

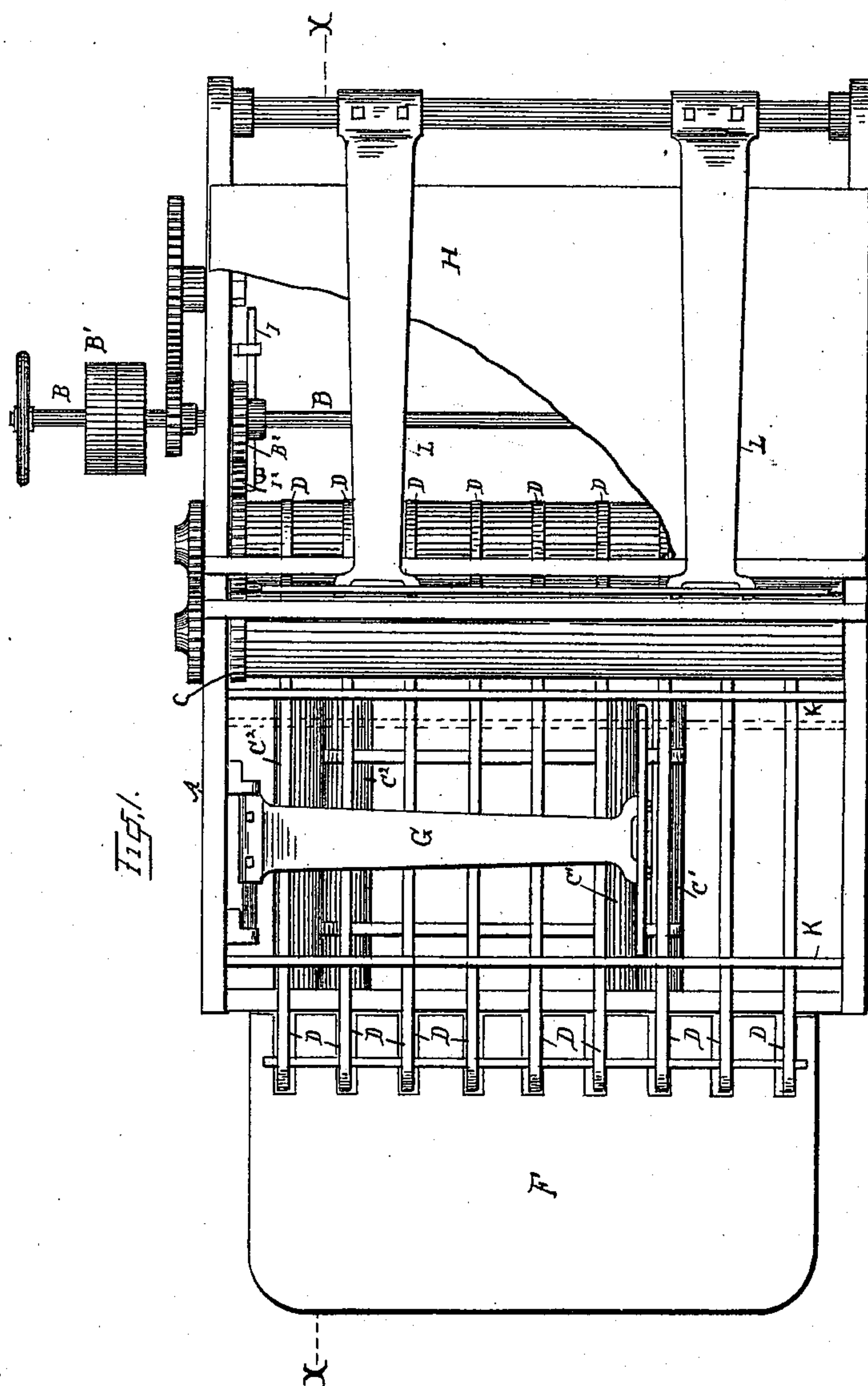
(No Model.)

2 Sheets—Sheet 1.

C. D. VAN ETEN.
PAPER FOLDING MACHINE.

No. 504,119.

Patented Aug. 29, 1893.



Witnesses
W. M. Markey Jr.
H. C. L. S.

