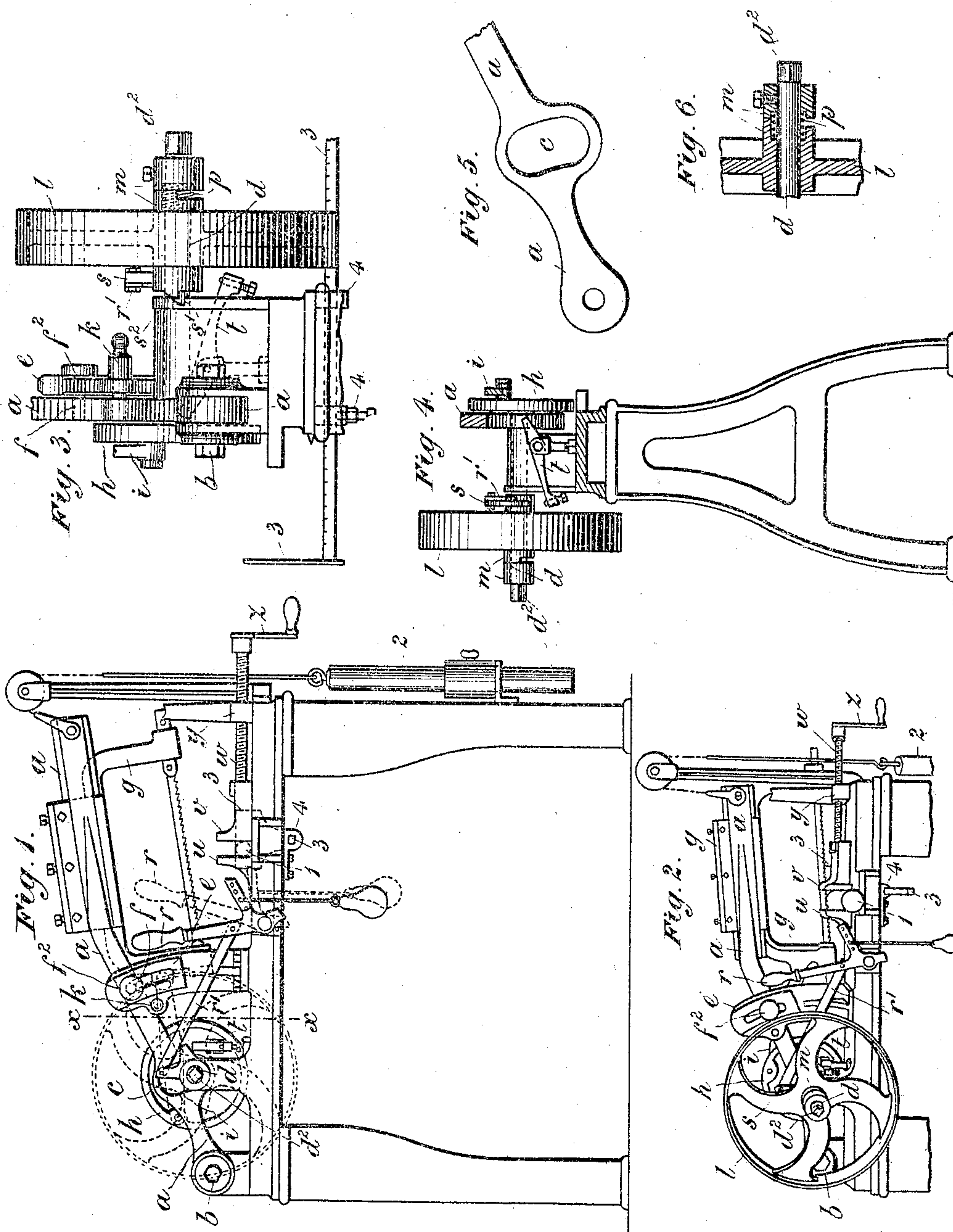


No. 810,749.

PATENTED JAN. 23, 1906.

J. HAMPTON, SR.
HACKSAWING MACHINE.
APPLICATION FILED NOV. 10, 1904.



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HACKSAWING-MACHINE.

