C. H. Raymond.

Tinner's Mach.

No. 88,411. Patented Mar. 30. 1869.

Fig. 1.

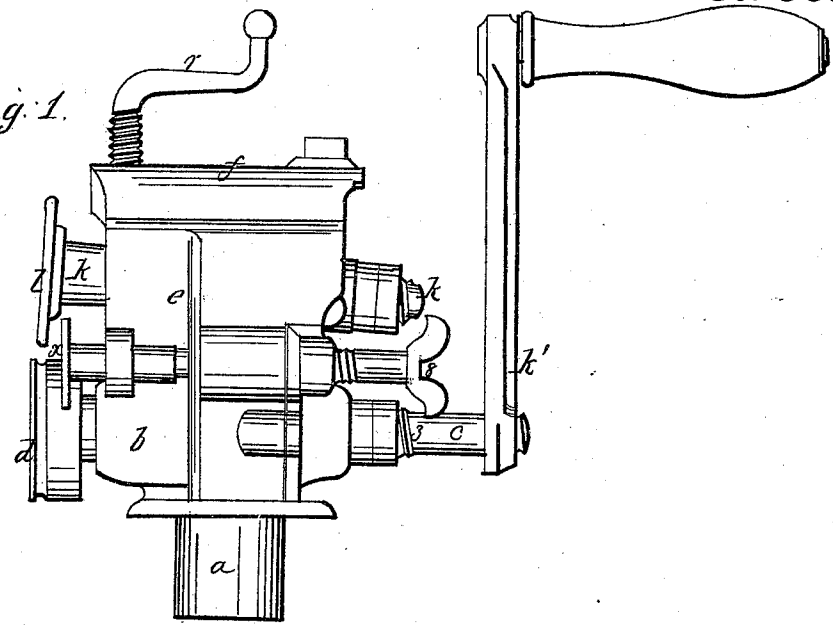


Fig. 2.

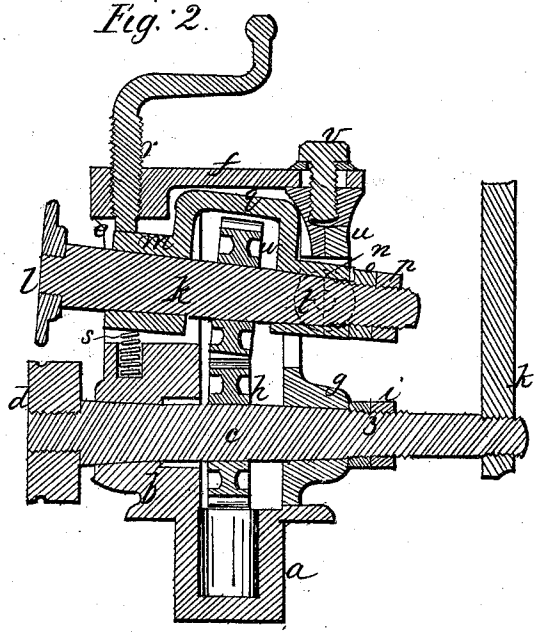
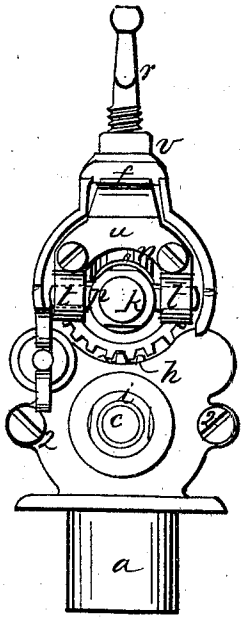


Fig. 3.



Witnesses;
Chas. H. Smith
Geo. Gerald Rice

Inventor;
Charles H. Raymond
per L. W. Serrell
Atty.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

United States Patent Office.

CHARLES H. RAYMOND, OF SOUTHINGTON, CONNECTICUT.

Letters Patent No. 88,411, *dated March* 30, 1869.

IMPROVEMENT IN TINMAN'S MACHINE.

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

To all whom it may concern:

Be it known that I, CHARLES H. RAYMOND, of Southington, in the county of Hartford, and State of Connecticut, have invented and made a certain new and useful Improvement in Tinman's Machines; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a side view of said machine;

Figure 2 is a section, longitudinally, of the shafts; and

Figure 3 is a rear view.

Similar marks of reference denote the same parts.

