J. V. Woolsey.

Polishing Stoves.

No. 94,163. Patented Aug. 24, 1869.

Fig. 1.

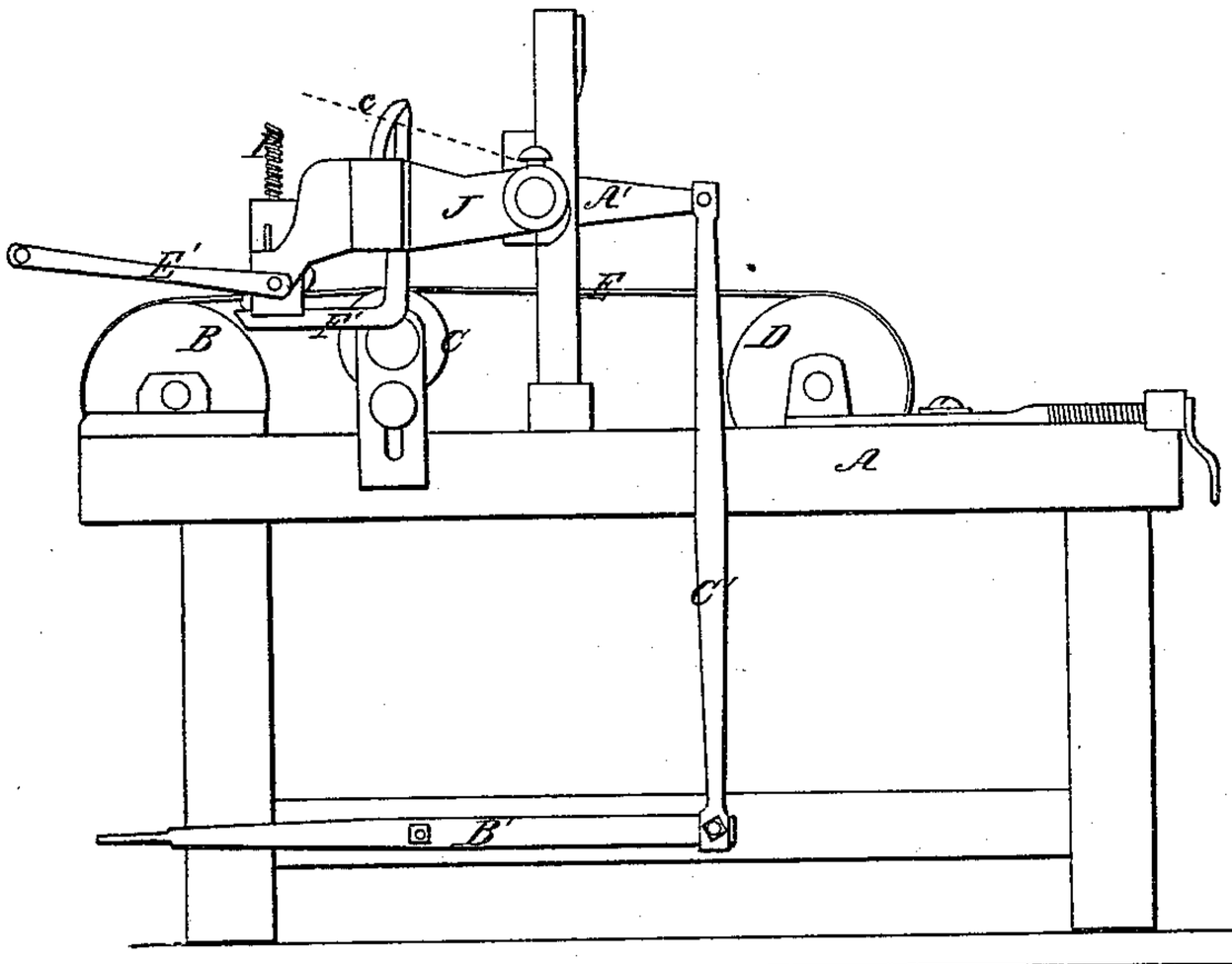


Fig. 3.

