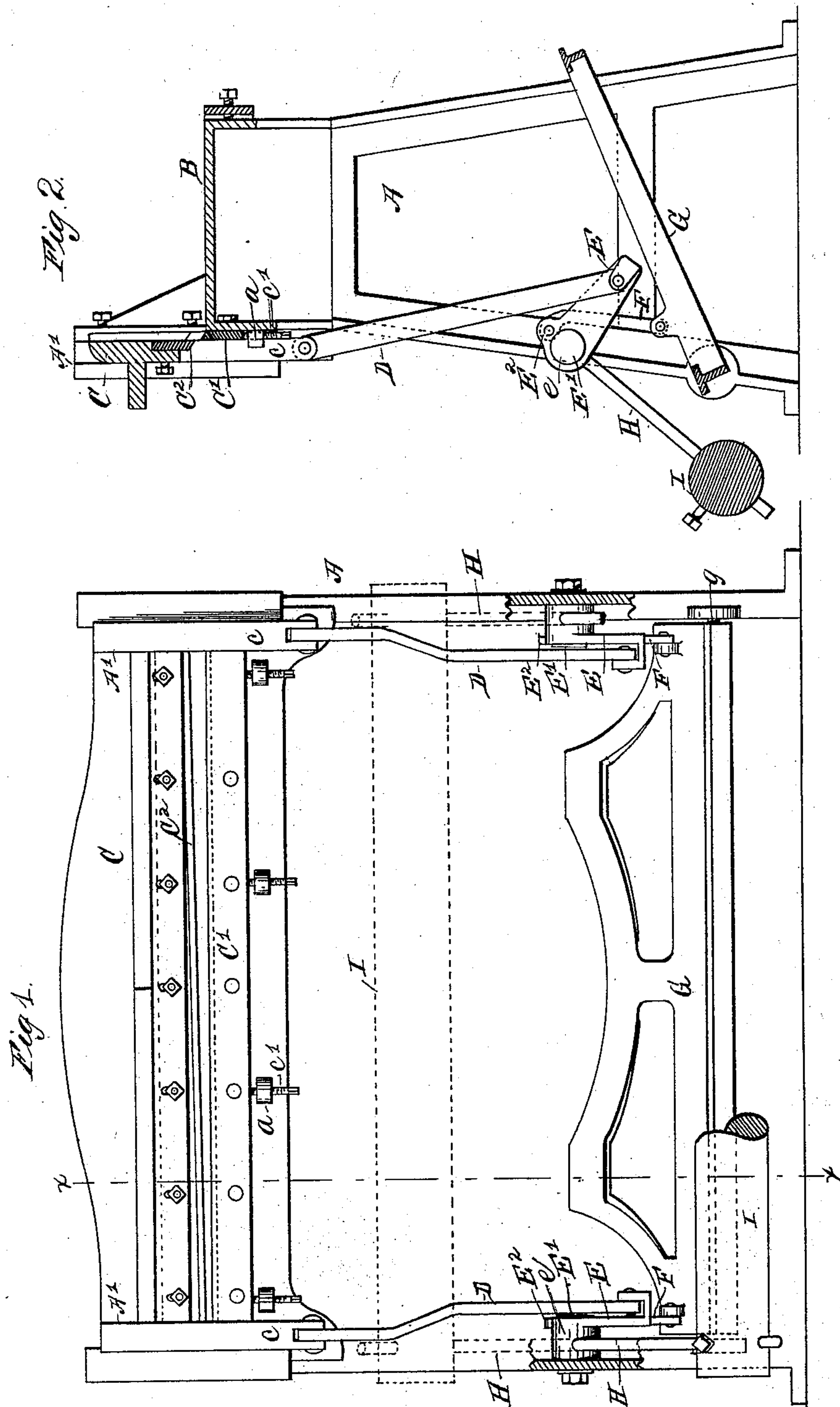


2 Sheets—Sheet 1.

No. 506,371.

Patented Oct. 10, 1893.



