W. H. WALSH.
Gin-Saw Sharpener.

No. 207,919. Patented Sept. 10, 1878.

Fig: 1.

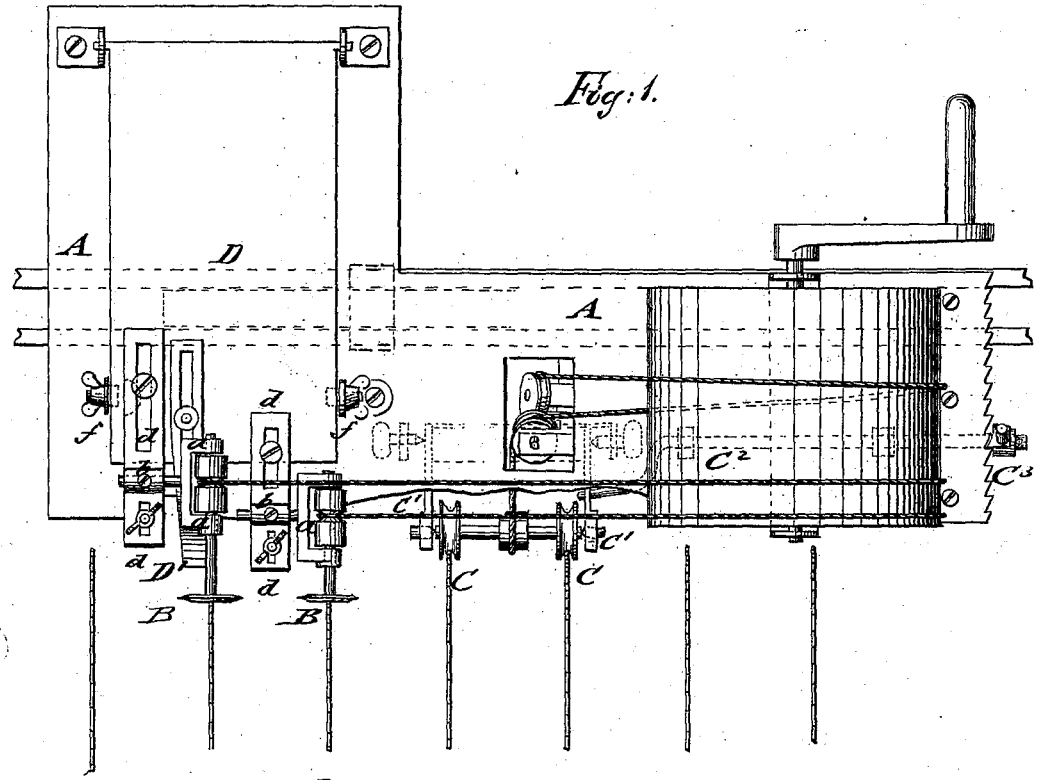
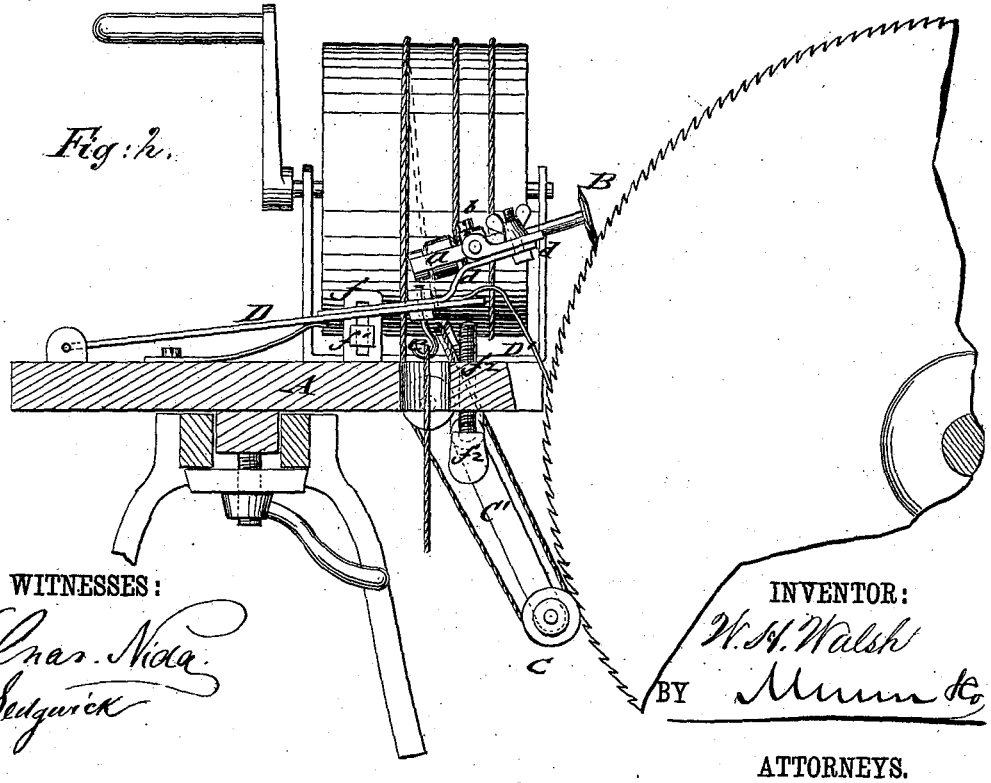