Inventor
Chas. D. Van Eten
By Attorney, Hallock & Hallock

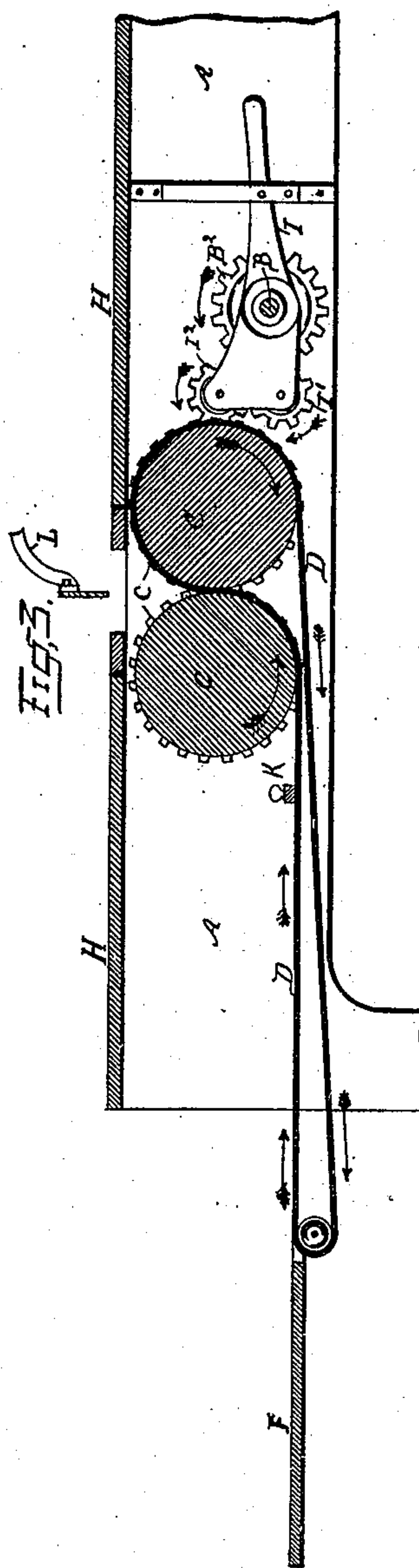
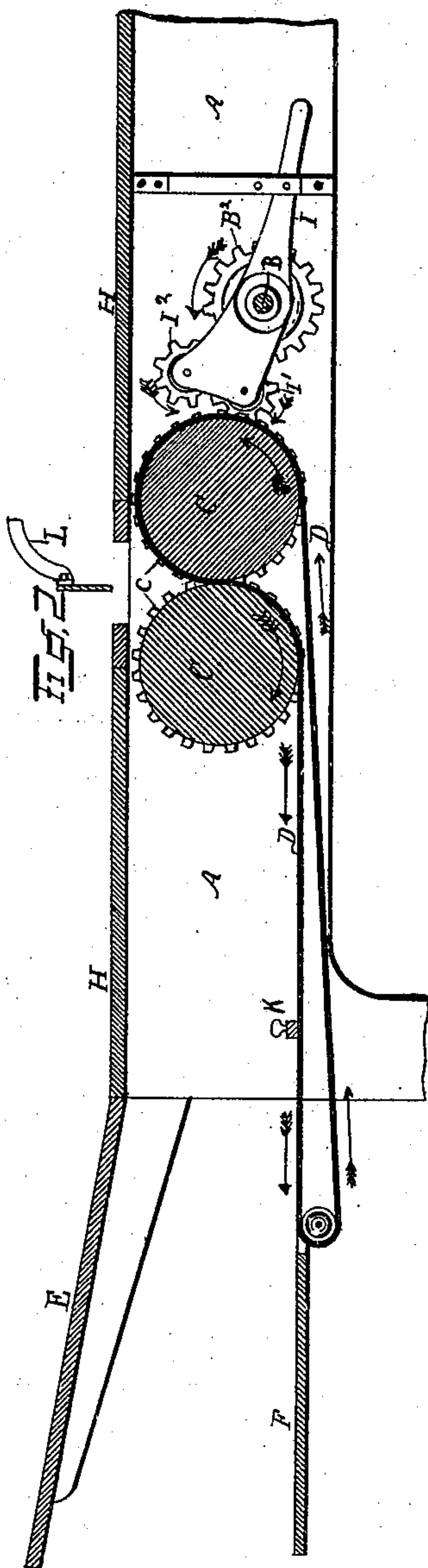
(No Model.)

2 Sheets—Sheet 2.

C. D. VAN ET TEN.
PAPER FOLDING MACHINE.

No. 504,119.

Patented Aug. 29, 1893.



Witnesses
Wm. Mark Jr.
H. C. Long

Inventor
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 By Attorneys *Hallock & Hallock*

UNITED STATES PATENT OFFICE.

CHARLES D. VAN ETEN, OF ERIE, PENNSYLVANIA, ASSIGNOR TO THE
BROWN FOLDING MACHINE COMPANY, OF SAME PLACE.

PAPER-FOLDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 504,119, dated August 29, 1893.

Application filed October 3, 1892. Serial No. 447,770. (No model.)