No. 810,749.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed November 10, 1904. Serial No. 232,228.

To all whom it may concern:

Be it known that I, JOSEPH HAMPTON, Sr., a subject of the King of Great Britain, residing at Franchise street, Kings Hill, Wednesbury, England, have invented certain new and useful improvements in Hacksaw-Machines, of which the following is a specification.

My invention consists of the construction and arrangement or combination hereinafter described of the parts of hacksaw-machines for cutting metallic rods, tubes, and the like, whereby the said machines are rendered more efficient in use and the working parts less subject to wear than in machines as at present constructed. Further, the starting of the machines is facilitated and unattended with risk of accident to the attendant, and the stopping of the machines is made automatic.

In constructing a hacksaw-machine according to my invention I pivot the saw-frame-carrying lever to a fixed axis or spindle at a short distance behind the driving-shaft of the machine, the angular motion of the saw-frame-carrying lever in a vertical plane being insured by a curved upright or guide at or about the middle of the bed of the machine, a pin attached to the saw-frame lever working in a curved slot in the said upright or guide. The weight of the saw-frame lever is partially balanced by a depending weight attached to the outer end of the said lever by a belt or the like passing over a pulley. The saw-frame has the usual dovetail sliding connection with the saw-frame lever, and the said saw-frame is worked from the crank plate or disk on the driving-shaft in the ordinary way.

Figure 1 of the accompanying drawings represents in side elevation a hacksaw-machine to which the improvements constituting my invention are applied, the hacksaw being in its raised or out-of-action position. Fig. 2 is a perspective view of the upper portion of the machine with the hacksaw down or in its position for work. Fig. 3 is an elevation of the rear end of the machine, certain parts being broken away. Fig. 4 is a cross-section of the machine, the said section being taken on the dotted line *x x*, Fig. 1. Fig. 5 represents in side elevation the rear portion of the hacksaw-frame-carrying lever detached. Fig. 6 represents a portion of the belt-driving pulley and clutch for connecting the said pulley to the driving-shaft in vertical

section. Figs. 3, 5, and 6 are drawn to a larger scale than Figs. 1, 2, and 4.

The same characters of reference indicate the same parts in the several figures of the drawings.

a is the saw-frame-carrying lever, pivoted at its rear end to an independent axis *b*. The said lever *a* is slotted at *c* (see Fig. 5) to permit it to work over the driving-shaft *d* of the machine. The saw-frame-carrying lever *a* is guided in its angular motion and the plane of the same preserved by the curved slotted upright *e*, in the slot of which a pin *f*, projecting from the lever *a*, works the head *f*² of the said pin *f*, bearing on the opposite side of the upright *e*. The saw-frame *g* has the ordinary dovetail connection with the lever *a*, on which it works, and the said frame *g* is operated from the crank-plate *h* by means of the connecting-rod *i*, (indicated in dotted lines in Fig. 1,) as is usual.

When the hacksaw-machine is not at work, the lever *a* is preserved in its raised position by a stop-pin *k*, the end of which by the pressing of the pin inward is made to project into the path of the lever *a*. The belt-pulley *l* (which is indicated in dotted lines only in Fig. 1) is not keyed to the driving-shaft, but is free to rotate thereon and is made to drive the shaft when the machine is started by a clutch *m* on the end of the shaft, the parts of which are normally preserved apart by a coiled spring *p*. (See Fig. 6.)

The starting of the machine is effected by the turning of the hand-lever *r*, situated at one side of the machine and in front of the belt-pulley *l*, into the forward position, (indicated in dotted lines in Fig. 1,) and then depressing the saw-frame-carrying lever *a* until the hacksaw is brought into contact with the rod *1* to be cut, as is represented in Fig. 2.