Witnesses
C. R. Ferguson
H. M. Shiff

Inventors
Charles H. Byrle
Ernest Faller
By their Attorneys
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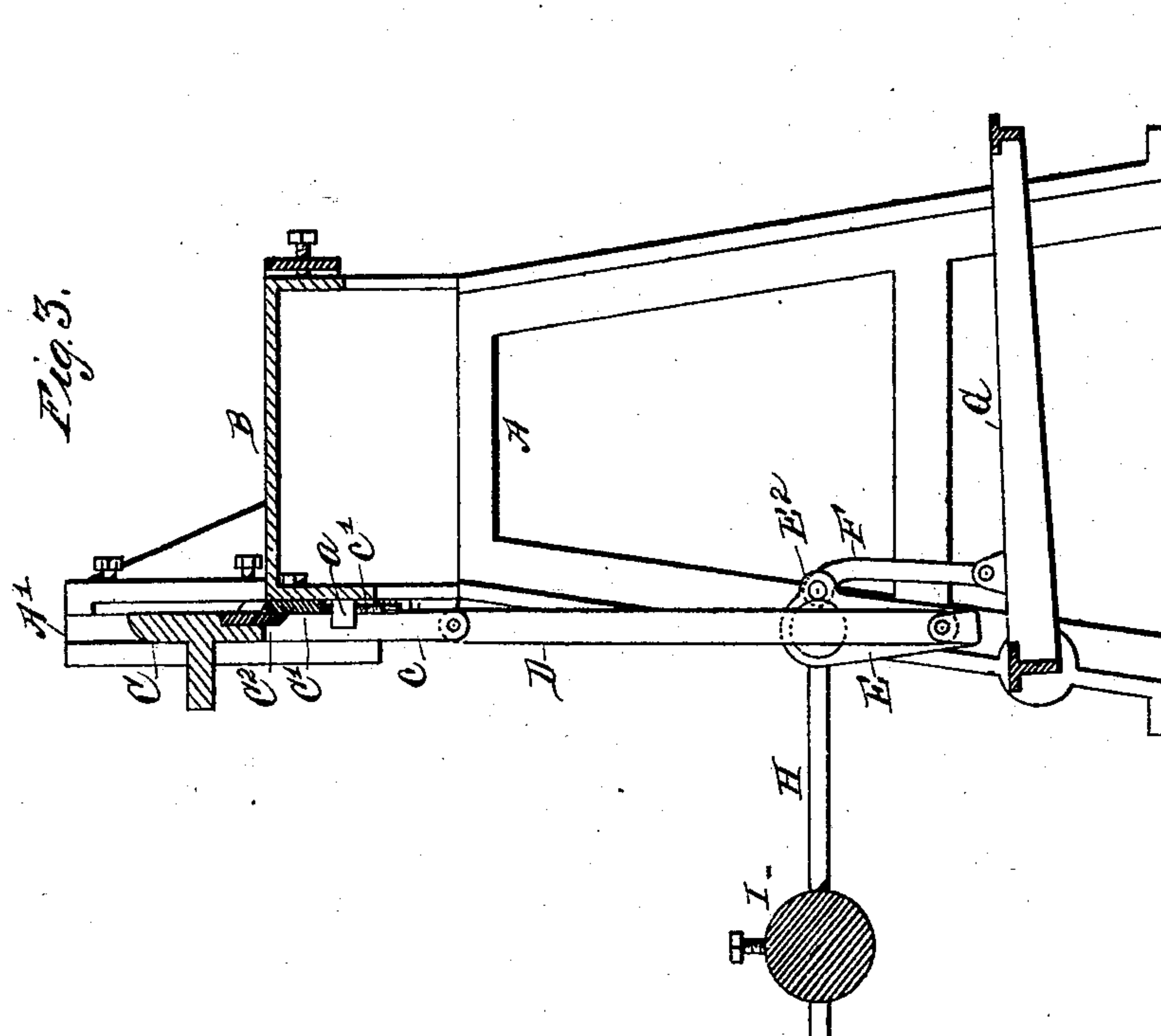
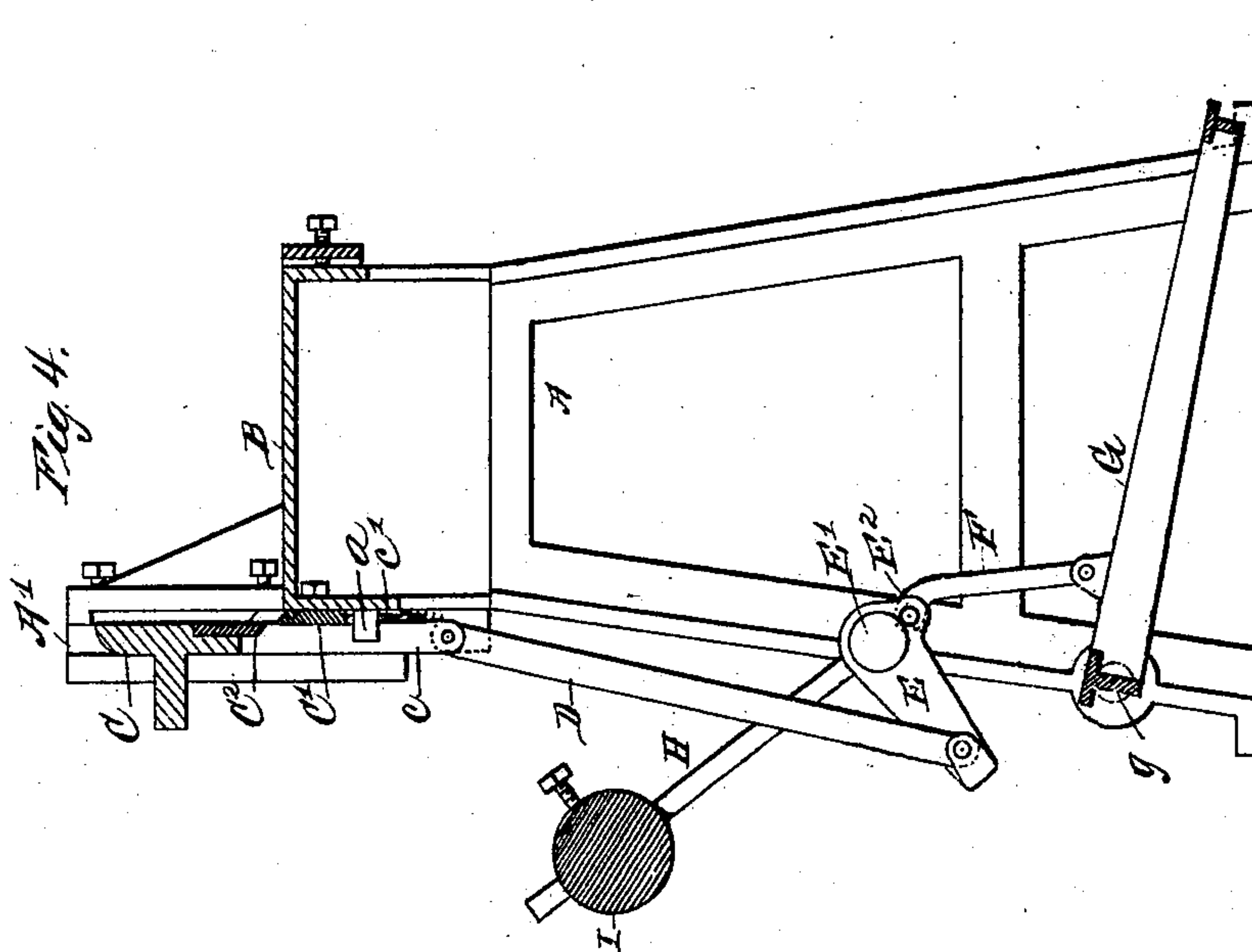
(No Model.)

