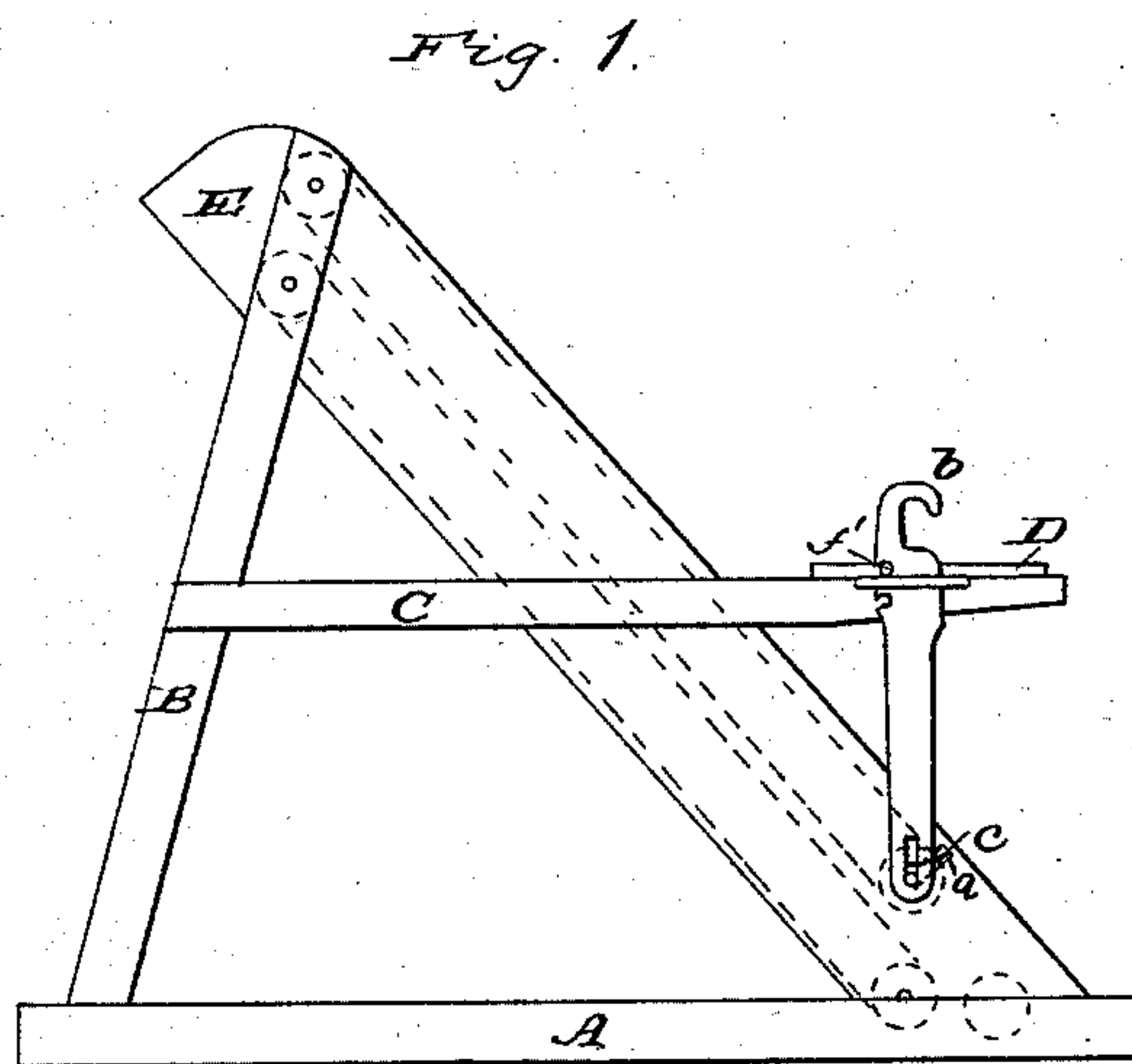
