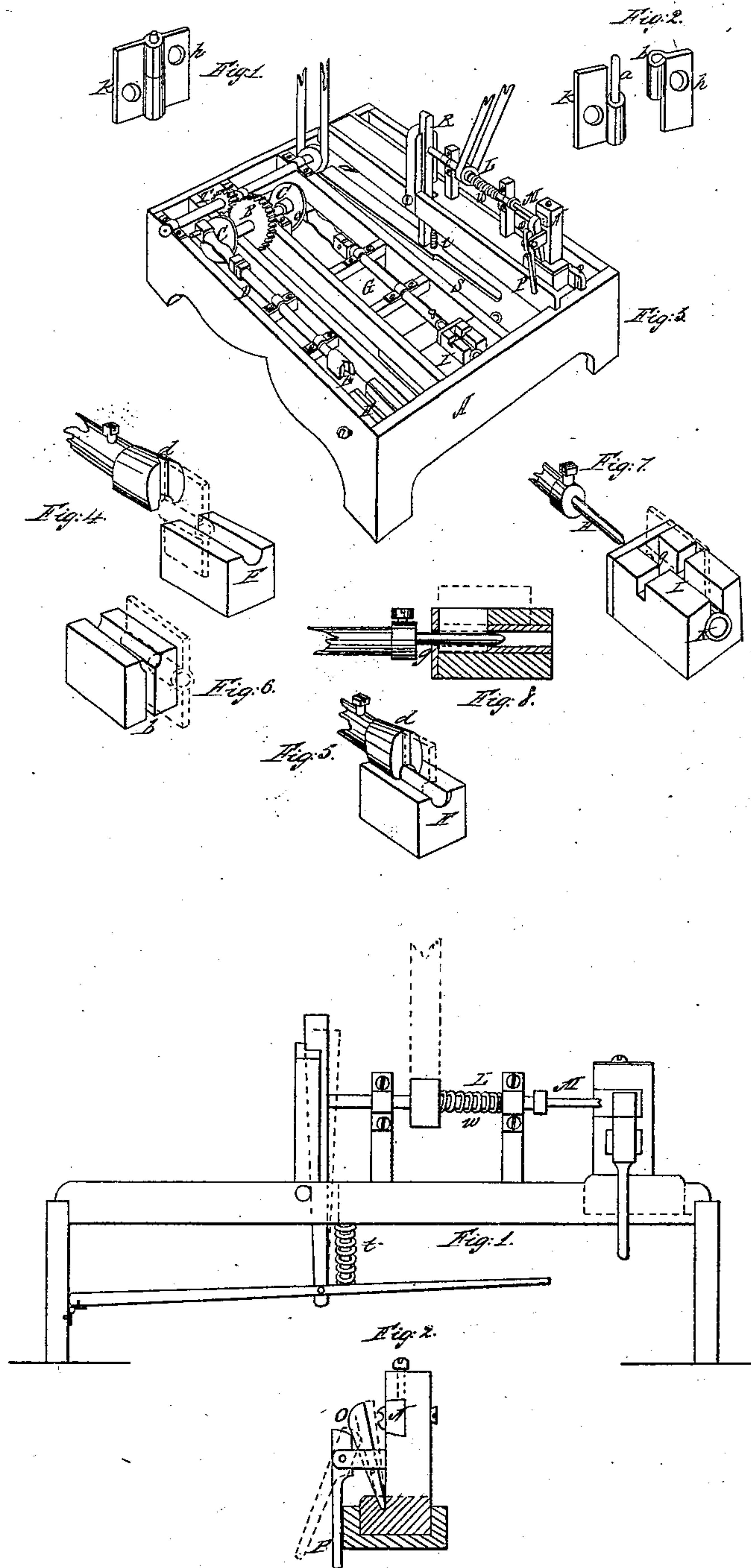


Luther, Lyon & Edwards,

Making Hinges,

No. 85,112.

Patented Dec. 22, 1868.



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Letters Patent No. 85,112, dated December 22, 1868.

IMPROVEMENT IN FINISHING LOOSE-HINGE BUTS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, ELLIS LUTHER, PLATT LYON, and WALTER EDWARDS, all of West Troy, in the county of Albany, and State of New York, have invented a new and useful Machine for Finishing Loose Buts; and that the following is a full, true, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1, sheet 1, represents a loose but prior to the operations hereinafter referred to.

Figure 2 shows the same as it appears when its parts are separated, as hereinafter mentioned.

Figure 3 is a perspective view of our machine.

Figure 4 shows the arrangement for forcing the halves of the but apart.

Figure 5, the same arrangement in a different position.

Figure 6 shows the manner in which the but is placed in the block.

Figure 7 shows the device for enlarging the cylindrical portion of the but which receives the wire.

Figure 8, the same arrangement in another position.

