

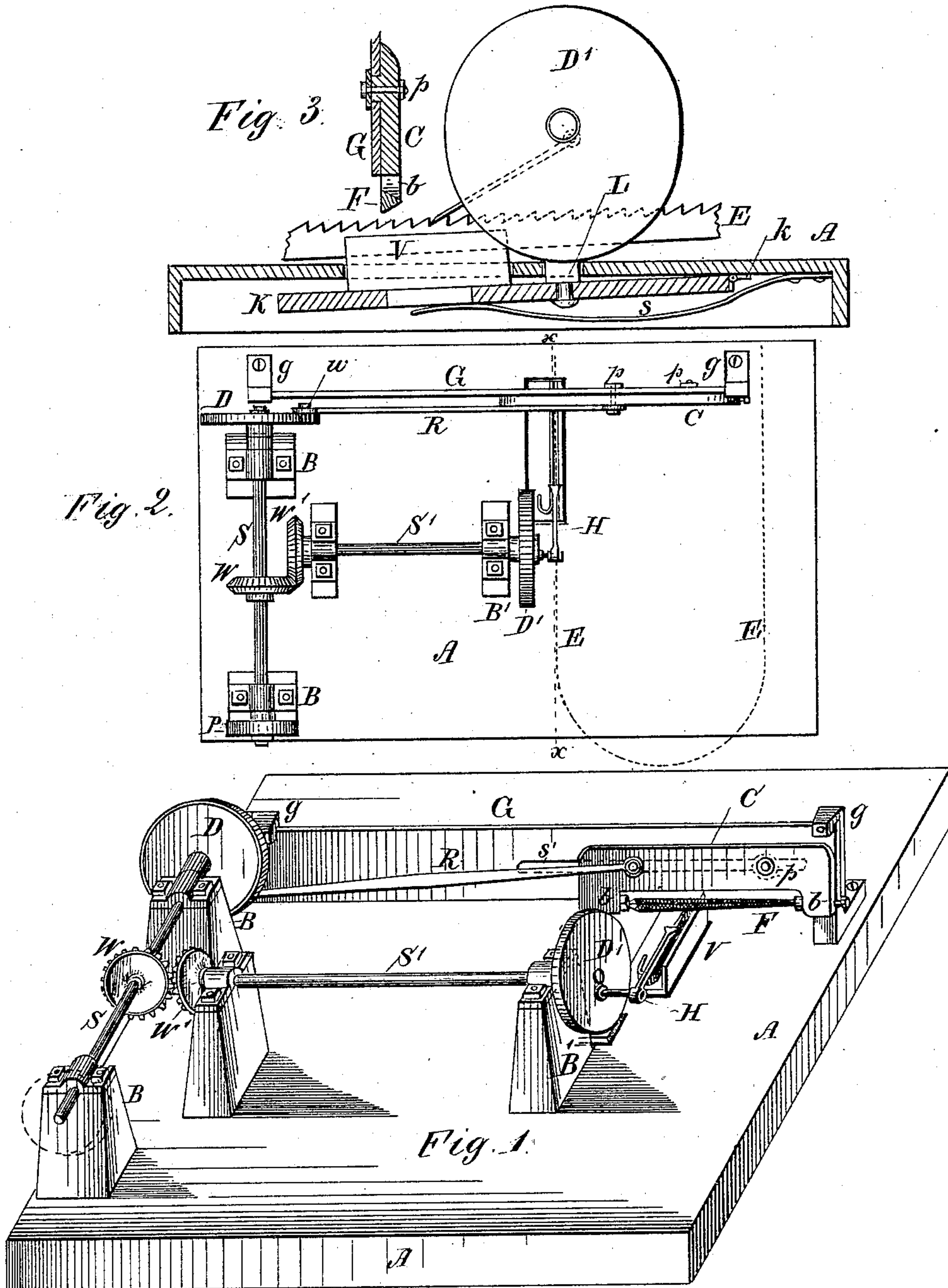
(No Model.)

J. P. HANSEN.

MACHINE FOR SHARPENING SAWS.

No. 285,126.

Patented Sept. 18, 1883.



Witnesses
H. A. Daniels
Wm. E. Boulter

Inventor
Jens Peter Hansen
per Henry Orth atty.

UNITED STATES PATENT OFFICE.

JENS PETER HANSEN, OF SORÖE, SJÆLLAND, DENMARK.

MACHINE FOR SHARPENING SAWS.

SPECIFICATION forming part of Letters Patent No. 285,126, dated September 18, 1883.

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To all whom it may concern:

Be it known that I, JENS PETER HANSEN, a citizen of Denmark, residing at Soröe, Sjælland, in the Kingdom of Denmark, have invented certain new and useful Improvements in Machines for Sharpening Band and other Saws; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention consists in certain improvements in the construction of machines for sharpening band and other saws, as hereinafter fully described, and as pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of my machine. Fig. 2 is a top plan view, and Fig. 3 is a vertical transverse section on line *x x* of Fig. 2.

