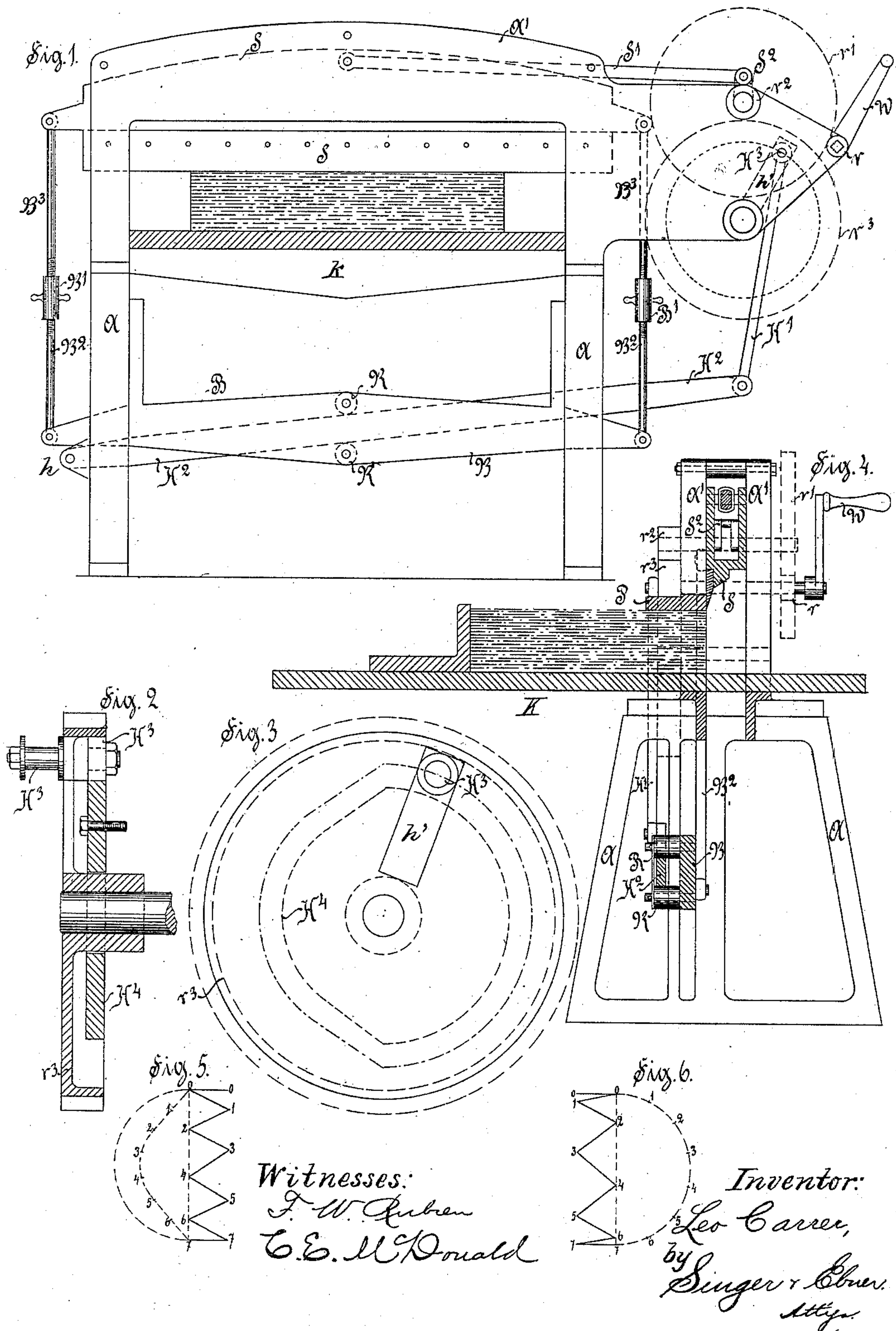


(No Model.)

L. CARRER.
PAPER CUTTING MACHINE.

No. 445,923.

Patented Feb. 3, 1891.



UNITED STATES PATENT OFFICE.

LEO CARRER, OF DUSSELDORF, GERMANY.

PAPER-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 445,923, dated February 3, 1891.

Application filed July 25, 1889. Serial No. 318,674. (No model.)

To all whom it may concern:

Be it known that I, LEO CARRER, a subject of the Emperor of Germany, residing at Dusseldorf, in Rhenish Prussia, in the German Empire, have invented a new and useful Improvement in Paper-Cutting Machines, of which the following is a specification.

