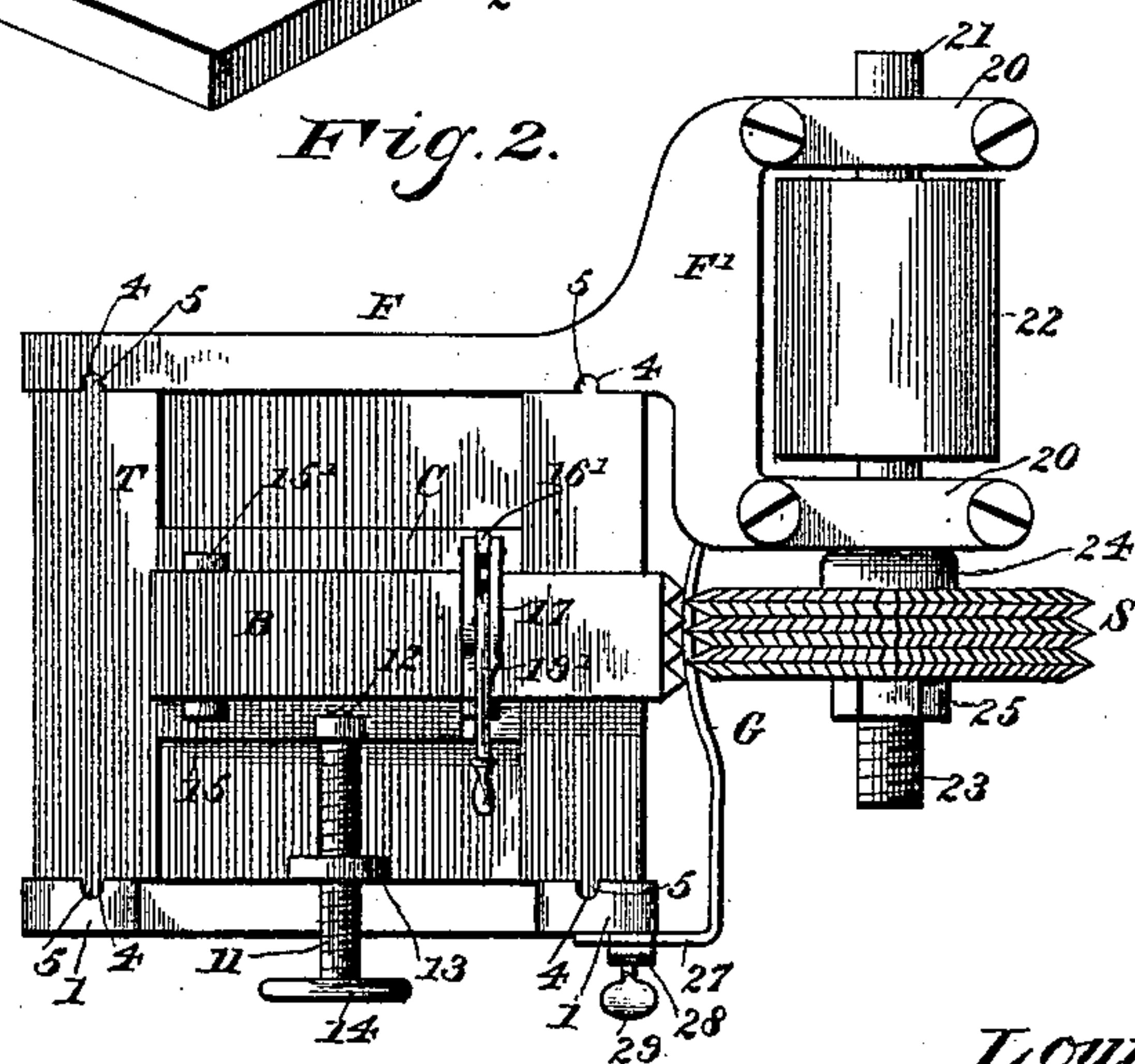
