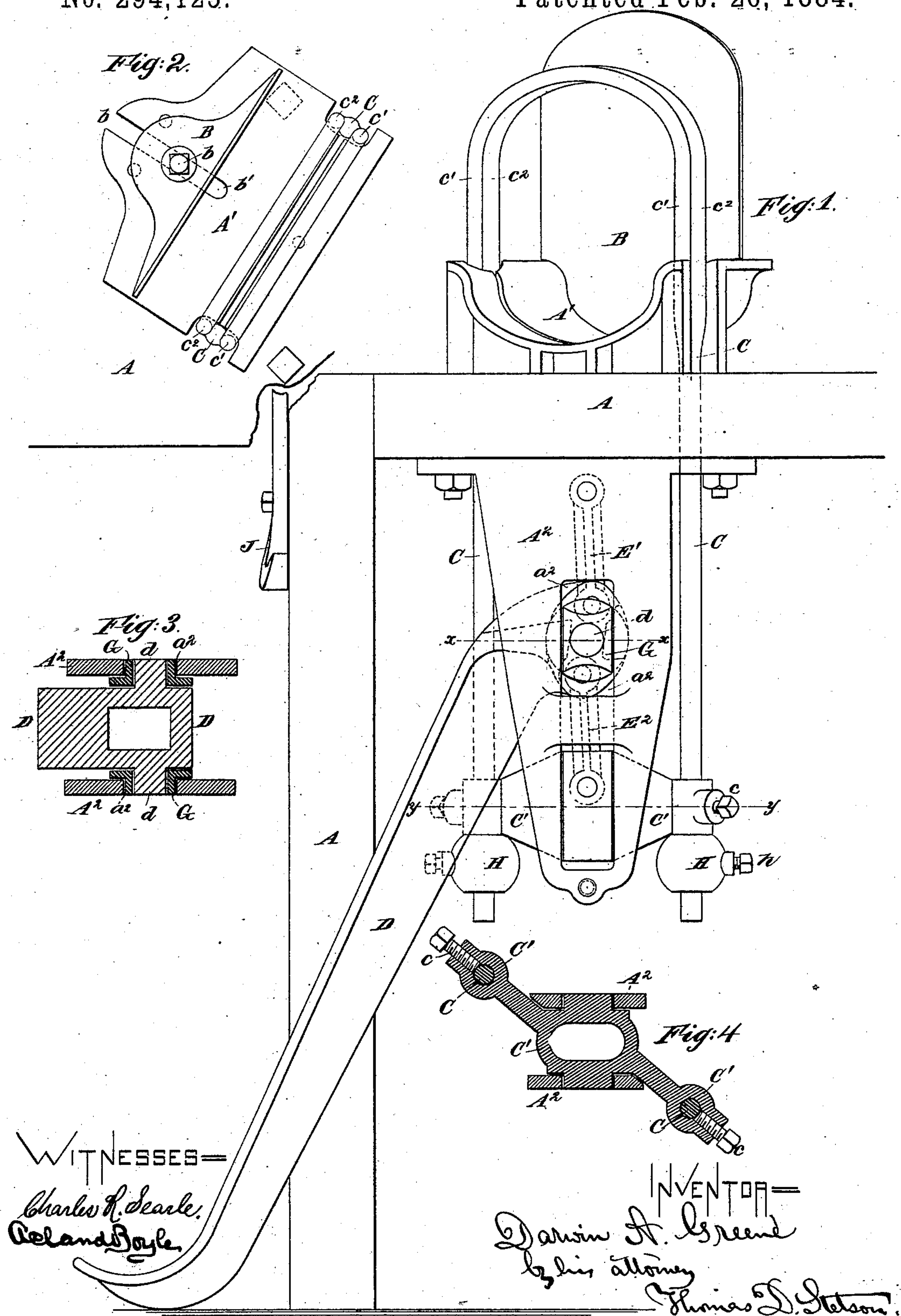


(No Model.)

D. A. GREENE.
WOOD BUNDLING MACHINE.

No. 294,125.

Patented Feb. 26, 1884.



UNITED STATES PATENT OFFICE.

DARWIN A. GREENE, OF NEW YORK, N. Y.

WOOD-BUNDLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 294,125, dated February 26, 1884.

Application filed June 25, 1883. (No model.)

To all whom it may concern:

Be it known that I, DARWIN A. GREENE, of New York city, in the county and State of New York, have invented certain new and useful Improvements in Wood-Bundling Machines, of which the following is a specification.

My improved machine is on the general plan set forth in the patent to me dated June 5, 1866, No. 55,282. The present invention lies in improvements in the arrangement. Instead of overhanging the foot-lever which receives the pressure of the foot and transmits through toggles the powerful compressive strain to the bundle of wood which is about to be tied, I mount such lever centrally in the working parts. I mount the lever in cylindrical bearings in a box, which box moves up and down in the slot in the fixed framing. The cross-bar or yoke which engages with the strap and is depressed by the treadle-lever is arranged obliquely to the lever, and the strap and cradle are correspondingly oblique. This affords greater facility for the putting in of the wood and taking out of the bundle, and does not interfere with the tying of the string. It also allows the operator to see the work more easily than heretofore. In the most complete form of the invention, the strap which, being depressed by the treadle-lever, compresses the bundle of wood, is double, with sufficient space between for the string. This compresses the bundle on each side of the string, and makes, obviously, a more perfect job than the former plan of compressing the bundle only on one side, and effecting the tying where the bundle is flaring. In the former construction the gage or adjustable back was mounted on the table, leaving a cavity between the cradle and itself, which was liable to receive sticks of wood and delay the work. In my improved machine the gage is mounted on the cradle. In no stage of adjustment is there any cavity between the cradle and the gage. The strap is connected to the cross-head by pinching-screws, re-enforcing clamps being employed on the ends of the straps below the cross-head, to aid in holding the strap very strongly.