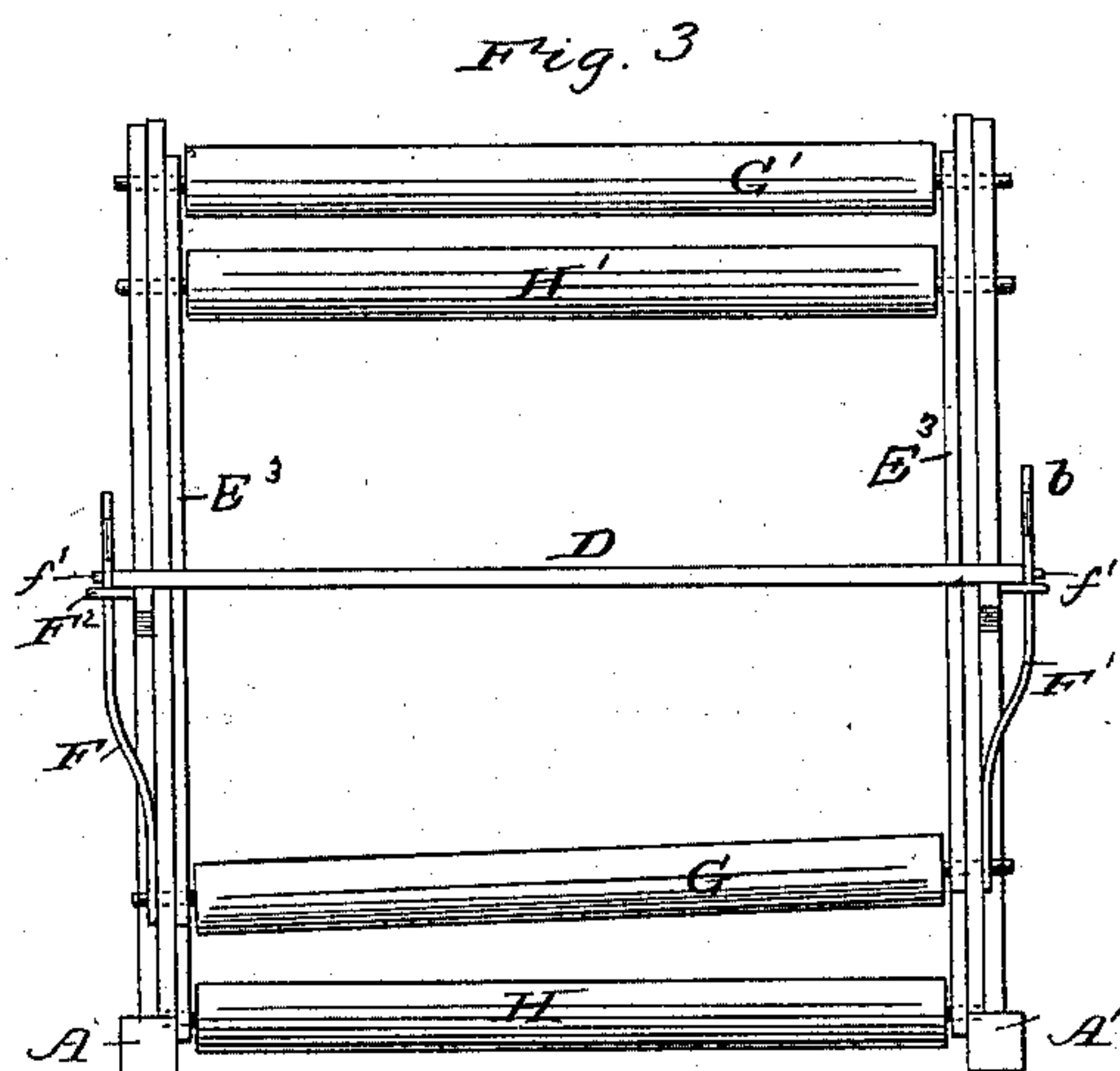