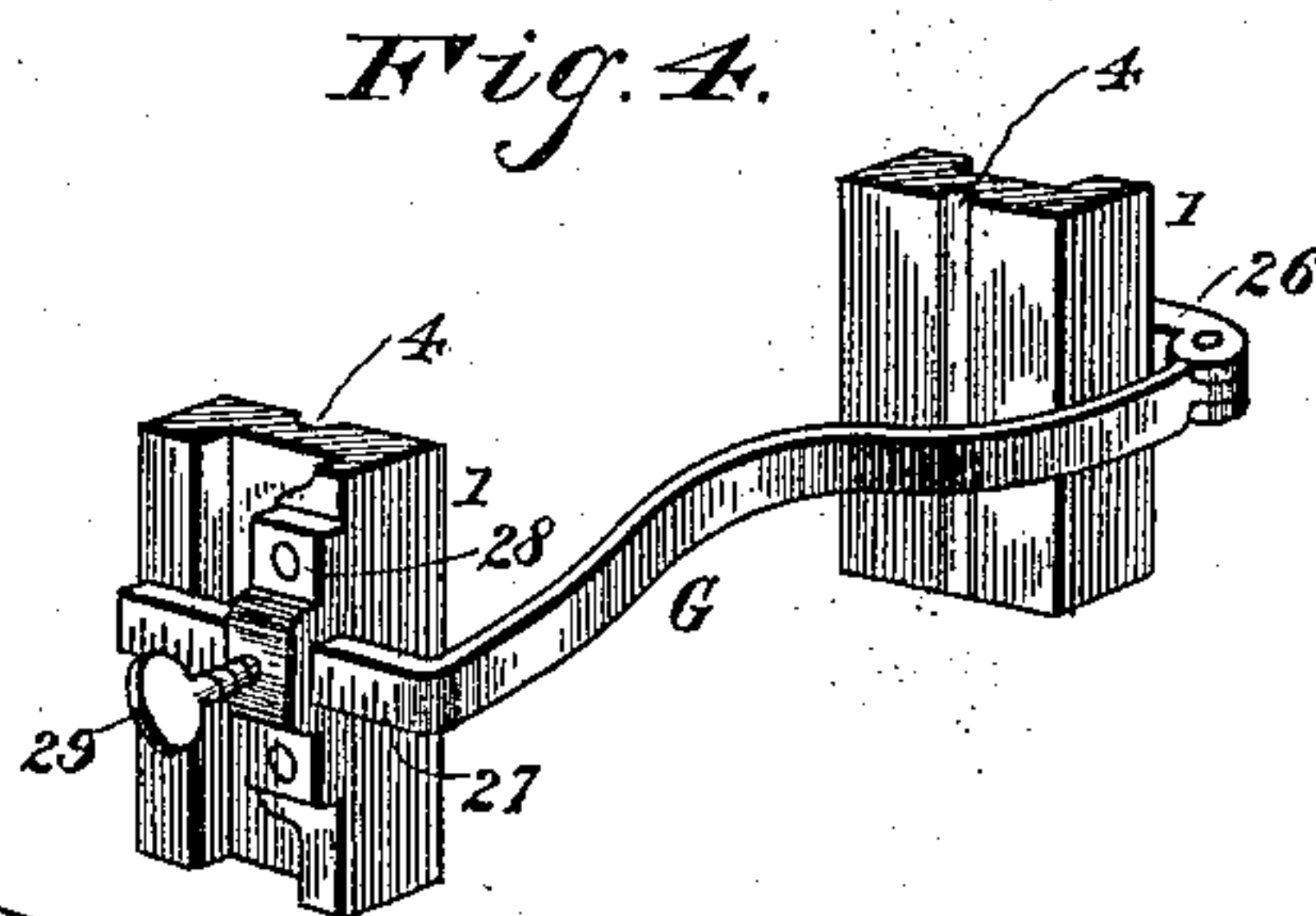
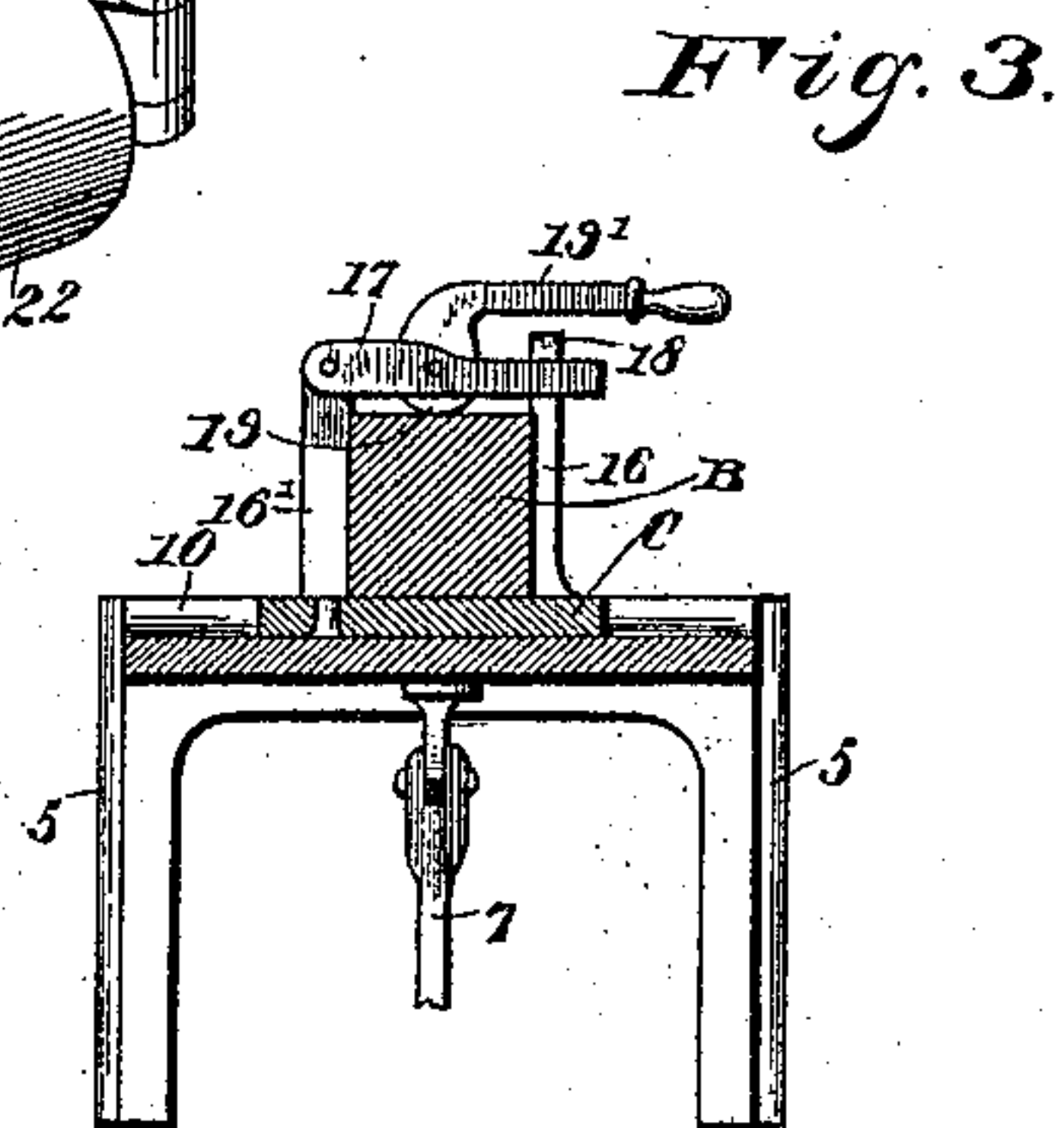