Fig: 2.



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WILLIAM H. WALSH, OF FORT WORTH, TEXAS.

IMPROVEMENT IN GIN-SAW SHARPENERS.

Specification forming part of Letters Patent No. **207,919**, dated September 10, 1878; application filed July 10, 1878.

To all whom it may concern:

Be it known that I, WILLIAM HENRY WALSH, of Fort Worth, in the county of Tarrant and State of Texas, have invented a new and Improved Cotton-Gin-Saw Sharpener, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a top view, and Fig. 2 a sectional side elevation, of my improved cotton-gin-saw sharpener.

Similar letters of reference indicate corresponding parts.

This invention is intended to provide, for the purpose of sharpening the saws of cotton-gins, an improved machine, of simple and effective construction, by which the teeth of the saws are cut square at the inside and pointed at the top, and by which the sharpening of all the saws of a cylinder is accomplished in quick and perfect manner, and without the objectionable features of hand-sharpening.

The invention consists of one or more revolving disks with file-cut circumferences, whose mandrels revolve in adjustable bearings of a hinged, guided, and spring-supported platform, that has a front spring for successively engaging the teeth of the gin-saws, and turning the saw-cylinder, by lowering the platform, for exposing new teeth to the file-disks.

One or more revolving emery-wheels are supported by a swinging and adjustable bottom frame of the table, and applied to the teeth, so as to sharpen their top parts simultaneously with the sharpening of the inside by the file-disks. The sharpening-disks and emery-wheels are revolved by belt-and-pulley connection with a crank-wheel or drum, and the platform lowered by a treadle-connection to turn the saw-cylinder.

Referring to the drawing, A represents the supporting-table of my improved cotton-gin sharpener, which table is arranged in adjustable manner on a stand in the nature of a lathe-bench, and secured thereto by screw or other clamping attachment. The bench or stand is of the same length as the frame of the cotton-gin, and placed parallel to the saw-cylinder of the same, the table being readily adjusted by screws to the required height.

On the table A are arranged the working parts of the sharpener, which consists of one or more sharpening-disks, B, with file-cut circumference, and of a corresponding number of emery-wheels, C, that are arranged at the same distance from each other as the sharpening file-disks, but below the same, so that while the disks B sharpen the inside of the teeth of one or more saws, the emery-wheels C sharpen at the same time the outer edges of the teeth of adjoining saws, whose teeth are already cut at the inside.

The mandrels of the file-disks B revolve in bearings *a*, which are adjusted by set-screws *b* in sleeves of slotted arms *d*, which latter are again adjusted by set-screws on a hinged and spring-cushioned platform, D, of table A. The file-disks B can thus be set to any position or inclination required by the teeth of the gin-saws, they being revolved by belt-and-pulley connection of the mandrels with a large driving pulley or wheel and by a hand or treadle operated crank-shaft. The file-disks B cut square across the inside of the saw-teeth, and sharpen them in the same manner as they are sharpened in the factory.