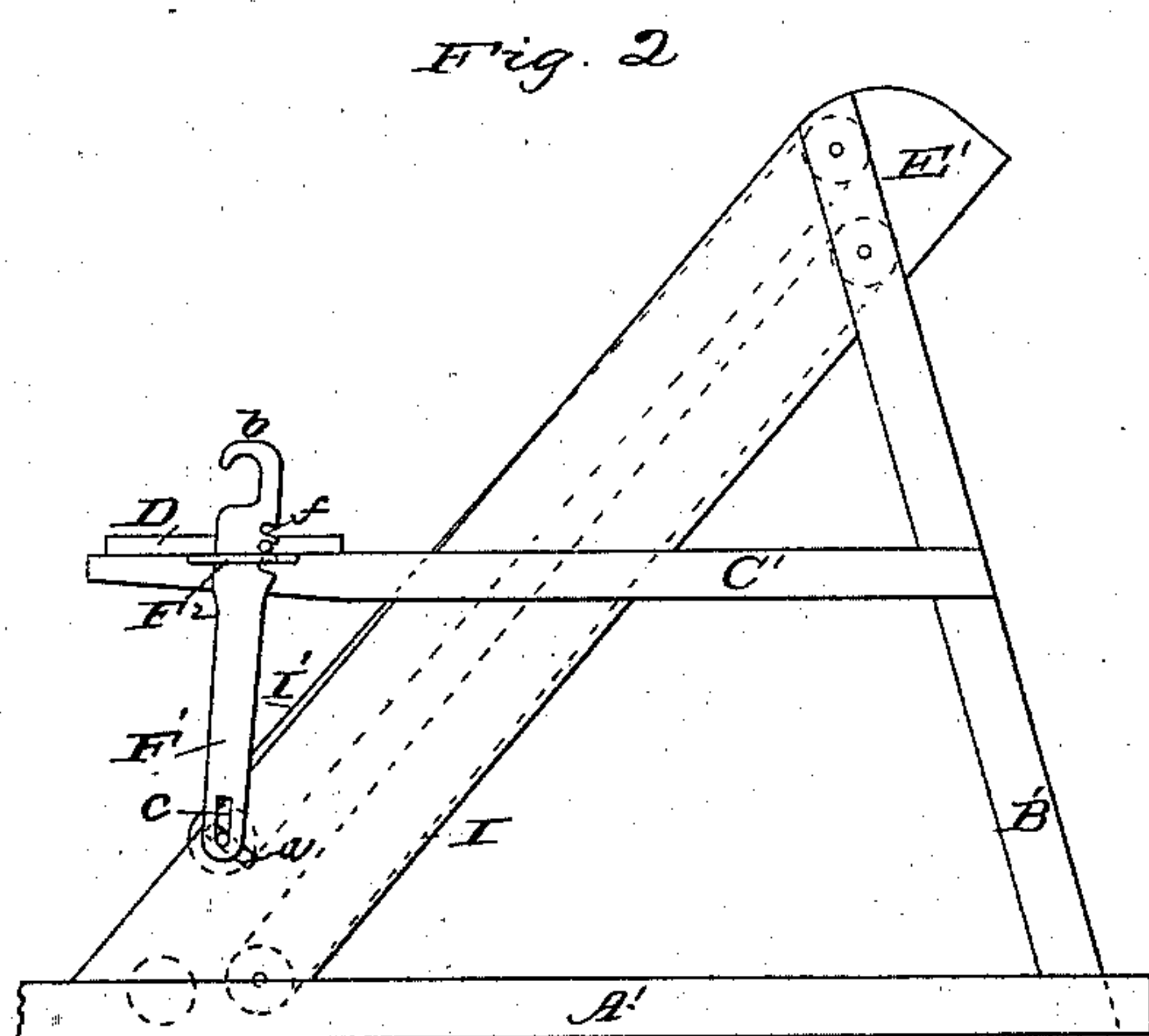


