(No Model.)

L. W. MORSE.

PAPER CUTTING MACHINE.

No. 495,984. Patented Apr. 25, 1893.

Fig. 1

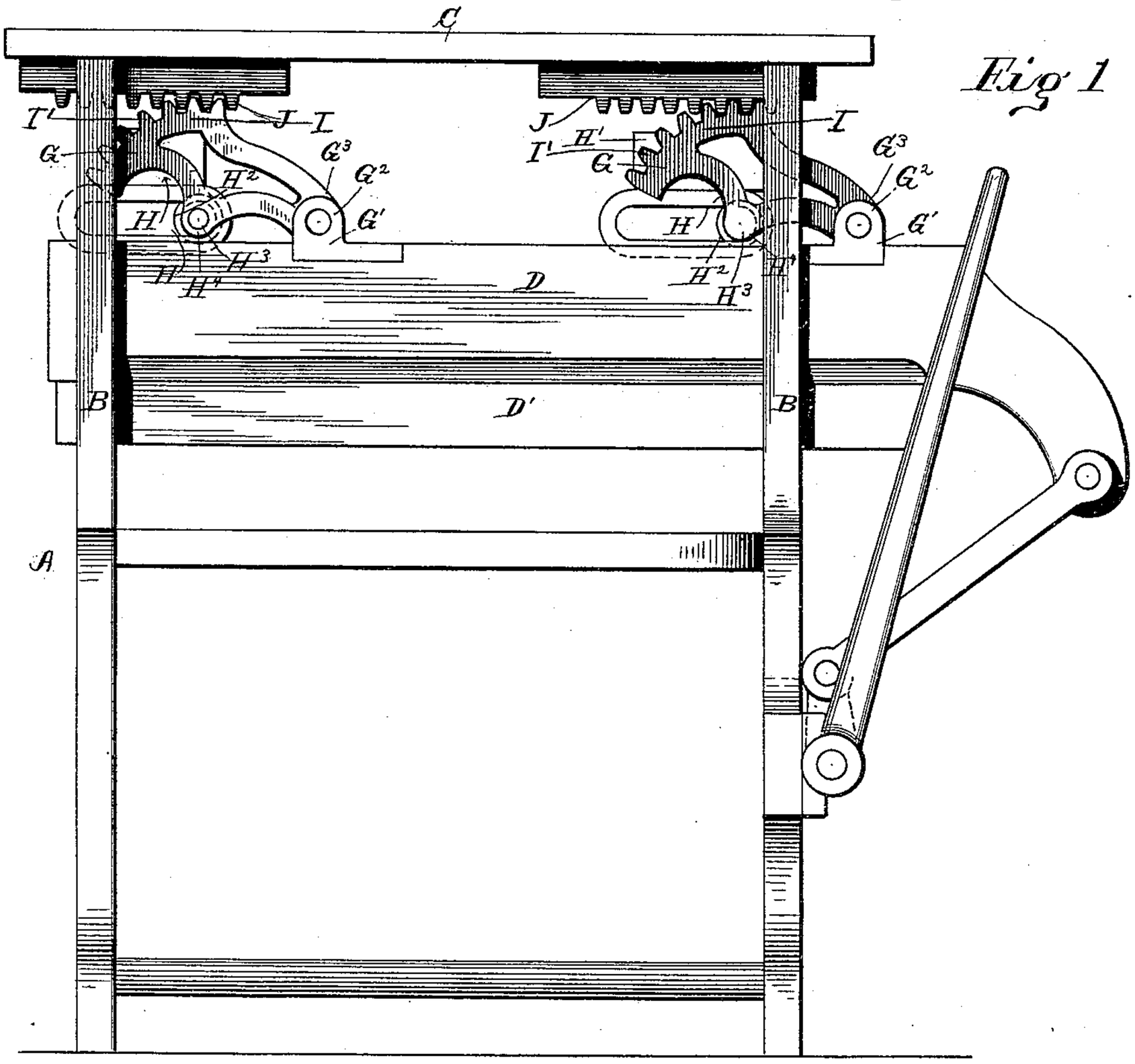
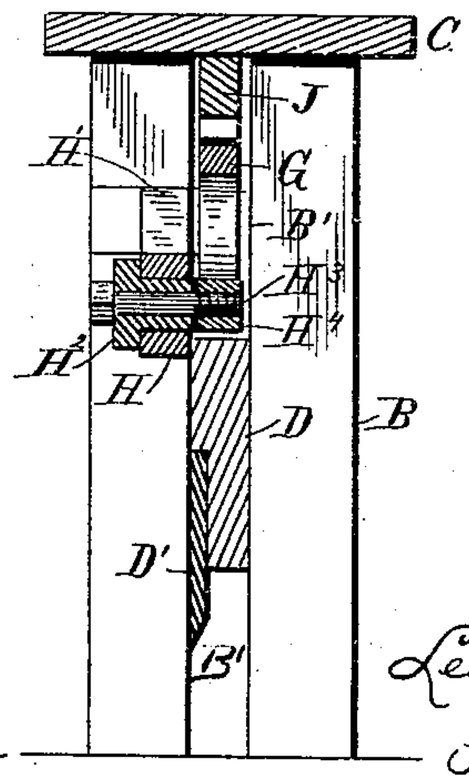