2 Sheets—Sheet 2.

C. OBERLE & E. FALLER.
SHEARS.

No. 506,371.

Patented Oct. 10, 1893.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES OBERLE AND ERNST FALLER, OF NORTH TARRYTOWN, NEW YORK,
ASSIGNORS TO MAX H. C. BROMBACHER, OF SAME PLACE.

SHEARS.

SPECIFICATION forming part of Letters Patent No. 506,371, dated October 10, 1893.

Application filed August 13, 1892. Serial No. 443,058. (No model.)

To all whom it may concern:

Be it known that we, CHARLES OBERLE and ERNST FALLER, both of North Tarrytown, Westchester county, and State of New York, have invented a certain new and useful Improvement in Shears, of which the following is a specification.

Our improvement is specially adapted for what are called squaring shears used by tin-smiths.

We will describe a machine embodying our improvement and then point out the novel features in the claims.

In the accompanying drawings, Figure 1 is a rear view of a machine embodying our improvement, certain parts being broken away. In this view the parts are shown in their normal positions. Fig. 2 is a transverse vertical section taken at the line $x-x$ Fig. 1, showing parts in the same position as in Fig. 1. Fig. 3 is a similar section showing parts in a different position. Fig. 4 is a similar section showing parts in a still different position.

Similar letters of reference designate corresponding parts in all the figures.

The framework A, of the machine may be of any ordinary construction. It is surmounted by a bed, B, upon which the material to be cut is placed. At the rear of the bed, a stationary knife C' is fastened in any suitable manner. In the present instance, it is represented as being sustained vertically by screws c' , engaging with tapped holes in lugs a extending rearwardly from the bed B and impinging against the under side of the said knife. In the upper part of the framework of the rear of the bed B are slideways A', in which a cross head C reciprocates vertically. In the cross head C arms c extend downwardly, and at the lower end are pivotally connected with the upper ends of links D, whose lower ends are pivotally connected with cranks E extending from tubular hubs e turning upon studs E', which are bolted to the side pieces of the framework A. These hubs in effect constitute rock shafts. From the tubular sleeves e from which the cranks E extend other cranks E² extend at about right angles to the cranks E. They may be formed integral with the cranks E. The cranks E² have pivotally connected with them the up-

per ends of links, F, whose lower ends are pivotally connected with a treadle lever G, that is fulcrumed by journals or pivots g to the said pieces of the framework A. This treadle lever G extends to the front of the machine.

From the sleeves e of the cranks E E² arms or rods H extend. As shown, they extend in line with the center line of the cranks E² but from diametrically opposite portions of the sleeves e , although somewhat at one side of the crank arms E² in the direction of the length of the sleeves. To the rods H is affixed a weight I, here shown as made in the form of a heavy bar having holes which enable it to be slipped upon the rods H and to set screws for clamping it thereon.

The combination of parts which we have described is such as to produce two downward strokes of the upper knife C² for each depression of the treadle. We will now describe how this is accomplished.

When the treadle is at rest about half way throughout its possible range of movement, the crank E will be brought to a vertical position, as represented in Fig. 3. The movement of the treadle to this position will have caused the descent of the upper knife C², so that it will, in conjunction with the lower knife, make a cut. During this movement of the treadle, the arms H will have been brought to a horizontal position. A continued downward movement of the treadle will cause the cranks E to be swung rearward at an angle to the vertical, as represented in Fig. 4. Thus the upper knife C² will be slightly raised above the lower knife. The arms H will then be elevated considerably. When the pressure on the treadle is relaxed, the weight I acting through the arms H on the sleeves e upon which the cranks E turn first depress the cranks into a vertical position, as represented in Fig. 3, thereby producing a second cut of the knives and afterward will move the cranks E forward, as represented in Fig. 2, thus raising the upper knife above the lower knife and at the same time elevating the treadle. It will thus be seen that by a single depression of the treadle, two cuts will be produced.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination in a cutting machine

of a reciprocating knife, a treadle for causing
the reciprocation of the said knife, a rock
shaft, a connection between said treadle and
the rock shaft, a crank operated simultane-
5 ously with the rock shaft, a link connecting
the crank with the reciprocating knife and
a weight connected to an arm extending from
the crank and which, by the depression of the
treadle, will be raised to a point enabling it
10 to reciprocate the knife to make a cut when
said weight resumes its normal position, sub-
stantially as specified.

2. The combination in a cutting machine,
of a reciprocating knife, a rock shaft a treadle
15 for causing the reciprocation of the said knife,

a connection between said treadle and the
rock shaft, a crank operated simultaneously
with said rock shaft, an arm extending at
right angles to the knife-operating crank and
a weight on said arm, operating to recipro- 20
cate the knife to make a cut substantially as
specified.

In testimony whereof we have signed our
names to this specification in the presence of
two subscribing witnesses.

CHARLES OBERLE.
ERNST FALLER.

Witnesses:

F. V. MILLARD,
MAX H. C. BROMBACHER.