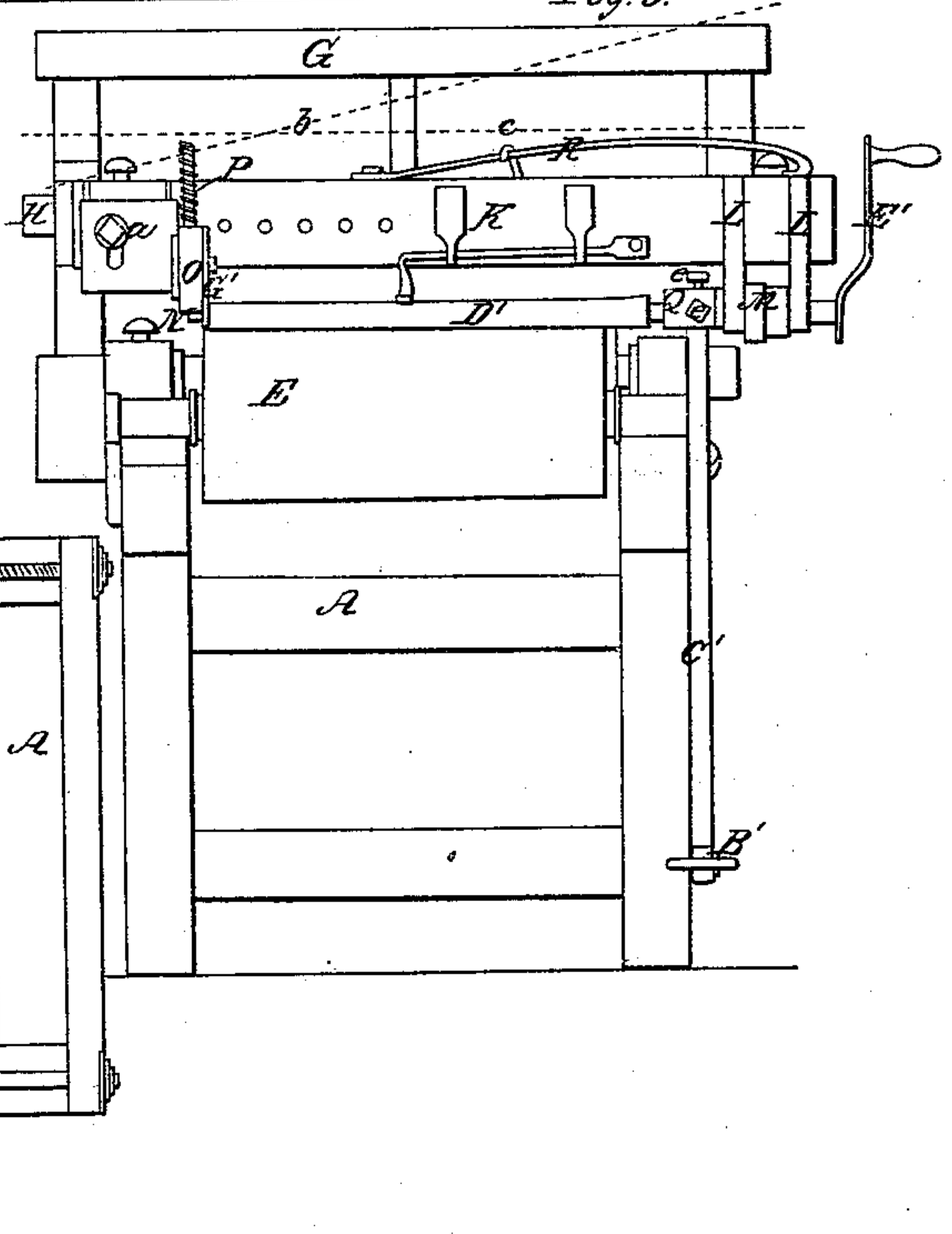
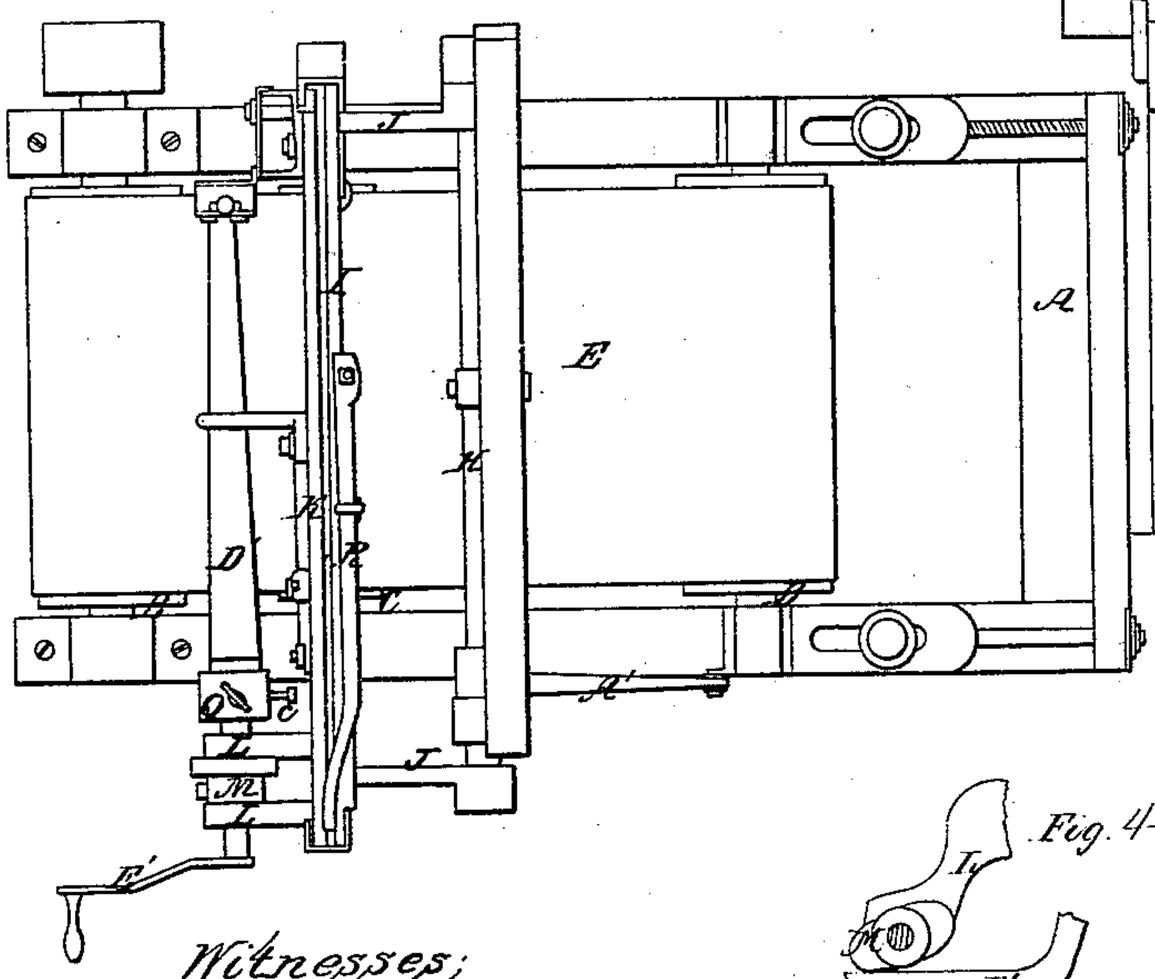