The lever *r* is connected by a connecting-rod *r'* to one arm of a bell-crank lever *s*, the boss of which occupies a position on the driving-shaft between the belt-pulley *l* and the bed or frame of the machine. When the machine is not at work, a projection *s*² (see Fig. 3) on the boss of the bell-crank lever *s* occupies a notch *s'* in the frame. By the turning of the hand-lever *r* from its back position (represented in Figs. 1 and 2) into its forward position (indicated in dotted lines in Fig. 1) the boss of the bell-crank lever *s* is

partially rotated on the shaft d and the projection s^2 brought out of its notch s' , as is represented in Fig. 3. By this action the driving-belt pulley l and movable part of the clutch m in one piece with the pulley l are forced laterally along the shaft d against the action of the coiled spring p and the movable part of the clutch made to engage with the part of the said clutch fixed on the shaft d , so as thereby to couple the pulley l to the shaft.

The machine is stopped automatically when the saw has cut through the rod 1 or article being operated upon in the following manner: A lever t (best seen in Figs. 3 and 4) is arranged to cross the bed of the machine, so that one arm terminates under the hacksaw-frame-carrying lever a and the other end terminates under the lower arm of the bell-crank lever s . When the saw has cut through the rod 1, the lever a and saw-frame g drop by their own weight, as is usual, and the saw-frame lever a , coming into contact with the arm of the lever t , projecting into its path, the said lever t is turned in the direction proper for giving an upward motion to the lower arm of the bell-crank lever s , the projection s^2 of the boss of which is brought into line with the notch s' in the fixed frame of the machine, thereby permitting the pulley l and movable part of the clutch m to be moved under the action of the spring p into their idle or non-driving positions.

I prefer to partially counterbalance the weight of the lever a and saw-frame g by the weight 2.

When the machine is to be worked by hand, a winch or handle is fitted to the square end d^3 on the shaft d .

For fixing the rod or article to be operated upon on the bed or table of the machine I provide the table with the usual fixed vertical stop-plate u and combine therewith a sliding plate v , which is adjusted by a horizontal screw w , working in a screw box or hole in an upright y at the end of the table, the said screw being rotated by a winch or handle z .

The top of the upright y is so shaped that it acts as a stop to limit the falling motion of the saw-frame lever a when the saw has cut through the rod 1 or article under treatment.

To facilitate the dividing of a rod or tube into disks or washers or into portions of equal length, I combine with the machine a gage 3, working in depending brackets 4 4, fixed at opposite sides of the machine.

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

1. In a hacksaw-machine, the combination with the machine-table, a driving-shaft, a saw-frame-carrying lever provided with a slot through which the driving-shaft extends, said slot permitting the lever to work over the said shaft, and an upright carried by the table and provided with an independent axis for said lever, said axis being situated at the rear of the driving-shaft.

2. In a hacksaw-machine, the combination with the table of the machine, of an operating-shaft, a saw-frame-carrying lever, a saw-frame thereon operated from a crank-plate on said shaft, a belt or driving pulley on the said shaft, a starting and stopping lever pivoted at one side of the table of the machine and in front of the belt-pulley, a bell-crank lever having the boss thereof mounted on said shaft between the belt-pulley and the frame of the machine and a connecting-rod between the starting and stopping lever and one arm of said bell-crank lever, said boss having a projection adapted to engage in a notch in the frame when the machine is at rest.

3. In a hacksaw-machine, an operating-shaft, a bell-crank lever carried thereby, a hacksaw-frame-carrying lever, a stop mechanism, and a stop-lever having one of its arms projecting in the path of the hacksaw-frame-carrying lever and the other of its arms terminating under one of the arms of the bell-crank lever and actuating in connection with said hacksaw-frame-carrying lever and said bell-crank lever said stop mechanism.

4. In a hacksaw-machine, an operating-shaft, a bell-crank lever carried thereon, a hacksaw-frame-carrying lever, a stop mechanism, and a stop-lever having one of its arms projecting in the path of the hacksaw-frame-carrying lever and the other of its arms provided with an adjustable seat situated under one of the arms of the bell-crank lever, said stop-lever in connection with said hacksaw-frame-carrying lever and said bell-crank lever actuating said stop mechanism.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOSEPH HAMPTON, SENR.

Witnesses:

RICHARD SKERRETT,
ARTHUR JOHN POWELL.