In the above drawings like letters of reference indicate like parts.

A is the bed-plate upon which the operating mechanism is mounted. It may be a table-top, or any other suitable support of such construction as to afford room below it for purposes hereinafter explained.

B B are standards, in which are formed the bearings for the main shaft S, that carries a belt-pulley, P, if the machine is operated by power from a prime motor, such as steam or water or other suitable power; or said shaft may be provided with a crank when the machine is to be operated by hand. A guide-plate, G, secured to standards *g*, has a longitudinal slot, *s'*, in which fits a pin or pins, *p*, of a reciprocating slide, C, that has suitable bearings, *b b*, in which a file, F, may be secured. The slide-plate C, with the file F, is reciprocated by a connecting-rod, R, one end of which is pivoted upon said plate, the other end being pivoted to the crank or wrist pin *w* of a disk, D, mounted upon shaft S.

The saw to be sharpened is held in a clamp or a tail-vise, V, or other suitable device, in such manner as to be capable of longitudinal motion therein to adapt it to be fed forward

automatically as the sharpening of each tooth is effected.

In Fig. 2 of the accompanying drawings I have shown as an illustration an endless band-saw, E, which is being sharpened, the file acting upon its teeth at each forward movement of said file, at which time the saw remains stationary, it being fed forward a sufficient distance to bring a fresh tooth into position to be sharpened when the file is moving backward. To effect this and move the saw out of the way of the file during its backward movement, I employ the following mechanism:

The shaft S carries a bevel-pinion, W, that meshes with a bevel-pinion, W', mounted upon one end of a shaft, S', that rotates in bearings B', secured to the bed-plate. Upon its opposite end said shaft S' carries an eccentric disk, D', upon which is pivoted a pawl, H, that takes into the saw-teeth, the relation of the pawl and disk being such as to feed the saw forward the distance of one tooth at every revolution of the eccentric D'.

The tail-vise V is supported from a plate, K, hinged at one end underneath the bed-plate A, as shown at *k*, and its free end is held in proper position by a leaf-spring, *s*, so as to hold the teeth of the saw in the path of the file, said vise projecting through a suitable slot in the base-plate. The plate K also carries a block or stud, L, that projects above the base-plate immediately beneath the periphery of the eccentric D'. The relative arrangement of the eccentric D' and the stud L is such that the former will bear upon and depress the latter while the file F is moving backward and the saw is fed forward. The action of the eccentric upon the stud L depresses the plate K, and with it the tail-vise and saw held thereby, to move said saw out of the way of the file during the backward movement of the latter, and while said saw is being moved forward by the pawl H, as plainly shown in Fig. 3. The teeth of a saw may be subjected to the action of the file repeatedly if not sharpened sufficiently by one operation, as will be readily understood.

Instead of the crank-disk D and eccentric D', a crank and a cam, respectively, may be employed, and instead of the leaf-spring *s* a coiled spring, or a cord or chain and a weight,

or other analogous appliances may be used to hold the tail-vise normally in a position in which the teeth of a saw held by said vise will lie in the path of a file moving at right angles to said saw.

As will be seen, the pawl H here serves a twofold purpose—namely, to hold the saw against backward movement when the file moving in one direction is acting upon one of the teeth thereof, and to feed the saw forward a distance of one tooth when said file is moving in a reverse direction. The eccentric D' also performs two very important functions. On the one hand it throws the pawl H forward the required distance to feed the saw, as described, and on the other said eccentric simultaneously depresses the saw out of the way of the file, as explained. The simplicity of construction and efficiency of my improved saw-sharpening machine will be apparent to all those conversant with this class of machines.

Having now described my invention, what I claim is—

1. The combination, with the reciprocating file F, connecting-rod R, crank D, bevel-pinion W, and shaft S, of the clamp or vise V, disk D', pawl H, shaft S', and bevel-pinion W', all arranged for operation as set forth.

2. The combination, with the reciprocating

file F, connecting-rod R, crank D, bevel-pinion W, and shaft S, of the clamp or vise V, disk D', pawl H, appliances to depress the vise when the file is reciprocated in one direction, pinion W', and shaft S', all constructed for co-operation, as described.

3. The combination, with the tail vise or clamp V, of the eccentric or cam D', plate K, and stud or block L, substantially as and for the purposes specified.

4. The combination of the clamp or vise V, eccentric or cam D', pawl H, and mechanism to rotate said eccentric, with the spring-plate K and stud L, substantially as and for the purposes specified.

5. The combination, with the reciprocating file F, the clamp or vise V, its supporting yielding plate K and stud L, the eccentric or cam D', pawl H, shaft S', and pinion W', of the shaft S, pinion W, crank D, and connecting-rod R, all constructed for co-operation substantially as and for the purposes specified.

In testimony whereof I affix my signature in presence of two witnesses.

JENS PETER HANSEN.

Witnesses:

R. ARIDTJEN,

A. STERNBERG.