Fig. 2.



Witnesses;
J. H. Burridge
Frank L. Alden.

Fig. 4.

Inventor;
J. V. Woolsey

United States Patent Office.

J. V. WOOLSEY, OF SANDUSKY, OHIO.

Letters Patent No. 94,163, *dated August* 24, 1869.

IMPROVEMENT IN MACHINE FOR POLISHING SPOKES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, J. V. WOOLSEY, of Sandusky, in the county of Erie, and State of Ohio, have invented certain new and useful Improvements in Machine for Polishing Spokes; and I do hereby declare that the following is a full and complete description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of the machine.

Figure 2, a view of the top.

Figure 3, a view of the front end.

Figures 4 and 5, detached sections.

Like letters of reference refer to like parts in the several views presented.

This invention has for its object the polishing of spokes to a pattern or cam, holding the felloe-end at the centre, so that, as said spoke is made to revolve, its surface will be brought equally and evenly to the polishing-apron.

In fig. 1—

A represents a frame, in the upper side of which are journalled the rollers B C D, over and around which is carried an endless apron or belt, E.

The roller D is so attached to the frame, that it is adjustable for giving tension to the apron.

C is a supporting-roller, the purpose of which will hereinafter be shown.

G, fig. 3, is a supplementary frame, in which is journalled a shaft, H.

To said shaft is attached a cross-bar, I, fig. 2, by means of the arm J.

K is a stay, one end of which is pivoted to the cross-bar at *a*, whereas, the opposite end is free, so that it can be elevated or vibrated, as indicated by the line *b*, fig. 3.

At the free end of said stay, between the arms L, is journalled a cam, M, a detached view of which is shown in fig. 4.

At the pivoted end of said stay, is a centre, N, the stem of which passes up through, and projects above the block O.