To all whom it may concern:

Be it known that I, CHARLES D. VAN ETEN, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Paper-Folding Machines; and I do hereby 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.

This invention relates to paper folding machines, and consists in certain improvements in the construction thereof, as will be hereinafter fully set forth and pointed out in the claims.

The invention is illustrated in the accompanying drawings as follows:

Figure 1 is a top or plan view of a folding machine, containing the improvements herein-after to be described (part of the covers being broken away and the first feed table being removed). Fig. 2 is a longitudinal vertical section on the line $x-x$ in Fig. 1, with only such parts shown as are necessary to illustrate the invention. Fig. 3 is a view on the same section line as Fig. 2, showing a changed position of the gearing.

Letters of reference indicate parts as follows:

A, marks the frame of the machine; B, the driving shaft; B', the driving pulleys; B², a driving gear on the shaft, B; C C, the first folding rollers; C' C', the second folding rollers; C² C², the third folding rollers; D, the tapes that carry the sheets from the first to the second folding rollers; D', the tapes that carry the sheets from the second to the third folding rollers; E, the feeding table; H, the covers or tops; L, the first starter; G, the second starter; K, the stop that stops the sheet after the first fold and holds it ready for the second fold. These parts are all common and they are arranged and operated as commonly.

There is a class of work that consists of long narrow sheets, such as railroad time tables, and other circulars that are only folded crosswise of the sheet, and not lengthwise, while other work requires to be first folded lengthwise and then only crosswise, and it is desirable to do both these kinds of sheets on

the same machine. The purpose of this invention is to provide means for accomplishing the above stated object, namely, to adapt one machine for conveniently doing both the above classes of work.

When the sheets to be folded are wide and are to be folded first lengthwise and then crosswise, they are fed from the table, E, over the rolls C C, and the first starter drives them between the said rolls, which fold them lengthwise, and the tapes, D, carry them over the second rolls C' C', where the stop, K, arrests them in position to properly pass to the second rolls.

To adapt the machine to operate upon narrow sheets which require to be folded only crosswise, I provide means for reversing the movement of the rolls, C C, and the tapes, D D, then change the stop, K, to the position shown in Fig. 3, take off the feed-board, E, and work from a second feed-board, F, shown in Fig. 3. When thus adjusted, the sheets do not pass between the rolls, C C. They are carried by the tapes, D, into position over the rolls, C' C', and are stopped in proper position by the stop K, in its changed position.

In Fig. 2, the arrows indicate the movement of parts when the machine is used to fold the sheets lengthwise first. In Fig. 3, the arrows indicate movement of parts, when folding single width sheets.

I do not desire to be limited to any particular means for reversing the direction of the first rolls, C C, as it will be evident to any competent mechanic that various well known appliances may be used. I have, however, shown in the drawings the form of reversing gear that I prefer to use. It is as follows: On the shaft, B, adjacent to the gear, B², is pivoted a rocking frame, I, on which are journaled two gears, I' and I², which mesh together and one of them only, I', meshes with the gear, B². When the frame, I, is in the position shown in Fig. 2, the gear, I', meshes also with the gear, c, on the adjacent roll C, and the gear, I², although moved by the gear, I', does no work. When thus adjusted, the rolls, C C, will roll toward each other from above and the tapes, D, will move as indicated by the arrows. When the frame, I, is changed to the position shown in Fig. 3, the

gear, I', is thrown out of mesh with the gear, c, and the gear, I², is brought into mesh with it, and the gear, I', serves as an intermediate between B² and I², and the rolls C C, will turn
5 together from below, and the tapes, D, will move as shown by arrows in Fig. 3. It should be observed that the shaft, B, does not change its direction of motion, and as the other parts
10 of the machine are driven from that shaft, they do not change their direction of movement, but operate precisely the same, when the rolls, C C, move in one direction or the other.

What I claim as new is—

- 15 1. In a paper folding machine, the combination with the driving shaft, B, and gear, B², thereon, the first rolls, C C, first tapes, D, the movable stop, K thereon; second rolls C' C', and second feed table, F, of a gearing between

the shaft, B, and the rolls, C, that is adapted 20 to drive the said rolls in either direction as the same may be adjusted.

2. In a paper folding machine, the combination with the first folding rolls, C C, the carrying tapes driven by said rolls, movable 25 stop on said tapes and second rolls C' C', of means for changing the direction of movement of said rolls and tapes without changing the direction of movement of the driving shaft, B, and a secondary feeding table in po- 30 sition to feed the sheets upon said tapes.

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

CHARLES D. VAN ETTEN.

Witnesses:

JNO. K. HALLOCK,
WM. P. HAYES.