

J. T. HARRIS.
Improvement in Drawing-Frames.
No. 128,618. Patented July 2, 1872.

Fig. 1

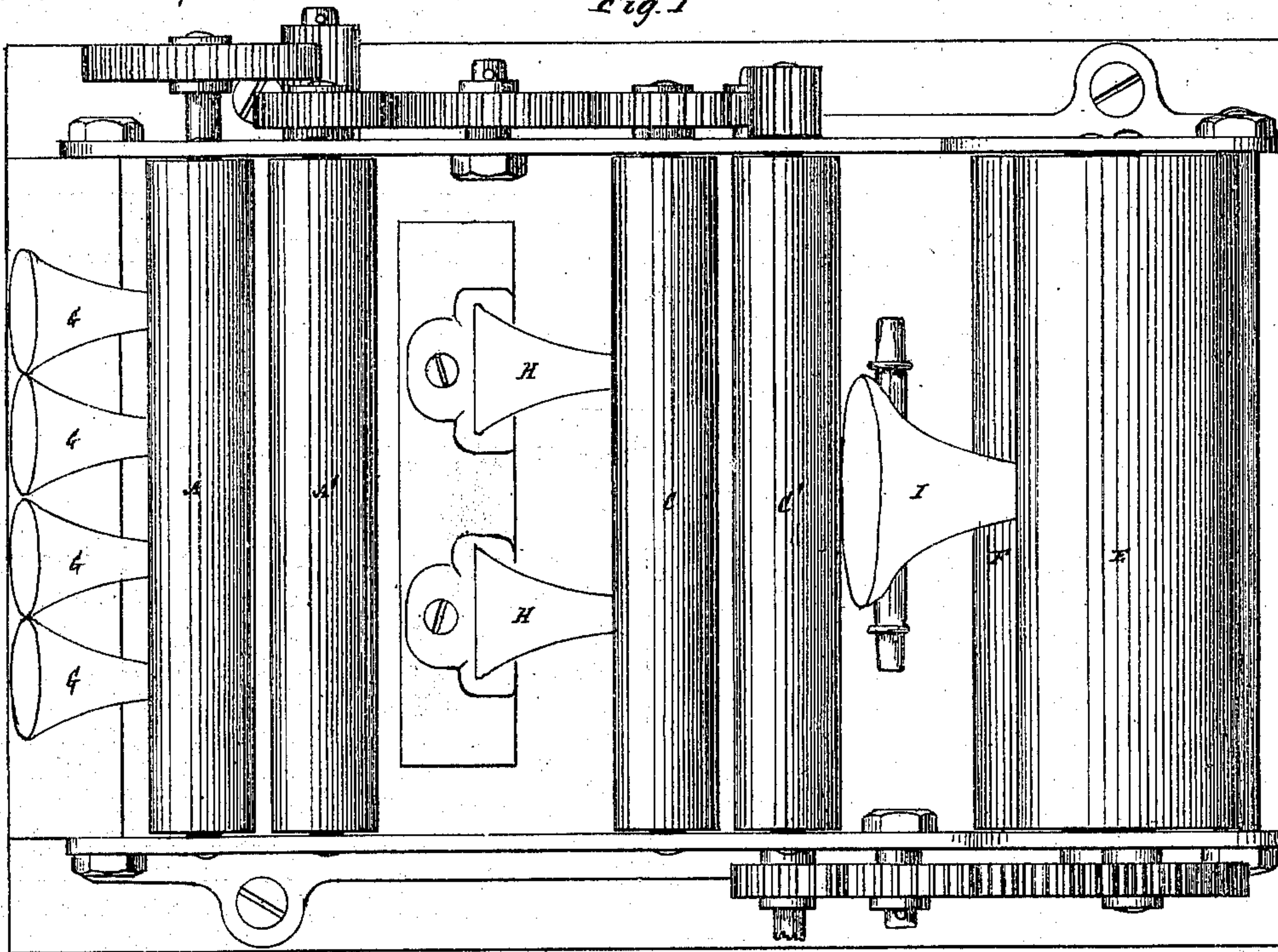