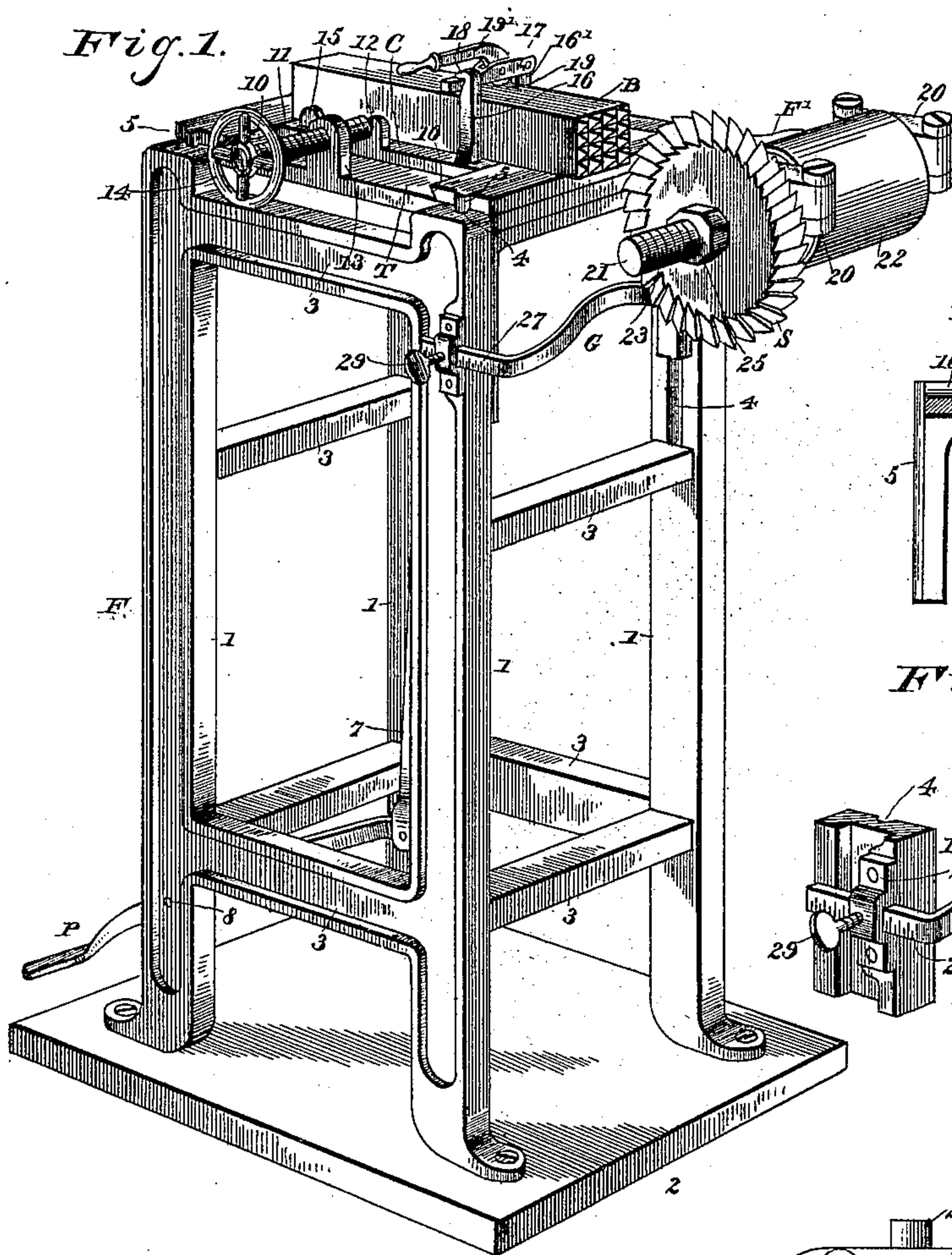