Tinmen's machines, for bending the edges of sheet-metal, or introducing the wire, have been made with a pair of rollers upon shafts, the upper one of which can be moved endwise, to adjust the upper roller, and also fitted to swing as the upper roller is raised or pressed down to place.

A machine of this character is seen in Letters Patent granted to me, August 30, 1859.

My present invention is for simplifying the construction, tightening the shafts in their boxes, and preventing looseness in case of wear, and facilitating the adjustment of the respective parts.

In the drawing—

a is the stock, or support of the machine, to be received into a hole in the work-bench, or other support.

The case, or frame of the machine is cast or formed with this stock *a*, and of this, *b* is the front bearing for the shaft *c* of the lower roller *d*, and *e* are the sides of the frame, or case, extended up, and united by the top portion *f*.

g is the back bearing for the shaft *c*, the same being attached to *e* by the screws 2 2.

The shaft *c*, near the roller *d*, tapers at the part where it passes through the bearing, *b*; then it is parallel, or nearly so, and on this part the gear *h* is keyed; and then said shaft *c* tapers in passing through the bearing, *g*, and the back part of the shaft is formed with a screw-thread at 3, and receives on its end the crank, or handle *k'*; and *i i* are set-nuts on the screw-part 3 of the shaft *c*.

It will now be understood that any wear of the shaft *c*, or bearings *b g*, can be compensated by the end movement of the shaft *c*, bringing the tapering portions properly to place, and the set or jam-nuts *i i*, taking against the face of *g*, retain the shaft *c* in position, but allow it to turn freely, but the nuts themselves cannot work loose, being jammed against each other.

The shaft *k*, of the upper roller *l*, is made in a similar manner, so as to taper in the bearings *m n*, and set up and retained by the jam-nuts *o p*. The bearings *m n*, however, are cast together, being connected by the yoke-piece *q*.

An opening is left between the side pieces *e* of the case, or frame, of a size to admit the bearing, *m*, and allow it only a movement up and down by the action of the screw *r* and spring *s*, as the upper roller *l* is raised or forced down.

At the sides of the bearing, *n*, are trunnions, *t*, entering boxes in the adjustable fork *u*, that is held by the screw *v*, through the top, *f*.

The wheel *w*, on the shaft *k*, gears into the wheel *h*, and receives its motion therefrom, and the gauge *x* is provided with its adjusting-screw 8, as usual.

It will now be understood that the boxes, or bearings *m n*, with their connecting-yoke *q*, are fitted to the shaft *k*, and the trunnions *t* are connected to the fork *u*, and the whole are introduced endwise into the frame, or case *e f*, and the screw *v* inserted, and the parts adjusted so that the roller *l*, when screwed upon the shaft *k*, shall occupy the correct position relatively to the roller *d*.

The parts are strong, easily made and adjusted, the bearings of both the shafts can be tightened as they may wear, and the swinging movement of the upper shaft, as the roller *l* is raised or lowered, does not disturb the shaft *k* in its bearings *m n*.

In some characters of machines of this class, the crank, or handle *k'* will be applied to the shaft *k*, and the latter will drive the shaft *c* by the gears *w* and *h*.

The improvement herein set forth may be applied to any character of sheet-metal-bending machine to which it may be available, whether the machine is for bending the edge of the sheet-metal, or any other portion thereof.

What I claim, and desire to secure by Letters Patent, is—

1. The tapering shaft *c* or *k*, fitted into the correspondingly-shaped bearings, and carrying the roller *d* or *l* at one end, in combination with the set-nuts, applied to the shaft at the back bearing, substantially as and for the purposes specified.

2. The bearings *m n*, connected by the yoke *q*, in combination with the tapering shaft *k* and set-nuts *o p*, substantially as set forth.

3. The bearings *m n*, connected together, and carrying the upper shaft *k* of the tinman's machine, in combination with mechanism substantially as set forth, for adjusting said shaft endwise, and allowing of the swinging movement, substantially as specified.

4. The case, or frame, formed of the side pieces *e e* and top piece *f*, in combination with the shaft *k*, bearings *m n*, and wheel *w*, so that these parts can be introduced from the rear, and sustained in place, substantially as set forth.

In witness whereof, I have hereunto set my signature, this 10th day of February, 1869.

CHARLES H. RAYMOND.

Witnesses:

H. R. BRADLEY,

FRED. H. WOODRUFF.