F. W. RITTERHOFF.

Tobacco Cutter.

No. 52,747. Patented Feb. 20, 1866.

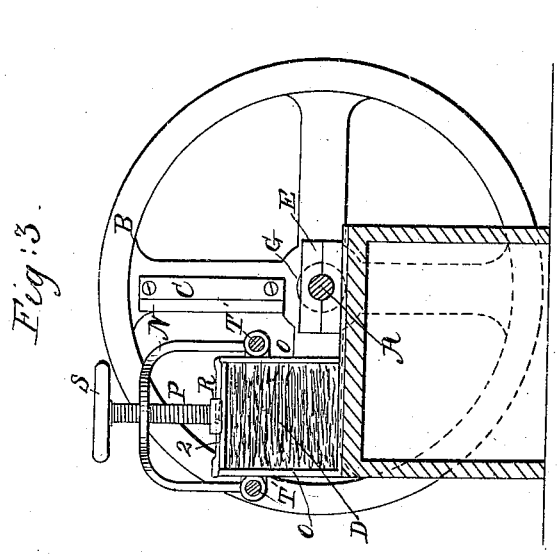

Fig: 3.

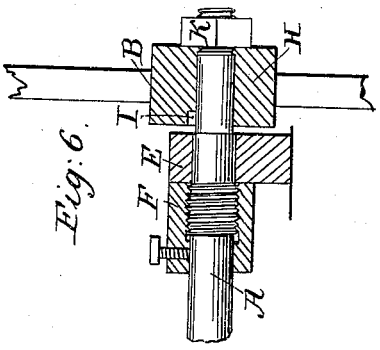

Fig: 6.

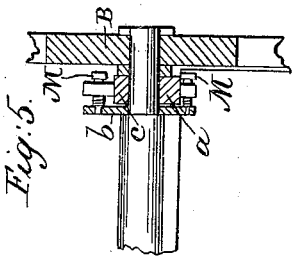

Fig: 5.

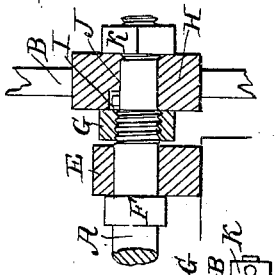

Fig: 4.

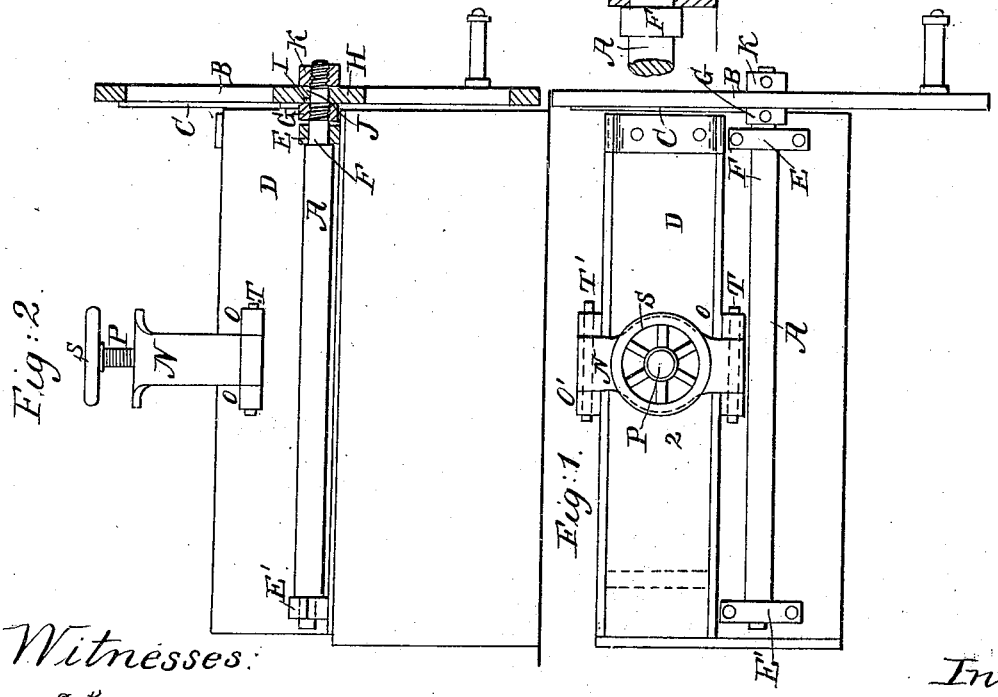

Fig: 2.

Fig: 1.

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F. W. RITTERHOFF, OF NEW YORK, N. Y.

IMPROVEMENT IN TOBACCO-CUTTING MACHINES.

Specification forming part of Letters Patent No. **52,747**, dated February 20, 1866.

To all whom it may concern:

Be it known that I, F. W. RITTERHOFF, of the city, county, and State of New York, have invented certain new and useful Improvements in Tobacco-Cutting Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the drawings which accompany and form a part of this specification.

Of these drawings, Figure 1 is a top view of a tobacco-cutting machine containing my improvements. Fig. 2 is a side elevation of the same. The fly-wheel upon which the cutter is fixed and the bearing of the fly-wheel arbor next to it are shown vertically bisected to exhibit more clearly the construction of the same. Fig. 3 is a vertical cross-section of the machine. Fig. 4 is a detached view of the end of the fly-wheel arbor in an enlarged scale, upon which the hub of the fly-wheel and adjusting device are shown in section. Fig. 5 represents a modification of the same, and Fig. 6 represents another modification of the same.

