

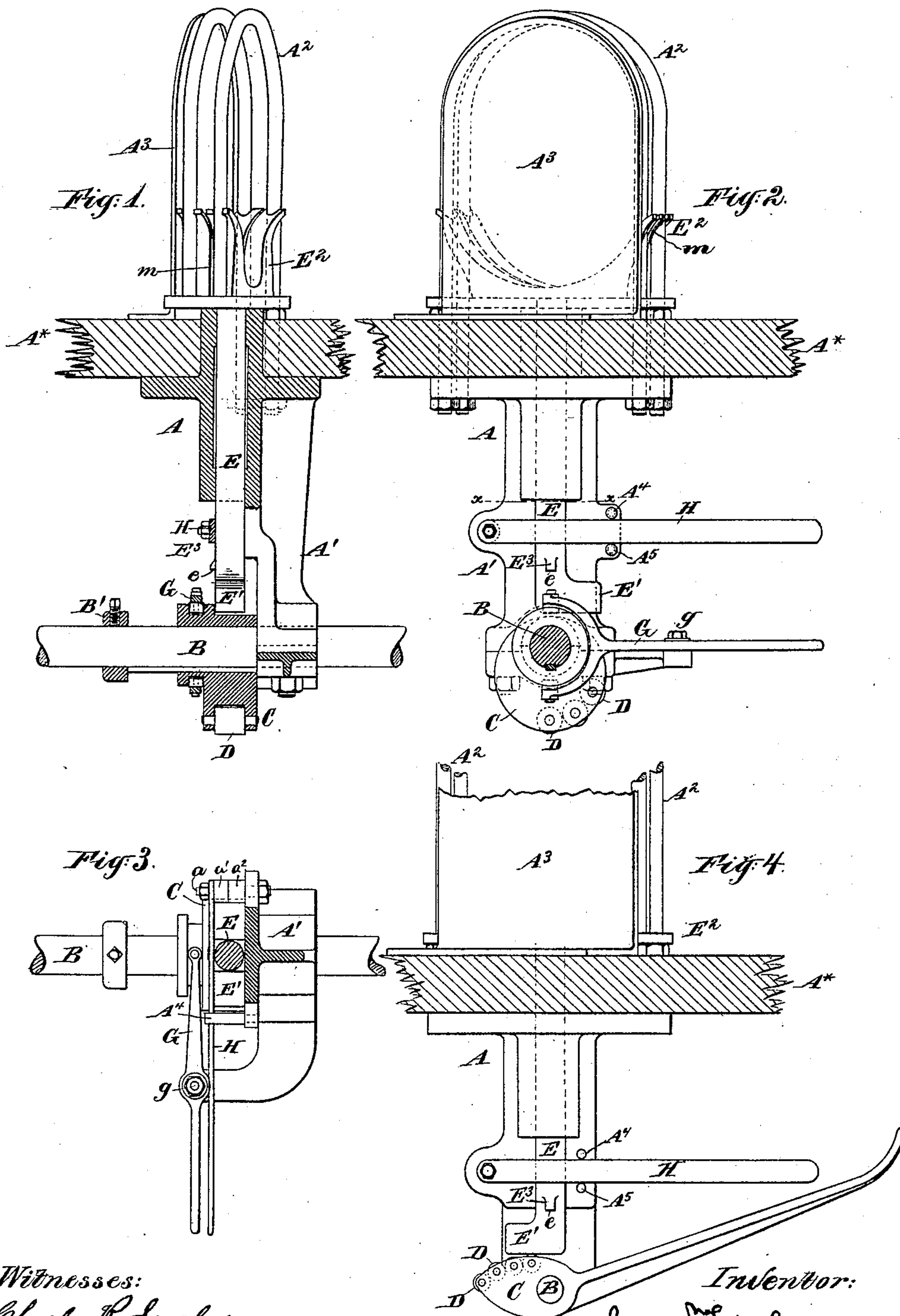
(No Model.)

L. ZIEGLER.

# MACHINE FOR BUNDLING KINDLING WOOD.

No. 389,996.

Patented Sept. 25, 1888.



Witnesses:  
Charles R. Searle,  
M. F. Boyle.

Inventor:  
 Louis Liegler  
 by his attorney  
 Thomas Drew Nelson



# UNITED STATES PATENT OFFICE.

LOUIS ZIEGLER, OF BROOKLYN, NEW YORK.

## MACHINE FOR BUNDLING KINDLING-WOOD.

SPECIFICATION forming part of Letters Patent No. 389,996, dated September 25, 1888.

Application filed April 27, 1888. Serial No. 272,037. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS ZIEGLER, of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Machines for Bundling Kindling-Wood; of which the following is a specification.

I will describe the kindling-wood as placed in the machine by hand, being picked up from a bench or platform on which it is received from a drying-kiln, and the tying as being effected by a tarred cord or rope yarn; but these points may be varied.

The invention relates to the compressing means and to means for holding the cradle in the depressed or raised position for any required period while the driving shaft continues to run.

My improved mechanism is simple and peculiarly adapted to this work where there are many machines closely compacted together along a bench and compressing with great force wood of irregular forms and sizes and bundled in masses of varying tightness, with chips and other loose material liable to break or derange any complicated machine.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a vertical section, partly in front elevation; and Fig. 2 is an end view, partly in section. Fig. 3 is a horizontal section on the line  $x x$  in Fig. 2. Fig. 4 is an end view showing a modification adapted for working by hand.

Similar letters of reference represent corresponding parts in all the figures where they occur.

