(No Model.)

H. H. SAWTELLE.

BELT TIGHTENER.

No. 312,659. Patented Feb. 24, 1885.

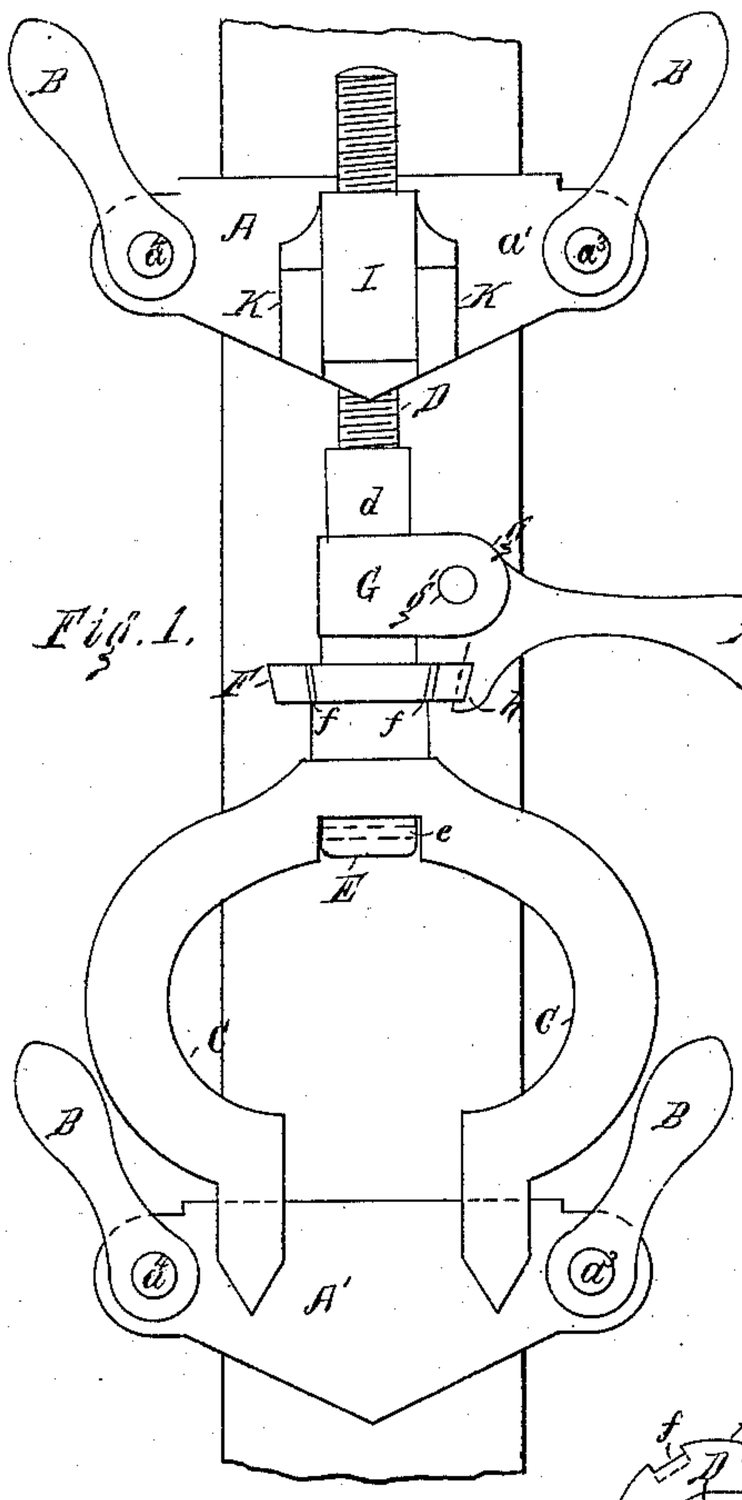

Fig. 1.