(No Model.)

L. MAYER.  
BUSH HAMMER SHARPENER.

No. 464,577.

Patented Dec. 8, 1891.



Witnesses;

*M. Withrow*

*A. L. Colamer*

By *his* Attorneys,

*C. A. Snow & Co.*

*Louis Mayer*, Inventor,



# UNITED STATES PATENT OFFICE.

LOUIS MAYER, OF MANKATO, MINNESOTA.

## BUSH-HAMMER SHARPENER.

SPECIFICATION forming part of Letters Patent No. 464,577, dated December 8, 1891.

Application filed June 19, 1891. Serial No. 396,811. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS MAYER, a citizen of the United States, residing at Mankato, in the county of Blue Earth and State of Minnesota, have invented a new and useful Bush-Hammer Sharpener, of which the following is a specification.

This invention relates to the treatment of metal milling-cutters, more popularly known as "bush-hammers," and the object of the same is to produce a new device for sharpening such hammers.

To this end the invention consists in a sharpener constructed substantially as hereinafter more fully described and claimed, and as illustrated on the sheet of drawings, wherein—

Figure 1 is a perspective view of this device with the carriage raised. Fig. 2 is a plan view of the same, showing three saws in place. Fig. 3 is an enlarged cross-section through the carriage, and Fig. 4 is a perspective detail of the guide.

Referring to the said drawings, the letter F designates the frame, wherein is a table T, operated by a pedal P, said table carrying the carriage C for supporting the bush-hammer B; S is the saw or saws, and G is the guide, all these parts being of the construction more particularly described below and preferably made entirely of metal, although considerable change in the details of construction might be made without departing from the spirit of my invention.

The frame F consists of upright legs 1, resting upon the floor or upon a suitable base 2 and properly braced by rungs or braces 3, and the upper ends of the legs are provided with vertical grooves 4, serving as guides for ribs or projections 5 on the table T. Depending from the latter is an eye 6, connected with a pitman-rod 7, whose lower end is in turn connected to the inner end of the pedal P, which is pivoted, as at 8, in the frame, and hence the depression of the outer end of the pedal by the foot of the operator will raise the table, whereas gravity will cause it to fall, the ribs 5 and grooves 4 guiding it in its vertical movement.