A is the fixed frame-work, of cast-iron or other suitable material. Certain portions of it will be designated, when necessary, by additional marks, as  $A'$   $A^2$ , &c. The machines are mounted on a bench,  $A^*$ , and are arranged as nearly together as the boys can conveniently work.

In Figs. 1, 2, and 3, B is a shaft extending along the whole line of machines, revolved by a steam-engine or other suitable power, and supported at each machine by a stout arm,  $A'$ ,

extending down for the purpose. A description of one machine will suffice for all.

C is an eccentric, feathered on the shaft B, so that it is free to be shifted axially while it is compelled to turn therewith.

D are rollers, mounted in cavities provided on the full side of the eccentric C. They serve to roll against the surface which is presented thereto, and thus reduce what might otherwise be severe friction.

E is a slide, arranged to move vertically in the framing, in which it is rigidly guided. It is equipped at its base with a foot,  $E'$ , and at its top with a cradle,  $E^2$ , presenting the proper semi-cylindrical cavity to match the lower half of a bundle of kindling-wood and the proper recess,  $m$ , to receive the string. The cradle is properly formed to take hold of and be guided by the two bent rods  $A^2$ , which are arranged side by side to shape the upper half of the bundle. The irregular but strong motion induced by the action of the rollers D against the under surface of the foot  $E'$  raises the cradle  $E^2$  and compresses the kindling-wood.

$A^3$  is a plate presenting a plane face to perform the ordinary function of gaging the place for the ends of the kindling-wood as it is piled in.

G is a lever, pivoted to the fixed framing at  $g$ , and arranged to be conveniently operated by the hand or foot of the attendant to shift the eccentric C endwise. When it is thrown in one direction (the left in Fig. 1) until it strikes the collar  $B'$ , it revolves idly. It is set in this position while the attendant supplies kindling-wood to the cradle, loosely and roughly filling it. Now the attendant, acting on the lever G, urges the eccentric C to the right in Fig. 1. At the first extreme depression of the eccentric it moves under the foot  $E'$ . Next its rotation raises the latter and compresses the wood strongly.

H is an arm, secured to the framing A by a bolt,  $a$ , equipped with means, as two thick rubber washers,  $a'$   $a^2$ , for making its hold elastic. It extends across the front of the slide E, and is held between two horizontal pins,  $A^4$   $A^5$ , set in the frame. On the front face of the slide E is a beveled projection,  $E^3$ , presenting a square offset on its under side, as indicated by  $e$ . These parts are arranged as shown, so that the elevation of the slide E and its attach-



ments, by the rotation of the eccentric C, carries the projection  $E^3$  up a little past the spring H, which yields forward to allow its passage, and then springs back under the offset  $e$ . When  
 5 the eccentric C descends, it is moved endwise by the attendant to bring it out of engagement. It leaves the slide and its attachments supported on the spring-arm H. In this condition of the parts the attendant ties the cord, on  
 10 completing which he moves the spring-arm H forward. This disengages it from the offset  $e$  and the slide E and its attachments drop. The bundle is now removed and the piling in of the kindling-wood for another bundle is com-  
 15 menced.

Fig. 4 shows a form of the invention adapted for use without power, deriving the whole force for compressing the wood from the action of the foot of the attendant on a conveniently-  
 20 arranged lever. This lever induces a rocking instead of a continuous rotary motion of the eccentric. Except in the limited extent of the rotatory motion, the action is similar to that of the eccentric in the machine first shown. The  
 25 eccentric works on the underside of the superimposed piece  $E'$ , and the friction is reduced by the rollers, and the cradle when lifted may be held up by the spring-arm H and released at leisure by drawing it out of engagement  
 30 with the offset  $e$  in the same manner as in the power-machine.

Further modifications may be made without departing from the principle or sacrificing the advantages of the invention. The short arm  
 35  $A'$ , on which the spring-arm H is elastically pivoted, may be longer, and the bolt  $a$  may then be correspondingly farther from the slide E.

Parts of the invention may be used without  
 40 the whole. I can dispense with the rollers D and allow the eccentric C to act directly with

more friction and abrasion; but I prefer the whole, as shown.

I claim as my invention—

1. In a machine for bundling kindling-wood, 45 the eccentric C and means, as the lever G, for moving it axially on the continuously-revolving shaft B, in combination with the cradle  $E^2$ , slide E, and foot  $E'$ , operated thereby, and with the framing A and bent rods  $A^2$ , arranged 50 for joint operation, substantially as herein specified.

2. In a machine for bundling kindling-wood, the spring-arm H, supported, as shown, in combination with the slide E, having the off- 55 set  $E^3$ , and carrying the cradle  $E^2$ , and with the eccentric C, operating means B, and framing A, with its bent rods  $A^2$ , arranged for joint operation, substantially as herein specified. 60

3. In a machine for bundling kindling wood, the eccentric C, feathered on the shaft B, in combination with the latter, and with means, as the lever G, for shifting the eccentric, and with the rollers D, arranged to serve rela- 65 tively to each other and to the foot  $E'$ , slide E, and cradle  $E^2$ , substantially as herein specified.

4. The machine described, having the framing A  $A'$   $A^2$   $A^3$ , slide E, with its foot  $E'$ , cra- 70 dle  $E^2$ , and offset  $E^3$ , spring-arm H, supported as shown, operating-shaft B, and eccentric C, all combined and arranged for joint operation, as herein specified.

In testimony whereof I have hereunto set 75 my hand, at the city of Brooklyn, Kings county, this 19th day of April, 1888, in the presence of two subscribing witnesses.

LOUIS ZIEGLER.

Witnesses:

RICHARD DARN,  
 A. BAUMGARTEN.