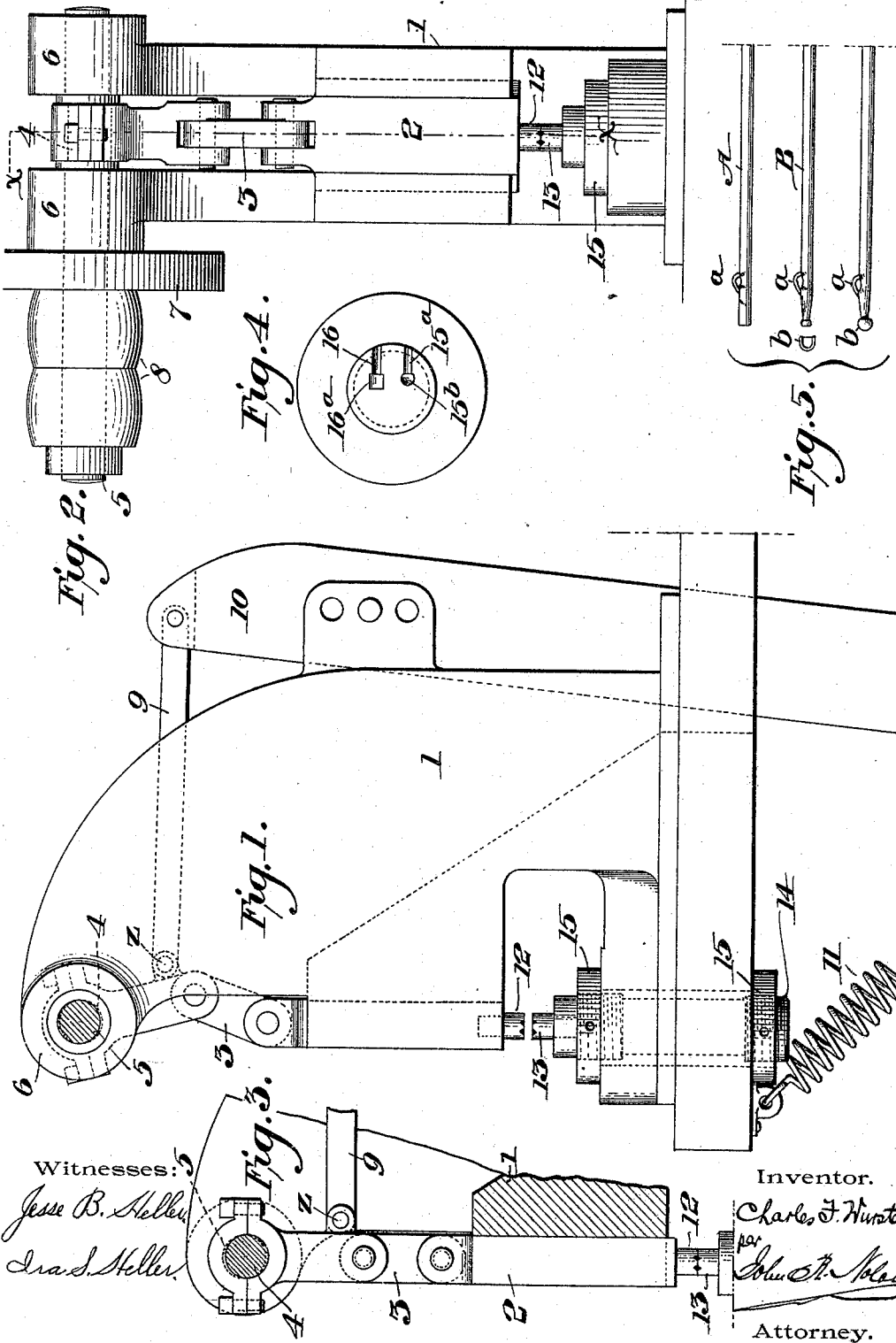


(No Model.)

C. F. WURSTER.
MACHINE FOR HEADING UMBRELLA RIBS.

No. 537,662.

Patented Apr. 16, 1895.



Witnesses:
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UNITED STATES PATENT OFFICE.

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MACHINE FOR HEADING UMBRELLA-RIBS.

SPECIFICATION forming part of Letters Patent No. 537,662, dated April 16, 1895.

Application filed January 17, 1894. Serial No. 497,167. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. WURSTER, a citizen of the United States, residing in the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Heading Umbrella-Ribs, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention comprises a machine, of novel construction, for heading, or applying heads, to the ends of umbrella ribs or the like, the machine being also serviceable for compressing and "upsetting" the ends of fluted or paragon ribs preparatory to the application of the heads thereto.

