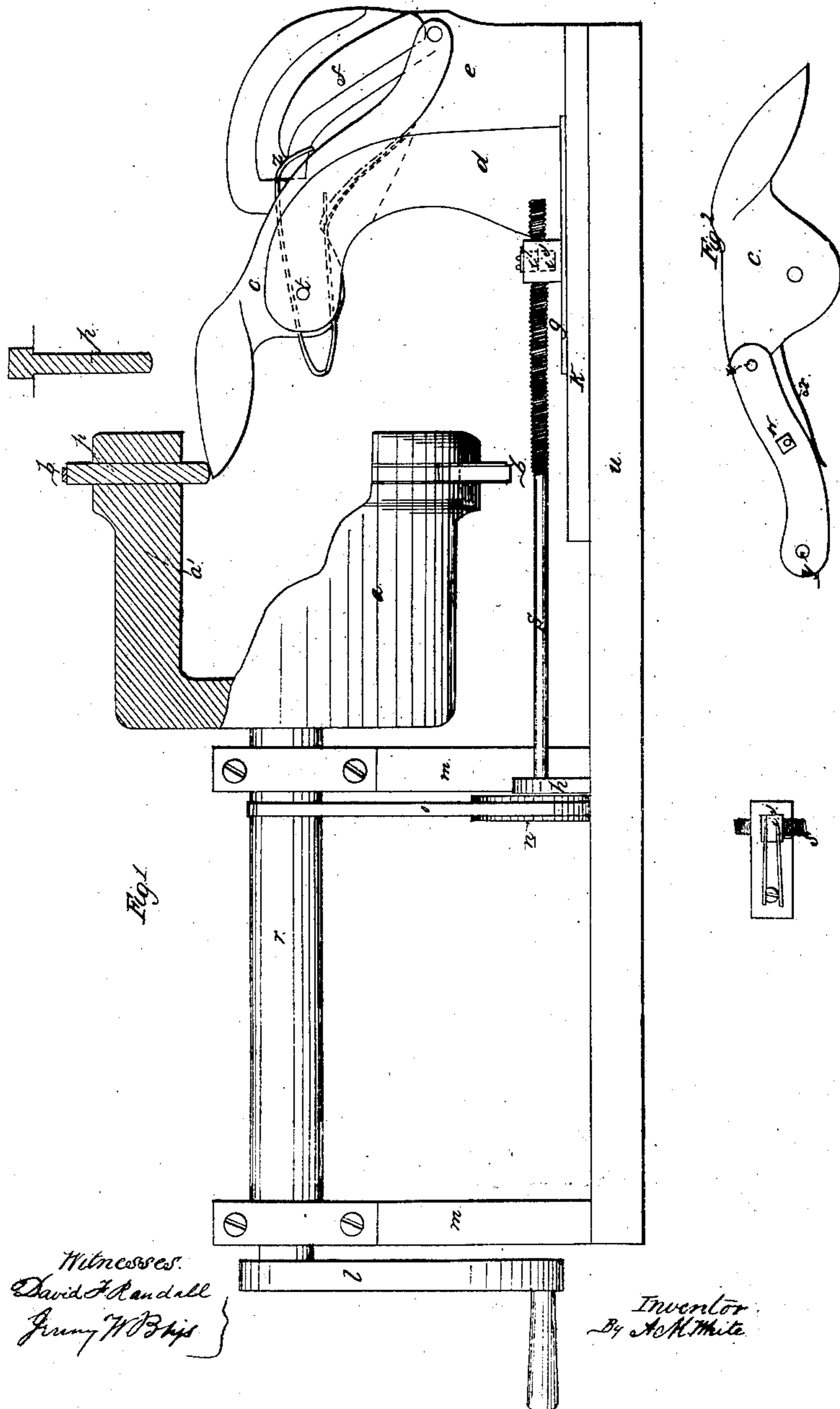


A. M. White,

Burnishing Metal.

N^o 30,707.

Patented Nov. 20, 1860.



Witnesses:
David F. Randall
James W. B. Hys

Inventor
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UNITED STATES PATENT OFFICE.

ALBERT M. WHITE, OF HARTFORD, ASSIGNOR TO ROGERS & BROTHER, OF WATERBURY, AND HARTFORD MANUFACTURING COMPANY, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN BURNISHING-MACHINES.

Specification forming part of Letters Patent No. 30,707, dated November 20, 1860.

To all whom it may concern:

Be it known that I, ALBERT M. WHITE, of Hartford, county of Hartford, and State of Connecticut, have invented certain new and useful Improvements in Burnishing-Machines for Burnishing Metal Ware; and I do hereby declare that the same is described and represented in the following specification and drawings; and to enable others skilled in the art to make and use my said improvement I will proceed to describe its construction and operation, referring to the drawings, in which the same letters indicate like parts in each of the figures.

The nature of this improvement in burnishing-machines consists, first, in making a revolving cylindrical head and securing it upon a shaft in a proper manner, substantially as shown in the drawings, and arranging a series of yielding pressure burnishers; and, second, in combination therewith, arranging a sliding holder-stock made in a proper manner, so as to present the surface of the work to be burnished (held by said sliding holder-stock) in a proper manner to the action of the burnishers, and being more especially adapted for burnishing concave and convex surfaces.