Fig. 2.



Witnesses
C. C. Burdine
D. B. Avery.

Inventor
Leonard W. Morse,
per
Dyer Dorr & Dyer
Attorneys.

UNITED STATES PATENT OFFICE.

LEONARD W. MORSE, OF MYSTIC, CONNECTICUT.

PAPER-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 495,984, dated April 25, 1893.

Application filed October 24, 1892. Serial No. 449,781. (No model.)

To all whom it may concern:

Be it known that I, LEONARD W. MORSE, a citizen of the United States, residing at Mystic, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Paper-Cutting Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in mechanical movements and more particularly to those which are used in conjunction with paper cutting machines; and it consists in certain improvements by which the knife of such machine is supported and allowed to swing or reciprocate during the cutting operation.

The object of my invention is to provide means for suspending the blade whereby a more decided draw or longer lengthwise movement is given it. This movement is, as well known, essential to the effective operation of a machine of this class and has been the aim of all arrangements hitherto produced.

By reference to the accompanying drawings a more detailed understanding of my invention may be obtained; in which drawings—

Figure 1 represents a side elevation of a paper cutting machine having my improvements applied, and Fig. 2, a view showing the same in detail.

The reference letter A indicates the frame work of a cutting machine of the usual construction having the vertically extending side pieces B, and cross piece C, fastened securely to the top of said side pieces. Formed to the side pieces B, and extending their entire length are the vertically elongated openings B′ in which the center bar D, is adapted to reciprocate. To this bar is securely and rigidly fastened the knife edge D′.

The reference letter G, indicates a segmental connecting link, pivotally attached to the cutter bar D, by means of the block G′, countersunk in the upper edge of the said bar and having the opposing lugs or projections G^2 formed thereon between which the end G^3 of the link G is pivoted.

Securely fastened to each of the side pieces B, is a way or guide H, by means of the projecting block H′. Traveling in this guide is a flanged anti-friction roller H^2 mounted loosely on the pin H^3 which is in turn fixed to the link G, at H^4. The remaining end I, of the link G, is formed like a segment, or arc of a circle, of which the roller H^2 is the center. Cog teeth or gears are formed integral with this outer curved end and are adapted to mesh with the teeth on the rack J which is rigidly fastened to the under side of the cross piece C, and formed with a number of teeth equal to those on the link G. Upon pulling down on the bar D, those ends of the link G which are connected to the bar will, of course, follow, but owing to the fact that the roller H^2 is incapable of any downward movement, it follows that the link must swing on its pivot; the roller H^2, causes the knife and cutter bar to move lengthwise simultaneously with their downward movement. This lengthwise movement is furthered or assisted by means of the horizontally extending guide H, along which the roller H^2 and its attachment move during the downward stroke of the knife. Upon the reverse action the knife retires to its normal position on a similar incline or slant. During the above described operation the teeth I′ of the link G mesh with those on the rack J, thereby allowing the link free movement to swing on its pivot; the roller H^2, and also serving to steady the whole and keep the roller from jumping forward out of unison with the operations of the remaining parts. By means of this arrangement it will appear readily that a much more decided and lengthened draw is given to the blade, which will, as before stated, aid in its effective operation.

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

1. The combination with a suitable frame, of a reciprocating knife bar, a connecting link having one of its ends pivotally attached to the said bar, and provided midway its ends,

with a horizontally movable fulcrum or pivot, and a segment and rack operating at its remaining ends, substantially as described.

2. The combination with a suitable frame, of a reciprocating knife bar, a connecting link having one of its ends pivoted to said bar, and provided midway its ends with a roller and a horizontal guide or way, the two forming a movable fulcrum for the link, and a segment and rack operating at its remaining end, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

LEONARD W. MORSE.

Witnesses:
FRANK E. RICH,
VINCENT C. STILLMAN.