The object of the invention is to produce a machine which will cut paper in an easier and smoother way than machines now in use by giving the knife a horizontal reciprocating motion as it cuts downward through the paper.

The nature of the invention consists in the details of combination and construction, substantially as illustrated in the accompanying drawings, hereinafter described, and subsequently pointed out in the claim.

Figure 1 is a front view of a paper-cutter constructed according to my invention. Fig. 2 is a sectional view illustrating the wheel r^3 . Fig. 3 is a plan view of the same. Fig. 4 is a transverse sectional view illustrating the working parts of the machine. Figs. 5 and 6 are diagrams to illustrate the motion of the knife.

The frame of the machine is designated at A A. Upon a shaft journaled in this frame is mounted the pinion r . Upon this same shaft is mounted the winch w . Upon another shaft journaled in this frame is mounted the spur-wheel r' , which is engaged by the said pinion r . Upon this same shaft is formed the crank S^2 and mounted the pinion r^2 . Upon a third shaft, also journaled in said frame, is mounted the spur-wheel r^3 , which is engaged by the pinion r^2 . The connecting-rod S' connects the said crank S^2 and the knife-beam S. This knife-beam is free to slide between the guides A' A'.

Upon the wheel r^3 is a crank-pin H^3 , to which is attached the connecting-rod H' . This rod connects the said pin and the lever H^2 . The lever H^2 is pivoted to the frame of the machine at h . A slide (designated by B) is also arranged to slide in said frame. It is connected with the lever H^2 by the rollers R R. This slide is also pivotally connected with the knife-beam S by the rods B^2 B^3 . These rods consist of two pieces B^2 and B^3 . One of these has upon its end a right-hand screw, the other has a left-hand screw. Upon

these two screws is the nut B' , by means of which the length of said rod may be adjusted. A table K and a clamp P are provided to hold the paper to be cut in the machine. A radial slot h' is cut in the wheel r^3 , and the length of the movement of the lever H^2 may be regulated by changing the pin H^3 to different distances from the center of said wheel in said slot. If, however, but one length of motion be desired for the lever H^2 , an eccentric groove (designated by H^4 of Fig. 3) may be used instead of the pin H^3 , and with a proper connection on the rod H' .

To use this machine, the operator first clamps the paper to be cut between the clamp P and the table K, as illustrated in dotted lines in the drawings. Then taking hold of the winch W he begins to turn it. As he turns, the wheels r r' r^2 r^3 begin to revolve and the crank S^2 to turn. As it turns on account of being connected to the knife-beam by the rod S' , it produces a horizontal reciprocating motion of the said knife-beam and the knife it carries. At the same time the wheel r^3 , turning more slowly by means of the crank-pin H^3 and lever H' , pushes down the lever H^2 . This draws down the slide B, which, being attached, as aforesaid, to the knife-beam S, draws it down too, gradually carrying the knife through the paper as it cuts. The knife is then forced to take a zigzag course through the paper, the course, if the pin h^3 be employed, being represented by the diagram, Fig. 6, the angle of the zigzags will be greatest at the middle of the stroke of the knife through the paper and least at each end; but if the eccentric groove or cam be employed, the angles of the zigzag course of the knife will be all equal, as represented in Fig. 5, as long as the eccentric part of the groove actuates the lever h^2 , while the course represented by Fig. 6 will be taken by the knife on its upward stroke—i. e., when the lever is actuated by the concentric half of the groove or cam.

It is evident that any well-known connection may be used to supply actuating-power instead of the winch W.

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

The combination, in a paper-cutter, with the supporting-frame of the machine, a train of wheels journaled in said frame, a crank

connected with and revolved by said wheels,
a knife, a beam carrying such knife and slid-
ing in said frame, a connecting-rod connect-
ing said knife-beam and said crank, of a
5 crank-pin in one of said wheels, a lever piv-
oted by one end to said frame, a rod whereby
the other end of said lever is connected to the
said crank-pin, a slide moving in said frame,
rollers upon said slide, connecting it with the
10 said lever, adjustable rods pivotally connect-
ing either end of said slide to said knife-beam,

a clamp and table for holding paper while be-
ing cut, and means, substantially as specified,
for actuating said machine, all substantially
as and for the purpose set forth.

In witness whereof I have hereunto set my
hand in presence of two witnesses.

LEO CARRER.

Witnesses:

ALBERT WEBER,
FRIEDRICH BRACHT.