(No Model.)

J. M. CURTIS.
HARVESTER ELEVATOR.

No. 255,603.

Patented Mar. 28, 1882.



Witnesses:

H. N. Low
J. C. Barker.

Inventor

James M. Curtis
by Doubleday & Bliss
Atty.

UNITED STATES PATENT OFFICE.

JAMES M. CURTIS, OF ST. PAUL, MINNESOTA.

HARVESTER-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 255,603, dated March 28, 1882.

Application filed January 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. CURTIS, a citizen of the United States of America, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Harvester-Elevators; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

With the elevators that have been used heretofore on harvesters much trouble has been experienced from the fact that they tend to carry the grain upward in such manner that one end of the straw is advanced ahead of the other. As a result the grain is delivered from the elevator upon the binding-table endwise, or at least on lines diagonal to the plane of the table. This seriously interferes with properly disposing of the cut grain to form gavels of suitable shape and size.

The object of my invention is to so arrange the elevators that either end of the grain can be more or less retarded while it is rising, and thus insure the proper delivery of it to the binding-table. With the elevator so arranged I combine devices for adjusting the movable parts, which devices are placed within convenient reach of the driver while in his seat upon the machine.

Figure 1 is a front elevation of an elevator for harvesters having my improvements applied thereto. Fig. 2 is a rear elevation of the same. Fig. 3 is a side view, the belts being removed from the rollers.

In the drawings, A A' represent respectively the front and rear sills of the elevator-frame; B B', the uprights; C C', the cross-pieces; E E', the side boards of the elevator, and D the plank for supporting the driver's seat. Of course these parts may be of any approved construction, their character in detail not entering essentially into the invention.

H H' represent respectively the lower and the upper rollers of the elevator-belt, I, they being mounted in substantially the ordinary

manner relatively to the other parts. The cut grain is carried upward upon this endless belt. To hold the grain upon it a yielding cover is placed opposite to this belt, which operates to more or less press the grain against it. In the construction illustrated in the drawings this covering and pressing device is shown to be of the form of an opposing endless belt or apron, I', operating in conjunction with the lower one in the well-known manner. The lower roller, G, of this upper belt, I', is mounted so that it can swing to a limited extent toward and from the lower belt, the shaft of the roller preferably projecting through slots *a* in the sides E E' of the frame.

E³ E³ are bars pivoted on the axis of the upper elevator-roller and adapted to swing around said axis. Through these bars project the gudgeons or shaft of the lower roller of the upper elevator, the bars providing a bearing for the gudgeons or shaft. When the upper elevator is thus supported its lower end is free to swing with the bars E³ E³ relatively to the lower elevator and to the frame.

To make the lower end of the canvas adjustable I combine with it supporting-bars F F', the lower ends of which are connected to the roller or support of the lower end of the canvas. When the roller has journals or gudgeons the vertical supporting-bars F F' inclose them by means of slots in their lower ends. By placing the bars F F' outside the frame the bars E³ can be arranged close to the sides A A'. At the upper ends these supporting-bars are provided with a series of notches at *f*, whereby the bars can be suspended at different points upon pins or lugs *f'*. By means of staples F² the bars are held in proper position. Preferably each bar is provided at the upper end with a handle, *b*, by which the operator can readily move the bar.

The method of operating the devices described is as follows: If at any time it should be found that the heads of the cut grain are being elevated too rapidly—that is, elevated ahead of the butts—it can be remedied by pulling upward the rear bar, F, and suspending it in a lower notch *f*. This pulls upward the rear end of the roller G of the upper elevator-belt, and therefore lessens the pressure of said belt upon the heads of the grain, and they

tend to fall downward sufficiently to carry the straw upward in horizontal lines.

By means of the bars $E^3 E^3$ and the slots c in the supporting-bars $F F'$ it will be seen that
 5 the lower roller of the upper elevator is left free to swing outwardly sufficiently to permit the upward passage of any masses of straw unusually thick. The upper canvas forms a cover for the lower belt, the cover being held
 10 sufficiently rigid by means of the lower roller and the frame.

What I claim is—

1. The combination, with the elevator-belt, the cover formed of flexible fabric and situated above said belt, and a frame which holds
 15 the lower end of said flexible cover fixed relatively to its upper end, of the bar F , loosely connected to said frame, and the pivot f' , which prevents the bar and frame from swinging toward the elevator, and permits them both to
 20 swing away therefrom, substantially as set forth.

2. The combination, with the lower revolving elevator, the upper elevator revolving upon
 25 the lower roller, G , and the upper roller, G' , and the bars $E^3 E^3$, carrying said lower roller and swinging around the axis of the upper

roller, of the vertically-adjustable bar F , which supports vertically the lower roller of the upper elevator and the frame E^3 , substantially
 30 as set forth.

3. The combination, with the lower elevator, the bars E^3 , the upper elevator having the gudgeons or shaft of its lower roller projecting through said bars and through the elevator-frame, of the vertically-adjustable bars F
 35 F' , arranged to support said gudgeons or shaft outside of the elevator-frame, substantially as set forth.

4. The combination, with the lower elevator-belt and the upper elevator-belt arranged to swing at the lower end, of the supporting-bars
 40 $F F'$, engaging with the journals of the swinging roller by the slots c , whereby said supporting-bars are adapted to permit said roller to
 45 swing outwardly and to prevent it from swinging inwardly, substantially as set forth.

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

JAMES MONROE CURTIS.

Witnesses:

J. H. RANDALL,
 JAS. H. A. HIRST.