Fig. 2

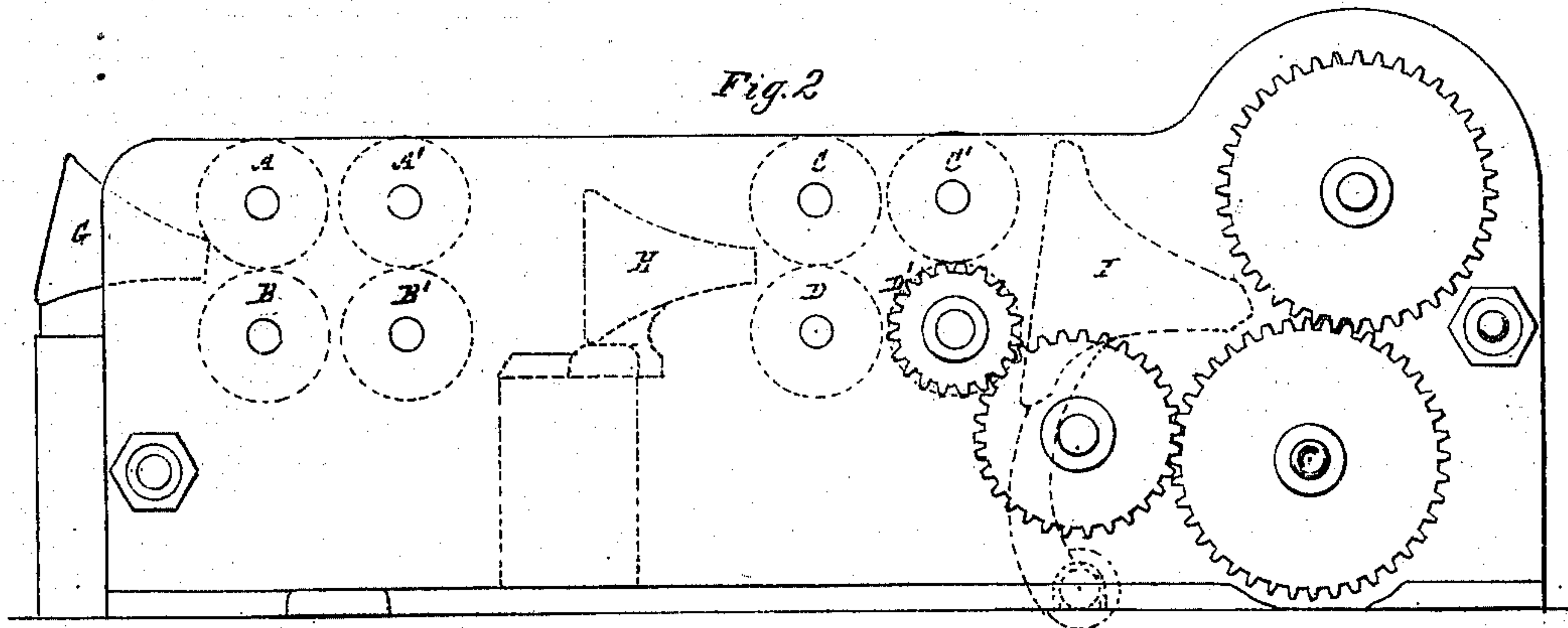
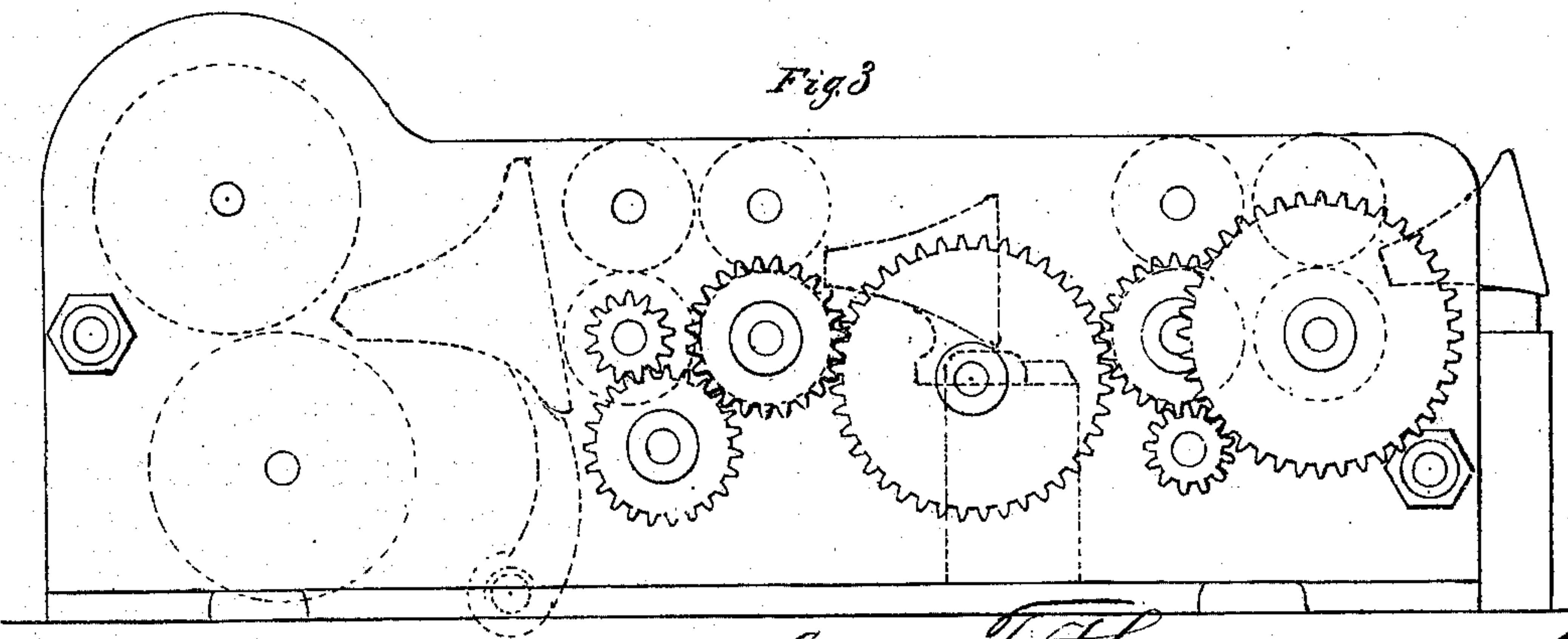