The invention comprehends two opposed dies, one of which is continually reciprocating relatively to the other, with means whereby the said reciprocating die may be adjusted toward or retracted from the other die at predetermined intervals, without affecting the reciprocative action of the die, as will be hereinafter set forth in detail and be definitely claimed.

In the annexed drawings,—Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is a front elevation, the upper or reciprocating die being depressed. Fig. 3 is a partial vertical section, as on the line $x-x$ of Fig. 2. Fig. 4 is a plan of one of the dies detached. Fig. 5 represents the end of a fluted rib as it appears before and after being compressed and headed.

The numeral 1 designates the supporting frame, which is a substantial casting of proper form to receive and sustain the various co-operating parts of the machine. Fitted to suitable guide-ways in the front of this frame is a vertically reciprocative plunger, 2, to the upper end of which is connected one member of a toggle 3, the other member of the latter being in turn operatively connected with a suitably-disposed eccentric or crank, 4, on an upper shaft 5. This shaft is mounted in boxes 6 on the frame, and is provided with an appropriate fly wheel 7 and a driving pulley or pulleys 8 to which motion may be transmitted from a suitable source of power.

Hence during the rotation of the shaft the plunger 2 will be rapidly and continuously reciprocated. Pivotally connected, as at z , with the upper member of the toggle, is the forward end of a rearwardly-extending rod, 9, the other or rear end of which is similarly connected with a pivoted treadle lever 10. Normally the toggle occupies the "broken" or rearwardly-inclined position indicated in Fig. 1, thereby maintaining the plunger elevated, yet, obviously, when the rod is forced forward, the toggle is straightened, and the plunger, perforce, depressed. It will be seen that the movements of the rod to operate the toggle may be effected by properly moving the treadle. The lower arm of the latter is preferably connected, by a powerful retracting spring, 11, with the bench upon which the machine is supported, the tendency of which spring is to draw said arm forward to maintain the plunger, through the intermediate connections, in the normally elevated position. It will be obvious that when the toggle is opened, it does not impair the rapid reciprocative action of the plunger by the eccentric above.

Fitted to the lower end of the plunger, is a die 12, the acting face of which is suitably shaped or recessed to meet the requirements of the particular work in view. Immediately below this die is disposed a co-acting die 13, which occupies a fixed relation to the path of the upper die, whereby when the latter is depressed, it will come in contact with the lower die, or nearly so. In the present instance die 13 is secured to a threaded support 14 that extends freely through opposite orifices in the base of the machine and the bench, said support being provided with nuts 15 that take against the upper side of said base and the underside of the bench, respectively, and thereby firmly secure in place the support and its die. By properly manipulating the nuts the latter parts may be nicely adjusted vertically in respect to the upper die. The working faces of the dies are each provided with recesses 15^a, 16, the corresponding recesses of the two dies being in alignment so that they will register when the upper die is depressed. The recesses 15^a are

V-shaped in cross-section with an expanded inner portion 15^b, while the adjacent recesses are similarly formed and provided with sockets 16^a.

5 To compress and up-set the end of a fluted rib, preparatory to the application of a head thereto, that is, after the usual eye, *a*, has been affixed, said end, with its eye turned upward, is inserted in the recess of the lower
10 die, and the treadle lever is actuated to depress the upper die, the corresponding recess therein embracing the end of the rib, and by the rapid strokes of the upper die effecting the end in view. (A and B Fig. 5, indicate
15 the rib before and after the operation just described.) This done, the treadle is released to permit the upper die to be returned by the action of the spring to the normally-elevated position.

20 To apply a head to the tip of the rib, a metallic cap, *b*, is placed thereon, and the latter inserted in the recess 16, with the cap in the socketed portion. The upper die is then depressed as before, and, as a result of
25 its hammer-like blows, the cap is compressed

around the tip of the rib and firmly secured thereto.

Where the head is applied to solid ribs or rods, the recess 15^a is not used.

I claim as my invention—

In a machine for heading umbrella-ribs, &c.,
30 the combination, with a supporting frame and a die thereon, of a vertically-reciprocative plunger guided in the frame directly
35 above said die, a co-acting die on said plunger, a shaft provided with a crank or eccentric, a toggle the upper arm of which is hung directly on said crank or eccentric and the
40 lower arm of which is connected with the plunger, a pivoted treadle lever, and a link
45 connecting the upper arm of said lever with the toggle, substantially as described.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

CHARLES F. WURSTER.

Witnesses:

WILLIAM BAILEY,
FRANK CRAVEN.