Similar letters of reference in the several figures indicate corresponding parts.

Tobacco-cutting machines as now constructed, though very efficient by reason of the addition of many late improvements, still require certain other devices with which, in one respect, to overcome quite a defect in the result of the working of the machine after a short use thereof, and in another respect to aid in the more quick and easy removal of certain of its parts.

The first branch of my improvements relates to this very essential and important matter, and cures what has been heretofore looked upon as a defect in all tobacco-cutting machines. The second branch of my improvements is of that kind of invention that appertains to a saving of time and greater convenience in the manipulation of a certain portion of the machine. Devices answering the purpose are in use, but more inconvenient to handle and adjust, and requiring more time in their adjustment.

The objects, therefore, of my improvements are as follows:

First, when the machine has been used for the purpose of cutting tobacco for a short time the shaft that carries the fly-wheel and cutter becomes so worn near the journal-boxes that it has a longitudinal movement. This movement, though scarcely sensible to the eye and unobjectionable in many ordinary operations, here becomes detrimental, and it is essential that this wear be in some manner taken up so as not to affect the cutting of the tobacco. This will be better understood by observing the operation of the machine in cutting tobacco, when the necessity of having a true and regular cut at every revolution of the wheel containing the knife, and of always keeping the knife in the same plane of motion with reference to the end of the tobacco-box, will be obvious. It is plainly to be seen that if the wear of the shaft at its journal-boxes is not compensated for in some way, or, as I term it, "taken up," the cutting-knife will not keep in the same plane of motion, and the result will be that in some of the revolutions of the fly-wheel the knife will pass the end of the cheese of tobacco, which has been fed through the box of the machine the required distance, as regulated by the feed-motion, without cutting it, and in the consecutive revolution double the quantity will be cut from off the end of the cheese, the tobacco taken off having, in consequence of these omitted cuts, great unevenness in it. There being sometimes as many as three hundred and sixty cuts to an inch, it is evident that a slight wear on this shaft will displace the cutter enough to cause the difficulty I have above stated. The first part of my improvements is therefore designed to overcome this defect.

Second, the follower used in the tobacco-box after the cheese has been inserted for the purpose of being cut has heretofore been in a separate piece and fastened down by clamps or wedges in various ways. What I now propose by the second part of my said improvements is to have this follower connected to the tobacco-box, removable to either side when it is required to replace the cheese, and easily adjusted back and down to the box after the cheese has been replaced by a simple device hereinafter described.

To enable others skilled in the art to make and use my said improvements, I will now proceed to describe their construction and mode of operation.

A is the shaft carrying the fly-wheel B with its cutter C. D is the tobacco-box. E E′ are journal-boxes. F is a shoulder on the inner side of the journal-box E and bearing against it. G is an adjustable shoulder, placed upon the shaft on the outer side of the journal-box E. Within a short distance of this adjustable shoulder, and upon that portion of the shaft which is covered by the hub H of the fly-wheel, is placed a small projection, I, which takes into a slot, J, made in the said hub to receive it, and along which slot this projection or small pin is permitted to move—say for the distance of an eighth of an inch. K is the nut at the end of the shaft for keeping the wheel-containing cutter in its position and on the shaft.

As the wear makes itself at all appreciable I screw up the adjustable shoulder G upon the screw-thread at I′ on the shaft, which brings the shaft forward toward the cutter. The projection I, in consequence, will have a slight longitudinal movement along the slot in the hub H. I then screw the outer nut, K, close up to the said hub, thereby taking up the wear of the shaft and keeping the knife that cuts the tobacco always in the same plane of motion.

In Fig. 5 is seen a modification of the principle of the above-described improvement. The journal-box is seen split at *a a* into two parts. The adjustable screens M M, in moving out the inside portion, *b*, of the journal-box from the outer portion *c*, causes the said inside portion to take up the wear.

In Fig. 6 is seen another modification of the same, which, from what has gone before herein, is sufficiently clear without description.

It is evident that this improvement is adaptable to any shafting where the use is analogous to the one herein described.

N is an arched piece of metal hinged onto the outer sides of the cheeks *o o′* of the tobacco-box. Through the center of this arched piece passes vertically a screw, P, the lower end of the screw being fastened into the follower Q at R, but free, so as to admit of a rotary or swivel motion being imparted to the screw alone. At the top end of this screw is attached a hand-wheel, S.

On opening the box in order to insert the cheese of tobacco to be cut, the hand-wheel S is rotated up until the follower Q is clear of the cheeks *o o′* of the box, when the pin of either of the hinges at T T′ is withdrawn, and the arch-piece, hand-wheel, screw, and follower attached are all permitted to swing over to one side. The cheese being replaced, the arch-piece is swung back and the follower screwed down by means of the hand-wheel S and screw attached until the follower rests solid at one end of the box upon the nut-plate through which the piston of the box passes and at the other on the cheeks *o o′* by means of the clamps *v v′*. This constitutes the second part of my improvements.

Having described my improvements in tobacco-cutting machines, what I claim as new, and desire to secure by Letters Patent, is—

1. A device for taking up the wear of the shaft, operating substantially as and for the purpose herein shown and described.

2. The combination and arrangement of the follower with the hand-wheel and screw, arch-piece, and cheeks of the tobacco-box, operating substantially as and for the purpose herein shown and described.

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