In the accompanying drawings is shown a side and partly-sectional view of my improvement.

n is the head of the machine, upon which all of the mechanism constituting the machine is arranged and secured for operation.

m are the studs or hangers in or to which the shaft *r* is secured in bearings suitably prepared for holding, so as to allow it (the shaft *r*) freely and easily yet steadily to revolve therein.

a is the cylindrical burnisher-head, (see *a* and *a'*, part sectional,) one end thereof made open to allow the work being burnished to pass in and out of the said head without obstruction, and the other end having a head, by means which it (the burnisher-head) is secured to the outer end of the shaft *r*. Near the outer and open end of the head *a*, I enlarge or build up hubs and form apertures through the thickness of the enlarged portion in diverging lines from the center or axis of motion, for the purpose of receiving and hold-

ing a series of burnishers, *p*. Said burnishers are made with a shoulder to support and hold them in place in readiness for action. It will be readily seen that the form and shape of both the head *a* and the burnisher *p* may be varied in shape and proportion without changing the effect produced thereby.

b is an elastic band, secured in any proper manner over the ends of the burnishers, and by the use of which an elastic pressure is produced to the burnishers *p* while the burnishing is being performed from the inside of the head, as shown in the drawings. At the same time it will be obvious that the same effect may be produced by simply changing the burnishers and inserting them into the aperture from the inside, and securing them in place, in readiness for action, by means of elastic or metallic band or springs, while the outer ends do the burnishing. Thus the burnishers protruding outward burnish concave surfaces, while the burnishers protruding inward burnish convex surfaces.

d is a burnish-holder stock, secured to a beveled edge sliding bed-piece, *g*, which is also secured between two ways in such a manner as to allow of its moving freely and easily back and forth.

s is a feed-screw, secured in a stud or box, *h*, in a proper manner, so as to prevent shuck or backlash.

n is a pulley secured on the end of the screw-spindle *s*, just outside of the stud or box *h*, and is driven by a belt, *o*, from the shaft *r*.

j is a stud secured in the sliding bed-piece *g*, into which is secured a nut made in two parts, *i* and *i'*. The lower half, *i*, is fitted in a fixed position. The upper half is held to its place by springs. The object of this arrangement is to allow the upper half, *i'*, of the nut to be lifted so as to allow the stock *d* to be moved quickly out or in, and at once replace the nut *i'* in readiness to be moved forward or backward, as desired, by the said screw.

e is a fixed stand or post, secured in the bed *u* just back of and nearly at the side of the stock *d*, when it (the stock *d*) is at rest, in or to which (the stand *e*) is made or secured a cam or pattern, either as shown at *f* or in any other form or shape desirable, to produce the

result of so guiding the holder *c*, on which the work is designed to be secured, in any of the ordinary ways, so that it will present the work thus secured, to be burnished in a proper manner, to the action of the burnishers. The holder *c* (for its shape see Figure 2) is made on the front end thereof the proper shape to receive the spoon or other article to be burnished, and is to be secured thereto (the spoon) by any of the ordinary ways. The enlarged or flattened portion of the holder, just back of the form to receive the bowl of a spoon, is secured to the stud *d* by a pin or bolt, *t*. It also has a shank, *q*, extending back from the bolt or pin *t*. Said shank is made in two parts, (see Fig. 2,) one of which is hinged to the other by a pin or bolt, *v*, and nearly in the center thereof is provided a slit, through which a pin, *w*, extends from the main shank, thus allowing the jointed portion slightly to resist the action of the spring *x* downward, and to firmly retain its position with the main shank by the pin *w* in its upward motion. In the end of the said jointed portion of the shank is secured a guide-pin, *y*, and moves against the cam or pattern *f*, while the stud *d* is moving forward by the action of the screw *s*, to present the work to the action of the burnishers; and when the pin *y* reaches the forward end of the cam or pattern *f*, it (the pin *y* with the shank) is lifted by the action of the spring *z* over the end of the cam or pattern, thus lowering the

burnished end of the work away from the burnishers, and allowing the stock with the work to be drawn back to the starting-point while the burnishing-head is still revolving.

It will be obvious that the size, shape, and proportions of the several parts may be changed, so as to adapt it to the different kinds and shaped articles, without changing the characteristic features of the machine. I believe I have thus shown the construction, the mode of its operation, and thereby also shown the advantage to be derived by it over others, so as to enable a person skilled to make and use the same.

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

1. The revolving burnisher-head *a*, substantially as described, whereby I am enabled to present the surface to be burnished to the ends of a series of burnishers arranged therein, substantially as and for the purpose described.

2. The arrangement of the sliding stock *d*, holder *c*, cam or pattern *f*, in combination with the head *a*, substantially as and for the purpose described.

In testimony whereof I have hereunto set my hand and seal this 28th day of September, 1860.

A. M. WHITE. [L. S.]

Witnesses:

DAVID F. RANDALL,
JEREMY W. BLISS.