The accompanying drawings form a part of this specification, and represent what I consider the best means of carrying out the invention.

Figure 1 is an end elevation, showing all of the novel parts, with so much of the framing as is necessary to indicate their relation thereto. Fig. 2 is a plan view of the parts which appear above the table. Fig. 3 is a horizontal section through certain parts on the line $x x$, Fig. 1. Fig. 4 is a horizontal section through certain parts on the line $y y$ in Fig. 1. Similar letters of reference indicate like parts in all the figures.

A is a fixed frame, and A' a casting, which I term a "cradle," which receives the wood. This cradle is mounted obliquely upon the frame A, as clearly shown in Fig. 2, and is of sufficient length to allow the gage B to be mounted thereon, being adjusted in the slot b' and held by the binding-screw b . The lower portion of the gage B is rounded, to form the counterpart of the upper face of the cradle. The sides of the cradle are recessed to receive a strap, C, which is double at its upper end, as indicated by $c' c^2$. The lower ends of the strap are single, and are held by binding-screws c in the ends of a skewed cross-head, C'. (Shown in plan in Fig. 4.) This mode of attachment allows the strap to be rapidly shifted up and down to the considerable extent required in changing suddenly from large to small bundles and back again, but without the addition now to be described it is liable to slip under the great strain imposed by a strong operator with the great advantage due to the toggle action.

H are strong knobs or clamps fitted on the lower ends of the straps, and secured by binding-screws h . These serve to re-enforce the union of the strap C with the cross-head C', and make it perfectly reliable. The lever D turns on the trunnions d , and is arranged to be strongly depressed by the foot to throw the toggles $E' E^2$ nearly into line, and thus to effect the required strong depression of the cross-head C', and of the connected duplex strap C. It will be understood that the string (not represented) is introduced between the duplex parts of the strap C $c' c^2$ and allowed to sink into the proper recess in the cradle. The wood is placed in the cradle in proper quantity to nearly fill the space under the strap while the strap is in its highest position, the lever D being previously elevated and engaged on the fixed hook J. When a sufficient

quantity of wood is in the cradle and the ends of all the pieces are pressed against the gage B, the lever D is given a sufficient lateral movement to disengage it from the hook J, 5 which falls somewhat by gravity. Then, the foot being applied, it is depressed to the floor, and the tying of the compressed bundle is effected. Next the lever D is released by the foot, lifted by the hand, and engaged by the hook 10 J. The bundle is lifted out, a new string inserted, and the operation repeated indefinitely. The slots a^2 in the guides A^2 are considerably wider than the trunnions d .

Instead of allowing the trunnions to bear 15 directly against the sides of the slot, they are inclosed in boxes G, which are received in the slots and present wide bearings, so that they move smoothly up and down therein. These parts may be finished by machinery, if 20 preferred; but my experiments indicate that it will not be generally necessary.

I prefer that the links $E' E^2$, which together constitute a double toggle, shall not come quite in line with each other before the treadle-lever 25 D bears on the floor. The arrangement should be such that on removing the foot from the lever D it will spring up by the reaction of the bundle of wood acting through the toggle. A dexterous operator will stoop down and catch 30 it during its upward movement and continue it until it is engaged on the hook J.

The fact that the strap C is in two parts, with space between them for the string to be applied and tied, is especially important on 35 the very short lengths and large bundles which are now in demand. The gage being properly formed to match the cradle, and be-

ing mounted and adjusted thereon, allows its being much more firmly fastened than when it is secured on the table, as in the former 40 plan.

I claim as my invention—

1. In a wood-bundling machine, the cradle A' , cross-head C' , and one or more straps, $c' c^2$, arranged askew relatively to the shaft d , and 45 lever D, in combination therewith, and with the toggle-links $E' E^2$, as herein set forth.

2. In a wood-bundler, the cradle A' , having the slot b' , in combination with the fastening-bolt b , and with a gage, B, having its lower 50 outline curved to match the cradle and allow it to be adjusted forward and backward thereon, as herein specified.

3. The strap C, single at each end and double at and near the middle, bent as shown, 55 and combined with the cross-head or yoke C' , and suitable mechanism for operating it up and down, and with the cradle A' and gage B, as herein specified.

4. In a wood-bundler operating with the 60 aid of a strap, C, and treadle-lever D, the cross-head C' , and adjusting means c , in combination therewith, and with the re-enforcing clamps H and their adjusting means h , as 65 herein specified.

In testimony whereof I have hereunto set my hand, at New York city, New York, this 20th day of June, 1883, in the presence of two subscribing witnesses.

DARWIN A. GREENE.

Witnesses:

WM. C. DEY,
M. F. BOYLE.