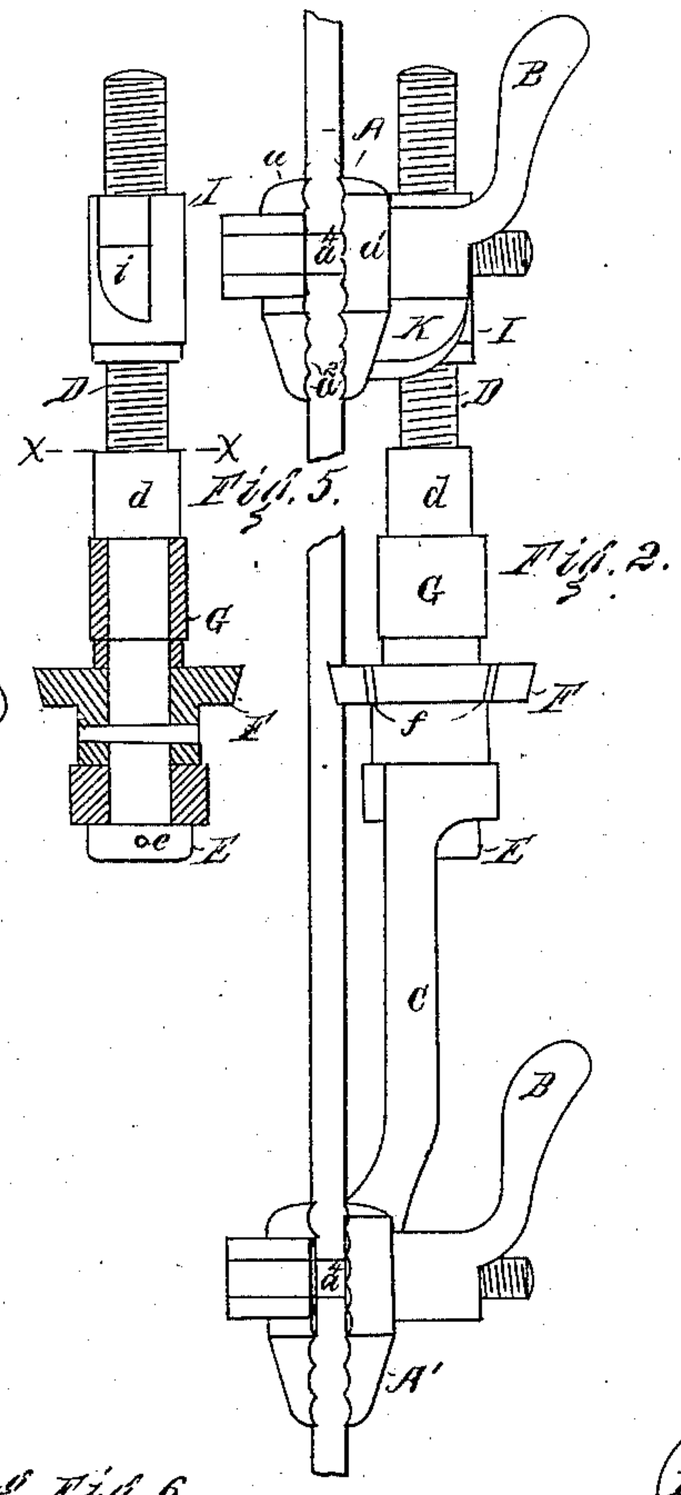

Fig. 5.

Fig. 2.

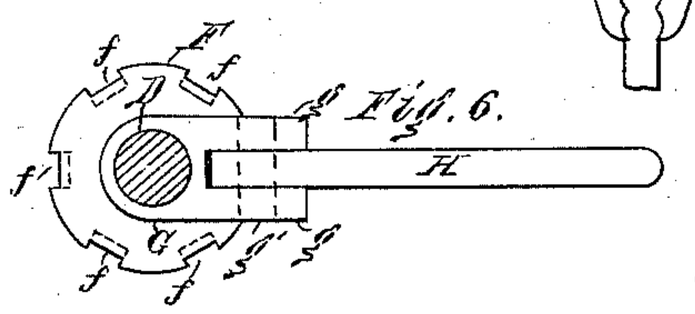

Fig. 6.

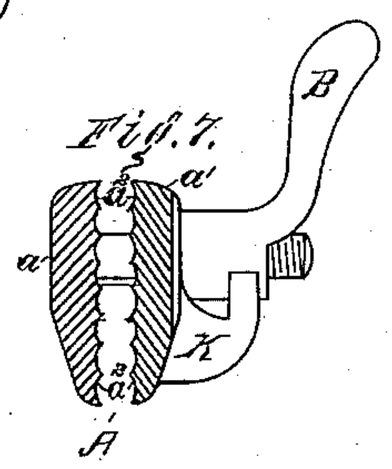

Fig. 7.

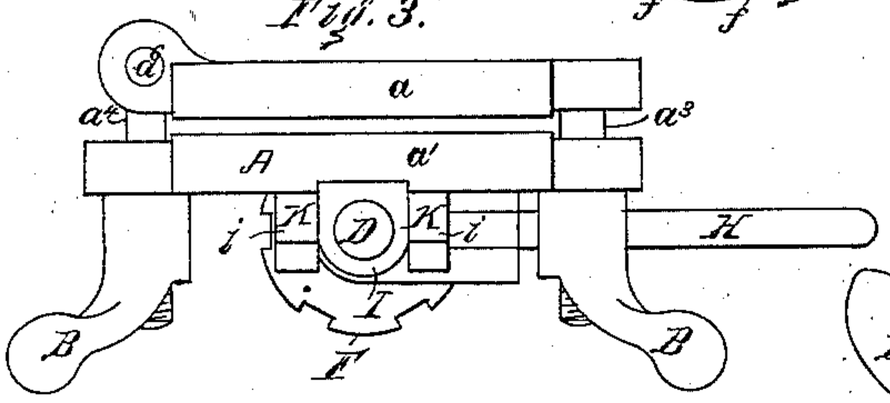

Fig. 3.