Fig. 3



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES T. HARRIS, OF RICHMOND, ASSIGNOR TO THE A. & W. SPRAGUE MANUFACTURING COMPANY, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN DRAWING-FRAMES.

Specification forming part of Letters Patent No. 128,618, dated July 2, 1872.

To all whom it may concern:

Be it known that I, JAMES T. HARRIS, of Richmond, in the county of Washington and State of Rhode Island, have invented a new and useful Improvement in Apparatus for Drawing and Doubling Cotton and other fibrous materials; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a plan of an apparatus constructed in accordance with my invention, and Figs. 2 and 3 opposite side elevations thereof.

Similar letters of reference indicate corresponding parts throughout the several figures.

My invention consists in a combination, with the drawing-rolls of a drawing-frame, speeder, or other analogous machines, of conical funnels, arranged between any two succeeding sets of said rolls for doubling the slivers as they pass from the one set of drawing-rolls to the next, whereby the necessary doubling and redoubling of the slivers is effected in a continuous manner during their travel through the drawing-frame, thereby avoiding the necessity of reversing them end for end, as when taking them from the can and passing them again through the drawing-rolls, and consequently producing a smoother and better sliver, besides saving time, labor, room, and appliances.

Referring to the accompanying drawing, A A' and B B' represent one set of drawing-rolls, the upper ones, A A', running free, as usual, and the lower rolls, B B', having a positive motion, the last pair of rolls, A' B', of course moving faster than the preceding pair, A B. C C' and D D' represent a similar set of drawing-rolls, arranged at any suitable distance from the first set, the nearest lower roll D traveling at a like velocity with the rear lower roller B' of the first set, and the last lower roller D' being driven to revolve still faster, the upper rolls moving by friction, as before. E F are the usual delivery-rolls at

the end of the frame, the same being geared with the drawing-rolls to revolve as required. The gears for communicating the necessary motions to the several rolls that receive a positive motion may be as shown in the drawing, or otherwise arranged. G G represent a first set of trumpets or conical funnels, through which the cotton or other fiber is introduced in its passage to and through the first set of drawing-rolls A B A' B'. Interposed between this first set of drawing-rolls and the next set C D C' D' thereof are another set of funnels, H H, of only half the number of the first set, G G, and arranged to occupy intermediate positions relatively to the latter, so as to condense the ribands or slivers received from either one pair of the first set of funnels, after the same have passed through the first set of drawing-rolls, into the one of such second set of funnels as occupies an intermediate position to said first pair, thereby doubling the slivers, which then are passed through the second set of drawing-rolls, C D C' D', and from thence into and through a funnel, I, which finishes the doubling and conducts the sliver to the delivery-rolls E F. The same system of doubling between drawing-rolls may be applied to any number of sets of rolls, one behind the other.

By such an arrangement of devices it is not necessary to take the sliver as it is delivered into the cans at the end of the drawing-frames and pass it end for end or in a reverse direction through a succeeding series of drawing and doubling devices; but the whole drawing and doubling is or may be effected during one and the same continuous travel of the fiber, thereby making a smoother and better sliver, and economising time, labor, room, and appliances.

In patent No. 10,876, May 9, 1854—machine for dressing flax—I am aware that a number of pairs of toothed rollers are employed, and between alternate pairs of these rollers are placed alternately pin-toothed cylinders and funnels to condense, comb, and straighten two slivers into a single sliver. I deem such a

machine practically valueless for drawing cotton as described by me, and I therefore do not claim such an arrangement as shown in said patent.

What is here claimed, and desired to be secured by Letters Patent, is—

The combination, with two or more series

of drawing-rolls, of funnels arranged to double the slivers as they pass from the one set of drawing-rolls to the adjacent set, as and for the purpose set forth.

Witnesses: JAMES T. HARRIS.

JOHN L. NOYES,

GEORGE HARRIS.