The platform D has at its front end a curved forward-extending adjustable steel spring, D′, that engages a tooth of one of the saws below the disks, so that by lowering the platform by means of a treadle connected to a bottom hook, *e*, of the platform the saw-cylinder may be turned for the distance of one tooth.

The platform D is hinged at its rear end to supports of the table A, and moves in its descent between two slotted side posts, *f*, which vary in height. Both of the slotted posts are provided with adjustable stops, f^1 for limiting the descent of the frame, the stop of the larger side post being removed when the frame is to move below the same and strike the top of the shorter guide-post. A set-screw, f^2, located at the front of the table, can also be made to engage with the platform or the spring D′, and acts as an auxiliary stop device.

The side and front stops serve to guide the platform and to regulate the distance to which the platform may be swung by the treadle, for moving the saw-cylinder for the distance of one tooth, while the cushioning-spring raises the platform again and applies the file-disks and spring to the next adjoining teeth when the treadle is released.

The shaft of the grooved emery-wheels C turns on lathe-centers of a swinging frame, C^1, which is hung to the under side of the table, and is raised and lowered through the medium of a rocking cranked shaft or arm, C^2. The latter enters a slot in one of the side arms of the swinging frame, and carries at its outer end a lever, C^3, for turning the shaft. Said lever is movable on the rock-shaft, and is pressed in contact with a rack-plate on the table by means of a spring, thus locking the lever for holding the frame D′ in the desired position. In place of the spring-lever and rack, any other suitable devices may be resorted to for holding the frame in an elevated position while the emery-wheels are at work. The latter are also revolved by a belt-and-pulley connection with the large driving-pulley of the file-disks, the belt passing through a recess of the table A, and being there passed over two intermediate pulleys secured at the proper position for guiding the belt.

When the emery-wheels are thrown down by the lever C^3 under the table, so as to clear the gin-saws, the driving-belt of the same is loosened; but when they are thrown up again to the teeth the belt is tightened, so as to revolve then the emery-wheels.

When the machine is adjusted to the saw-cylinder and the teeth of the first two saws cut at the inside, the emery-wheels begin then to sharpen the outside of the teeth just cut simultaneously with the cutting of the teeth of the next adjoining saws by the file-disks, and so on. The machine is moved along the bench when one set of saws is finished to the next set of saws, and so on until all the saws of the cylinder are sharpened.

During the cutting operation the saw-cylinder is held, by a suitable friction device, steady to the sharpening disks and wheels; but it may be axially turned by the spring of the platform, to feed one tooth after the other to the action of the cutters.

A gin-saw cylinder may by this machine be sharpened in a rapid and economical manner, the machine being driven by hand or foot, and, on account of its simple and cheap construction, capable of being furnished at comparatively low price.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a gin-saw sharpening machine, the combination of revolving adjustable file-disks and of a gin-saw-adjusting spring, both applied to a swinging and spring-cushioned platform, with grooved revolving emery-wheels, that sharpen the outer edge of the teeth simultaneously with the cutting of the inside of the teeth by the file-disks, substantially as shown, and for the purpose specified.

2. In a gin-saw-sharpening machine, the combination of one or more revolving adjustable file-disks with a hinged spring-cushioned and treadle-acted platform, having a forward-extending spring to engage a tooth of one of the saws and turn the saw-cylinder, substantially as and for the purpose set forth.

3. The combination of the slotted side posts f and adjustable stops f^1 with the hinged spring-supported file-frame and the saw-feeding spring, as and for the purpose set forth.

4. In a gin-saw-sharpening machine, the combination, with the supporting-table of a swinging frame, carrying grooved revolving emery-wheels, with a crank-shaft lever and locking mechanism, to throw the emery-wheels up to the work or down away from the same, substantially as set forth.

WILLIAM HENRY WALSH.

Witnesses:
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