A. R. Davis,

Smoke Machine.

No. 33,074. Patented Aug. 20, 1861.

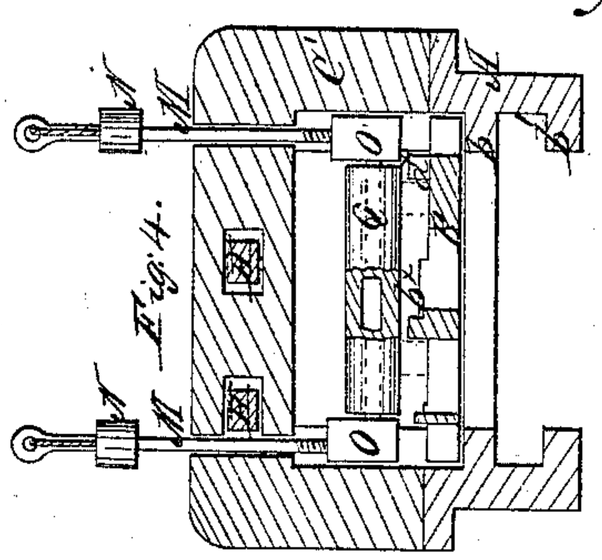

Fig. 4.

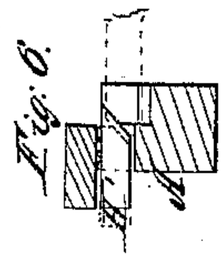

Fig. 6.

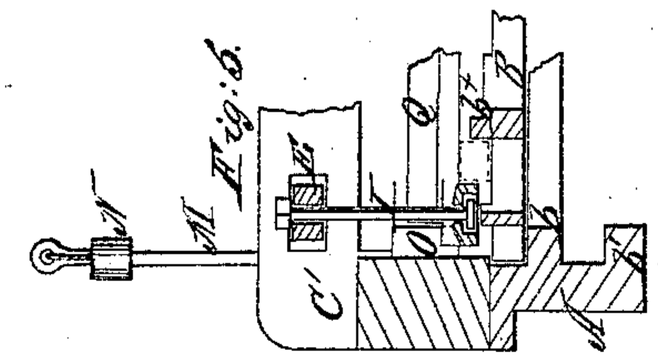

Fig. 5.

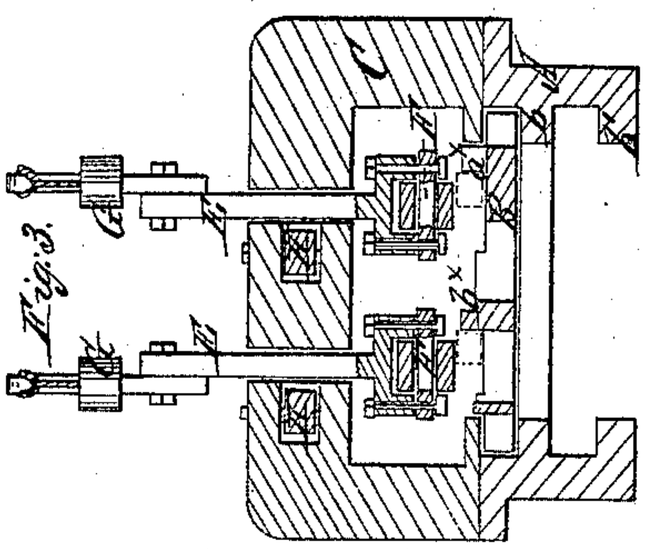

Fig. 3.

Fig. 1.

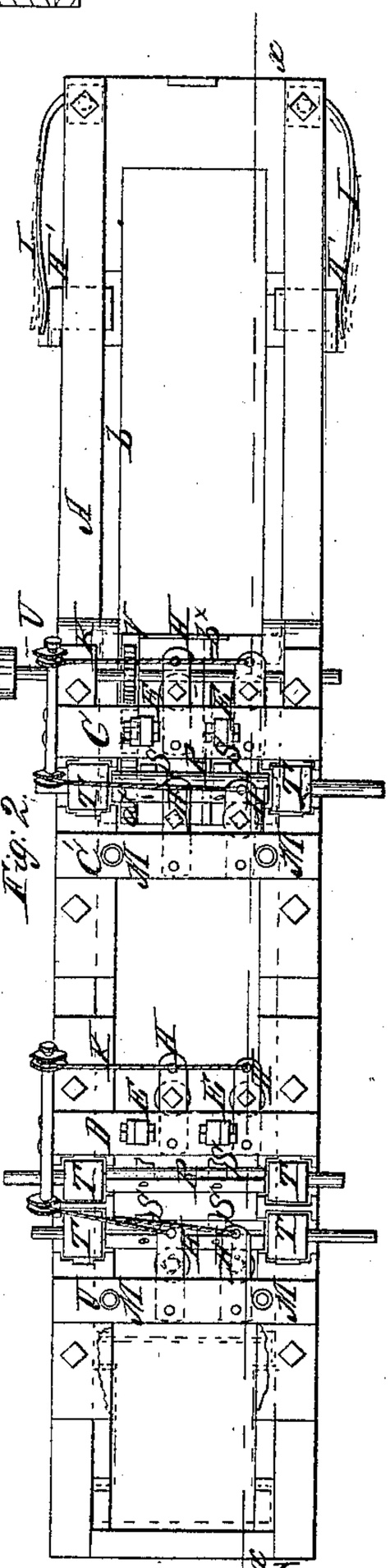

Fig. 2.