Figure 1, sheet 2, represents the treadle used for moving the revolving shaft and burr.

Figure 2 shows the clamp for holding the wire, as hereinafter described.

Before the but is subjected to the finishing-process which it is the design of our invention to facilitate; the two halves adhere to each other with great force. They have heretofore been driven apart by hand.

The next step is to enlarge the cylinder which receives the wire. This has been done by firmly fixing that half of the but in a vise, and driving a punch or drift through the cylinder by hand.

The half to which the wire is attached is then held firmly by hand against some solid object, and the wire is pointed by means of a revolving shaft and burr, similar to the one hereinafter described.

Our invention consists of an arrangement for quickly and easily separating the different parts of the but by machinery, as hereinafter described and set forth.

It also consists in a device for enlarging the cylinder more effectually and expeditiously than it can be done by hand.

It also consists in the employment of a clamp for holding the wire while it is being pointed, and a treadle for moving the revolving shaft and burr, as hereinafter described and specified.

Having stated the nature of our said invention, we will now proceed to describe the construction and operation thereof, which are as follows:

A represents a frame or work-table, to which our machinery may be attached.

B is a cog-wheel, which is actuated by the shaft and pinion T.

Upon the same shaft as the wheel B, and revolving with it, are the wheels C C.

To points near the circumference of the last-mentioned wheels respectively are attached the horizontal shafts D and G, in such a manner that the revolution of the wheels C C will give to the said shafts a to-and-fro motion.

The head of the shaft G is constructed with a groove, *d*, for the purpose of receiving the edge of the but, as shown in fig. 4.

Just opposite the end of the shaft D is placed the block F, constructed with the recess *f*.

At the end of the shaft G is attached the drift H, opposite which is placed the block I, constructed with the recess *g* and the tube K, the said recess being of the proper size to receive the cylinder *b*, fig. 2, sheet 1, and the tube being a trifle larger than the drift H.

L is a revolving shaft and burr, such as is commonly used for pointing the wire *a* of a loose but. This shaft is moved up to the wire by the wedge R, and is thrown back by the spring *w*.

S is a treadle, which lowers the wedge R, and *t* is a spring, which returns it to its former position.

N is a groove, in which the wire *a* is placed while it is being pointed, and

O is a clamp, which, when actuated by the lever P, holds the wire firmly in the said groove.

The operation of our invention is as follows:

The operator takes the but shown at fig. 1, sheet 1, and drops the leaf *k* into the recess *f* of the block F, while the leaf *h* will rest in the groove *d* of the shaft-head E. As the wheel B revolves, the shaft D will be thrown forward, and will drive the leaf *h*, with the cylinder *b* attached, off from the wire *a*, leaving the leaf *h* on the top of the block F, while the leaf *k* drops into a receptacle below.

The second operator takes the leaf *h*, and places it in the block I, so that the cylinder *b* shall fit into the recess *g*. Then, by the further revolution of the wheel B, the shaft G is thrust forward, and the drift H enters the cylinder *b*, and passes through it into the tube K, thus enlarging the said cylinder to the requisite extent.

It is desirable to make the tube K separate from the remainder of the block, because the principal part of the wear comes upon it, and it may be renewed when worn out, without procuring an entire new block. It may also be made of a harder material than the block. Thus the block may be of wrought-iron, and the tube of steel. Of course it must fit tightly, so that it cannot be moved without the application of considerable force.

The third operator takes the leaf *k*, and places the wire *a* in the groove N. Then, by means of the lever P, he moves the clamp O so as to hold the wire firmly in its place in the groove. Then placing his foot on the treadle S, he lowers the wedge R, which moves up

the revolving shaft L, so that the burr M meets the end of the wire *a*, and points it in the usual manner. Upon removing his foot from the treadle, the wedge R is raised by means of the spring *t*, and the shaft L resumes its former position.

By means of our invention, we are enabled to dispense with at least three-quarters of the manual labor heretofore necessary for these several manipulations, and at the same time to do the work much more speedily and efficiently.

Having thus described the construction and operation of our said invention,

What we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the block F, constructed with the recess *f*, with the reciprocating shaft D and shaft-head E, substantially in the manner and for the purposes herein described and specified.

2. The combination of the block I, constructed with

the recess *g*, with the reciprocating shaft G and drift H, substantially as and for the purposes herein described and specified.

3. The tube K, in combination with the block I, reciprocating shaft G, and drift H, substantially as and for the purposes herein described and specified.

4. The revolving shaft L, burr M, wedge R, and treadle S, in combination with the groove N, clamp O, and lever P, all arranged and combined substantially in the manner and for the purposes herein described and specified.

In witness whereof, we have hereunto set our hands, this 26th day of August, 1868.

ELLIS LUTHER.

PLATT LYON.

WALTER EDWARDS.

Witnesses:

E. COWEN,

FRANCIS A. WOODS.