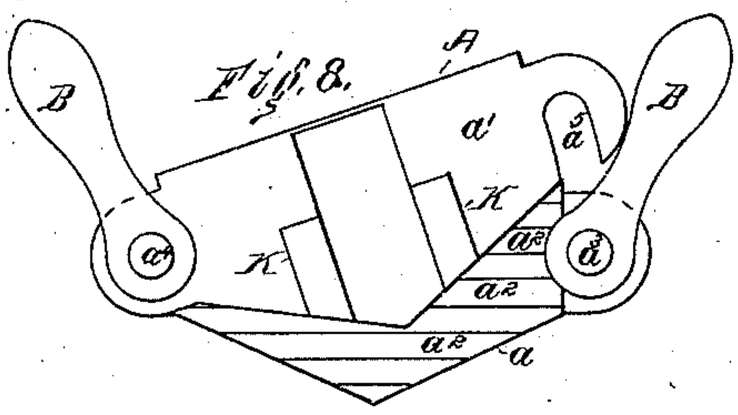

Fig. 8.

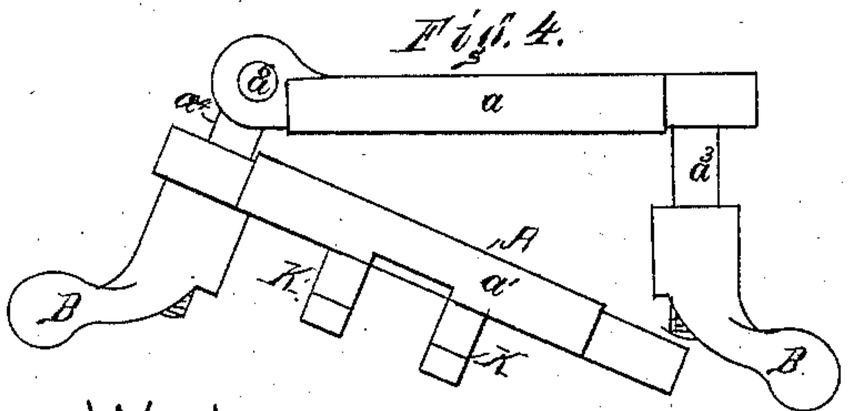

Fig. 4.

Witnesses—

Kirkley Hyde.

Herbert R. White

Inventor—

Herbert H. Sawtelle,

By Albert M. Moore,

His Attorney.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

HERBERT H. SAWTELLE, OF LOWELL, MASSACHUSETTS.

BELT-TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 312,659, dated February 24, 1885.

Application filed November 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, HERBERT H. SAWTELLE, a citizen of the United States, residing at Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a new and useful Improvement in Belt-Tighteners, of which the following is a specification.

My invention relates to belt-tighteners; and it consists in improved means of clamping the ends of a belt and of drawing them together and of holding them in position while they are being joined in such a manner as not to interfere with the operation of joining.

In the accompanying drawings, Figure 1 is a rear elevation of my improved belt-tightener. Fig. 2, a side elevation of the same; Fig. 3, a top view of the same with the clamps closed; Fig. 4, a top view of the upper clamp open; Fig. 5, a side elevation of the screw, shoulder, nut, and collar, and a central vertical section of the ratchet, the collar which supports the pawl-lever, and the upper part of the yoke; Fig. 6, a section on the line *x x* in Fig. 5; Fig. 7, a vertical section through the middle of the upper clamp at right angles to the jaws of the same; Fig. 8, a side elevation of the upper clamp open.