The carriage C is mounted on the table, and the latter has undercut edges 10, with which the beveled edges of the carriage engage.

11 is a screw swiveled at 12 to an eye in

the carriage, turning at 13 through a nut mounted on the table and having a hand-wheel 14. By manipulating this wheel the carriage may be adjusted transversely upon the table, as will be clear.

In Figs. 1 and 2 a bush-hammer is shown in position on the carriage, and at such times it stands between studs 15 15' and 16 16'. To the upper end of the last-mentioned stud is pivoted an arm 17, which is adapted to take under the hooked upper end 18 of the stud 16, the stud 16' being swiveled in the carriage in order that it may turn to permit the free end of the arm 17 to move under said hook. The said arm is slotted, as seen in Figs. 2 and 3, and within said slotted body is pivoted the eccentric head 19 of a clamping-lever 19'.

Upon an extension F' of the frame are bearings 20, in which is mounted the shaft 21, carrying the saw, and keyed on this shaft between the bearings is a pulley 22, to which a belt may lead for imparting rotary motion to the saw. One projecting end of the shaft 21 is threaded, as at 23, and after the saw or saws S are passed over the threaded end against an enlargement or shoulder 24 a nut 25 is screwed tightly against the outer saw to hold it in place. Thus it will be seen that a saw may be replaced by a sharper one, or any desired number of saws may be mounted on the shaft. Below the extension F' the frame carries an ear 26, in which is mounted on a vertical pivot one end of the guide G. This guide is a bar or rod of metal passing across the frame below and in rear of the saw and at a proper point to strike the face of the bush-hammer when the table is lowered. The front end of the guide is bent at right angles to its body, as at 27, and marked with a scale, and this end passes under a strap 28, through which is a set-screw 29 for holding the guide in properly-adjusted position. Power being applied to the pulley 22 and the requisite number of saws mounted upon the shaft 21, the bush-hammer B is placed on the carriage C between the studs 15 15' and 16 16'. The arm 17 is swung under the hook 18 and the clamping-lever 19' is turned, so as to bring its eccentric head 19 forcibly down on the bush-hammer and hold it in place. The guide G is set so that the face of the hammer shall project the desired distance, and the hand-



wheel is then manipulated to move the carriage in proper position to bring the bush-hammer in vertical alignment with the saw or saws. The treadle is then depressed to  
5 raise the table and carriage, and this movement brings the face of the bush-hammer upwardly against the cutting-edge of the saw, as will be clear. After grinding or sharpening the table is lowered and the bush-hammer  
10 may be replaced by a new one to be treated. I preferably heat the bush-hammers to a cherry-red heat before treating them, as I find that at this temperature the saws will  
15 put the desired face on the hammer with the least injury to themselves and in the shortest possible time.

What is claimed as new is—

1. In a machine of the class described, the combination, with the frame having a horizontal extension, a shaft journaled in said  
20 extension, and a saw on said shaft, of a vertically-movable table in the frame traveling past said saw, a transversely-movable carriage on the table, and clamping devices on the  
25 carriage, as and for the purpose set forth.

2. In a machine of the class described, the combination, with the rotating saw, the frame, a vertically-movable table in the latter, and a laterally-movable carriage on said table, of  
30 studs on said carriage arranged in pairs, one of the front pair having a hooked upper end and the other being swiveled in the carriage,

an arm pivoted to the upper end of the swiveled stud adapted to engage the hooked stud, and a lever having an eccentric head pivoted  
35 to said arm, as and for the purpose set forth.

3. In a machine of the class described, the combination, with the frame, a vertically-movable table therein, and a laterally-movable carriage on said table, of a rotating saw, an  
40 ear on the frame below and at one side of the saw, a strap on the frame at the other side of the saw, a set-screw in said strap, and a guide pivoted at one end to said ear and having its  
45 other end bent at an angle marked with a scale and passed through said strap, as and for the purpose hereinbefore set forth.

4. In a machine of the class described, the combination, with the frame, a vertically-movable table therein, a pedal and connections for raising and lowering the same, a  
50 laterally-movable carriage on said table, a screw for moving the carriage laterally, and clamping devices carried by the carriage, of a rotating saw located transversely of the  
55 frame at one end of the carriage, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

LOUIS MAYER.

Witnesses:

NICHOLAS MOES,  
JOSEF MASBERG.