The projecting end of said stem is embraced by a coiled spring, P, whereby said centre is retained within the block, and allowed to adjust itself to the oval of the spoke, as will hereinafter be shown.

Q is a clamp, whereby the tenon-end of the spoke is held.

Said clamp, it will be observed, is secured to the same shaft to which the cam is fixed, and turns conjointly therewith, as and for a purpose presently shown.

R is a spring, by means of which the free end of the stay is depressed, thereby holding the spoke D′ in close contact with the apron.

A′ is an arm or lever, whereby the shaft is made to vibrate by means of the treadle-lever B′, to which it is connected by the link C′, so that the cross-bar, stay, and spoke D′ can be elevated or vibrated collectively, as indicated by the dotted lines *c*, figs. 1 and 3.

The practical operation of this machine is as follows:

The spoke to be polished, is placed in the machine, as shown in fig. 3, in which it will be seen that the felloe-end is held by the centre N, whereas the opposite end is held by the clamp Q, into which it is inserted, and secured by the set-screws *e*.

The belt E, which is of sanded cloth, is now made to revolve.

The spoke D′ is also rotated by the crank E′, bringing, thereby, the surface of the spoke to the face of the revolving apron, which, by virtue of its sanded nature, smooths and polishes down the roughness of the spoke.

I am aware that spokes have been polished by being made to rotate in contact with a sanded revolving belt. In such machines the spoke, in consequence of its unequal diameters or oval character, is cut away more rapidly at the edge, or the greater diameter, than on the flattened side, or the shorter diameter, the result of which is, that the spokes become irregular in shape, and unequal in size, for the reason that the elliptical shape of the spoke only governs its contact with the apron; hence the pressure exerted upon it in order to keep it in contact with the belt, is greater when the spoke is edgewise to the apron than when presenting its flattened sides thereto; hence the unequal reduction or cutting down of the surface of the spokes, and consequent irregularity in them.

To avoid this defect in such machines, I have resorted to the use of the cam or pattern M, above referred to, which is, in shape, that of a transverse section of the spoke, elliptical.

Said cam being on the shaft to which the clamp Q is secured, and wherein is held the tenon-end of the spoke, necessarily rotates with it.

The cam, as it revolves, slides or runs upon the arm F′, fig. 1, which vibrates the stay in which the spoke is held, instead of the stay being vibrated by the spoke.

By this device, it will be obvious, that the pressure upon the spoke will be equalized as the cam adapts the spoke to the apron, hence the reduction or cutting down of the roughness will be equal over its entire surface, as no more pressure is exerted upon the spoke at one side than on another, while it is kept revolving; hence, any number of spokes will have a uniformity in shape and size.

Also, as before said, the felloe-end of the spoke is held by the centre N, on which it revolves.

The extreme end being kept down by the plate G′, under the edge of which it runs in a circular notch,

as the end of the spoke is not round, but slightly oval, the spring P allows the centre to adjust itself to the elliptical rotation of the spoke, therefore it is readily and equally brought to the surface of the polishing-apron or belt; hence it is worked down uniformly with the entire length of the spoke, the large end of which is controlled by the action of the cam, as above said.

The spoke, in its application to the belt, is pressed thereon with more or less strength by the treadles B', which, as the foot is placed upon it, brings the spoke to the apron by the vibratory movement allowed to the cross-bar and stay in which the spoke is confined.

It will be observed, that the supplementary roller C is so arranged in its relation to the front roller, that a very limited space is between them, so that, as the spoke is pressed down upon the apron, it will not yield greatly to such pressure, and, though it should be slightly deflected by the pressure, its resistance, in consequence of the nearness of the rollers, will be such as to oppose a strong and even surface to the spoke.

It will be obvious, that other irregular forms than spokes can be polished in this machine, such as axe-handles, &c., in which case, if the article is greatly irregular, a full pattern of the article will be required, instead of a section or cam, as above shown.

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

1. The combination of the cam M, which is adjusted upon the driving-arbor that revolves the spoke D', the pivoted adjustable stay K, and frame vibrating upon rock-shaft H, and treadle B', with the revolving endless polishing-apron E, all constructed to operate in the manner and for the purpose substantially as described.

2. The adjustable yielding centre N, in combination with the pivoted stay K, constructed to operate substantially as described.

3. The adjustable central supporting-roller C, when arranged with relation to rollers B and D, endless apron E, and spoke D', for the purpose substantially as described.

J. V. WOOLSEY.

Witnesses:
S. C. WHEELER,
C. H. HUBBARD.