Witnesses:
W. Tisdale
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UNITED STATES PATENT OFFICE.

ALBERT R. DAVIS, OF SYRACUSE, NEW YORK.

SPOKE-MACHINE.

Specification of Letters Patent No. 33,074, dated August 20, 1861.

To all whom it may concern:

Be it known that I, A. R. DAVIS, of Syracuse, in the county of Onondaga and State of New York, have invented a new and Improved Machine for Making Spokes for Wheels; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention taken in the line *x*, *x*, Fig. 2. Fig. 2 is a plan or top sectional view of my invention, taken in the line *y*, *y*, Fig. 1. Fig. 3 is a transverse section of my invention taken in the line *z*, *z*, Fig. 1. Fig. 4 is a transverse section of my invention taken in the line *z'*, *z'*, Fig. 1. Fig. 5 is a transverse section of my invention, taken in the line *x'*, *x'*, Fig. 1. Fig. 6 is a transverse section taken in the line *y'*, *y'*, Fig. 1.

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

The object of this invention is to obtain a machine whereby spokes may be made with great rapidity and in a perfect manner.

The invention consists in the employment or use of a series of carriages placed in an inclined bed and used in connection with suitable rotary cutters and pressure rollers; all arranged as hereinafter shown and described to effect the desired result.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A represents an inclined bed or frame which is properly supported by a framing or legs *a;* and B represents a series of carriages which are placed in the bed or frame A, and work on guides *b*, *b'*, said guides being placed in pairs one over the other, the upper guides being for the working or feeding movement of the carriages and the lower guides for the return movement of the same.

On the bed or frame A, there are firmly secured cross-heads C, C', D, D'. In the cross-heads C, D, there are fitted vertical slides E, two in each; and in the lower end of each slide E, there is fitted a roller F. Each slide E, has a weight G, attached to its upper end.

In each cross-head there is placed a horizontal lever H, having a pendent pin or rod I, attached. Each rod I, has a roller J, on its lower end, and to each lever H, there is secured a cord K, having a weight L, attached.

In the cross-heads C', D', there are placed vertical slides M, two in each. These slides have each a weight N, secured to them and the lower ends of the slides of each cross-head have bearings O, attached, in which the joints of a roller Q, are fitted loosely.

Between each pair of cross-heads C, C', D, D', there are placed rotating shafts R, on which cutters S, are secured. The cutters S, that are between the cross-heads C, C', are for planing off the edges of the spokes while those on the shafts between the cross-heads D, D', have concave cutting edges and plane the sides of the spokes—see Fig. 2, in which the forms of the cutters are shown.

The journals of the cutter shafts R, are fitted in sliding or adjustable bearings T, which may be arranged in any suitable way and said shafts may be rotated or driven by any convenient power. In the lowermost cross-head C, there is placed a shaft U, which has a pinion V, on it, said pinion gearing in racks *a**, on the carriages. Each carriage B, has a central guide or bearing strip *b**, upon it.

In the lower part of the inclined bed or frame A, at each side, there is fitted a horizontal slide H'. These slides are allowed to work freely in the bed or frame and each has a spring I, bearing against its outer edge, said springs having a tendency to keep the slides H', shoved inward. The inner edges of the slides H', are beveled to admit of the carriages B, shoving them outward, as they reach the termination of their downward movement on the lower guides *b'*.

The operation is as follows: The "stuff" from which the spokes are cut, is placed on the carriages B, two on each carriage, and the latter shoved upward by the attendant, so that the pinion V, may engage with the rack *a**. The rollers F, Q, J, keep the stuff down in proper position on the carriages, while the rollers J, keep the "stuff" bearing respectively against the strips *b**, and the inner sides of the racks *a**. The first cutters S, between the cross-heads C, C', plane off and finish the edges of the spokes, while the second cutters, between the cross-heads D, D', plane off and finish the sides of the spokes, that is to say, the upper side of them in convex form. As each carriage B, reaches the top of the bed or frame A, it drops down on

the lower guides *b'*, and descends by its gravity to the bottom of the bed or frame, and forcing outward the slides H, passes upward on the upper guides *b*. The operator then turns the stuff on the carriages which are shoved upward as before and the opposite sides of the "stuff" are finished. The slides H, it will be seen admit of the carriages being shoved directly upward on the guides *b*, to the cutters. It being understood that one carriage B, shoves up the other above the pinion V, the latter, of course, only acting on one carriage at once.

Having thus described my invention what I claim as new, and desire to secure by Letters Patent, is:—

1. The series of carriages B, placed in an inclined bed or frame A, in connection with the vertical and lateral pressure rollers F, Q, J, vertical slides E, weights G, horizontal bars H, rods I, vertical slides M, weights N, and rotary cutters S, arranged for joint operation as and for the purpose herein set forth.

2. The slides H', when arranged and used in connection with the parts above enumerated, as and for the purpose specified.

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Witnesses:

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