The upper, A, and lower, A′, clamps are substantially alike, differing only in the means by which they are connected with the screw, each clamp consisting of two jaws or plates, *a a′*, provided on their inner faces with transverse corrugations a^2, the front of each clamp being provided, on the inner face near one side thereof, with a threaded stud, a^3, rigidly secured thereto at right angles thereto, and near the other side, with another threaded stud, a^4, pivoted thereto at a^6. The hinged stud a^4 projects through a hole in the back jaw, *a′*, and the back jaw has a vertical slot, a^5, to receive the rigid stud a^3. Handle-nuts B B turn on the studs a^3 a^4, and draw the jaws *a a′* toward each other. It will be seen that the rear jaw, *a′*, can be raised from the stud a^3 by turning it on the stud a^4, as shown in Fig. 8, and that the rear jaw can then be swung away from the front jaw, as shown in Fig. 4, by turning the stud a^4 on its pivot a^6. This allows the clamps to be applied to a belt the ends of which are joined at the time when it is desired to take up the belt before separating the ends of the belt. Separating the ends of the belt before applying the clamp might allow one end to drop out of reach of the belt-mender. The rear jaw, *a′*, of the lower clamp, A′, is cast or otherwise attached to a yoke or loop, C, which swivels on the lower end of the screw D, said lower end of said screw D being passed through a hole in the top of said yoke, and being retained therein by the collar E, surrounding said screw below the top of said yoke, and secured to said screw by the pin *e*. The opening in the yoke is as wide as any belt adapted to be held by the clamp, of which the yoke forms a part.

Above the yoke C is a ratchet-wheel, F, prevented from turning on the screw by a pin, which passes through said screw and through the hub of said ratchet. Above the ratchet is a loose collar, G, provided with ears *g g*, between which at *g′* is loosely pivoted the bent lever or pawl-lever H, the lower short arm, *h*, of which serves as a pawl to engage with the notches *f* in the periphery of the ratchet F, and the longer arm, *h′*, of which serves as a handle to throw the pawl *h* into and out of engagement with the ratchet F, and to turn the ratchet and thereby to rotate the screw.

Above the collar G is an annular shoulder or collar, *d*, on the screw D. Below the shoulder *d* the screw is not threaded, but above said shoulder is provided with a thread, *d′*, with which thread engages the nut I. The nut I is provided with lateral projections or wings *i i*. The back plate of the upper clamp has cast thereon or otherwise secured thereto two hooks, K K, which hook under the wings *i i* on the nut I, whereby said upper clamp may be readily attached to or detached from said nut, so that the upper clamp, which is very light, may be attached to the upper end of the belt, and the screw and other clamp hung thereon before attaching the lower clamp to the belt, and so after both clamps are attached to the belt the upper clamp may be unhooked from the nut and the nut turned on the screw by the fingers nearly to position before the upper clamp is attached thereto. In use one end of the belt is inserted between the jaws of one of the clamps and the other end between the jaws of the other clamp, the clamps being tightened on the belt by turning up the handle-nuts, and the belt is then

stretched sufficiently by turning the screw by means of the pawl-lever and ratchet until the ends of the belt meet in front of the opening of the yoke. If necessary, the ends of the belt are cut to shorten the belt, the belt's said ends meanwhile resting against a board placed between the front of the yoke and the belt, and the cutting being done by a sharp knife, so that if both ends are cut at once they will match, even if not cut at right angles to the sides of the belt. The lacing or other operation of uniting is performed at the opening of the yoke, which leaves both faces of the belt accessible all the way across the belt.

I claim as my invention—

1. The clamp herein described, consisting of two jaws, one of which jaws is provided near one side thereof with a screw-threaded stud rigidly secured to the inner face thereof at right angles thereto, and with another screw-threaded stud pivoted to said jaw at the other side thereof, and the other of which jaws is provided with a hole to receive said pivoted stud, and is adapted to turn on said pivoted stud, and is also provided with a slot to receive said fixed stud, and nuts turning on said studs against the outer face of said last-named jaw, as and for the purpose specified.

2. The clamp herein described, consisting of two jaws transversely corrugated, one of which jaws is provided near one side thereof with a screw-threaded stud rigidly secured to the inner face thereof at right angles thereto, and with another screw-threaded stud pivoted to said jaw at the other side thereof, and the other of which jaws is provided with a hole to receive said pivoted stud, and is adapted to turn on said pivoted stud, and is also provided with a slot to receive said fixed stud, and nuts turning on said studs against the outer face of said last named jaw, as and for the purpose specified.

3. The combination of the screw, the clamp swiveled to the end thereof, a nut turning on said screw and provided with wings, and another clamp provided with hooks adapted to engage with said wings, as and for the purpose specified.

4. The combination of the screw, a clamp swiveled to an end thereof, a nut turning on said screw and provided with wings, another clamp provided with hooks adapted to engage with said wings, a ratchet-wheel secured to said screw, a loose collar surrounding and turning on said screw, and a pawl-lever having a pawl adapted to engage with said ratchet, as and for the purpose specified.

5. The combination of the screw, a clamp provided with a yoke having a central opening as wide as the widest belt which said clamp is adapted to receive, said yoke being swiveled to said screw, a nut turning on said screw, and another clamp, said last-named clamp and the nut being adapted to engage with each other, as and for the purpose specified.

HERBERT H. SAWTELLE.

Witnesses:
ALBERT M. MOORE,
HERBERT R. WHITE.