No. 880,935. PATENTED MAR. 3, 1908.

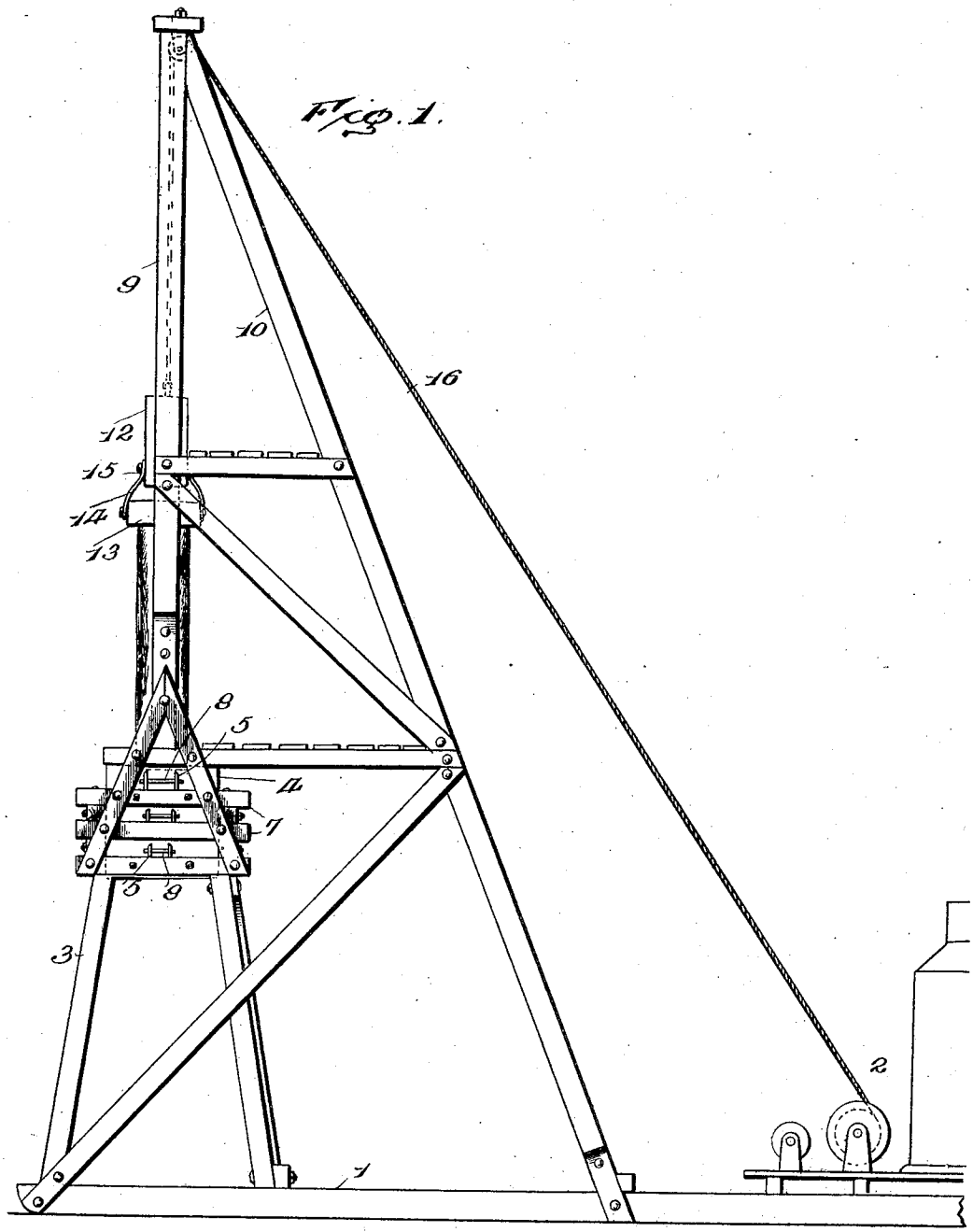
C. C. TATE.

TIE CUTTING MACHINE.

APPLICATION FILED AUG. 28, 1907.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
John A. Murphy.
L. W. Koch

Inventor
Charles Clayton Tate

By

Attorney

THE KORRIS PETERS CO., WASHINGTON, D. C.

No. 880,935. PATENTED MAR. 3, 1908.

C. C. TATE.

TIE CUTTING MACHINE.

APPLICATION FILED AUG. 28, 1907.

2 SHEETS—SHEET 2.

Fig. 2.

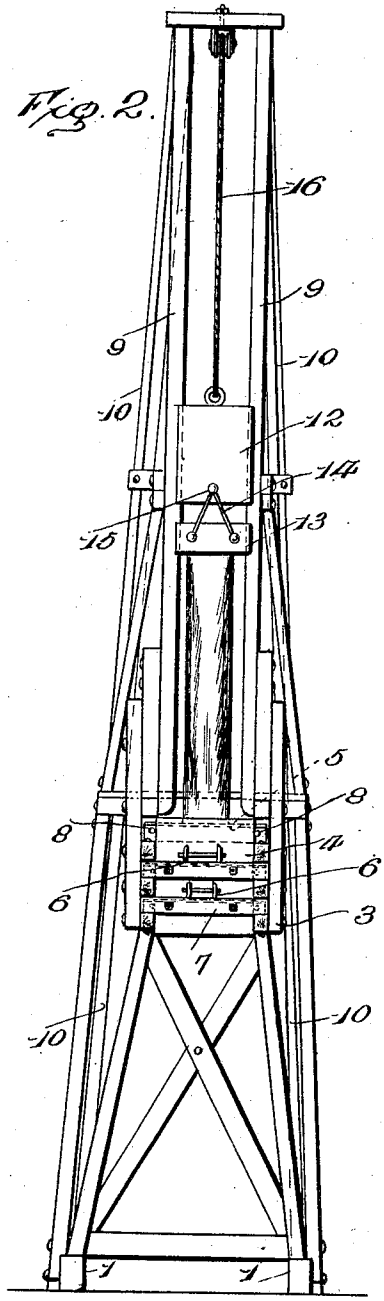


Fig. 3.

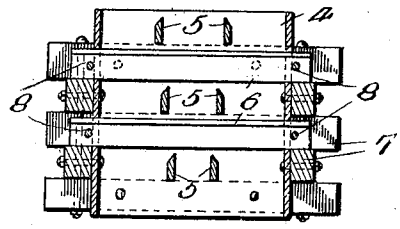


Fig. 4.

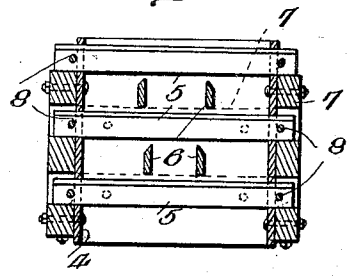
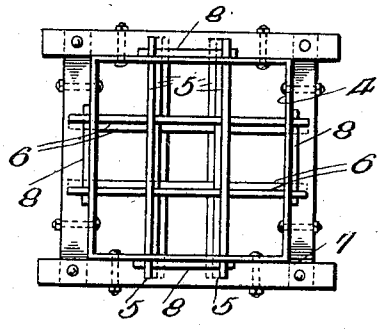


Fig. 5.



Witnesses
John A. Murphy.
J. N. Kolb.

Inventor
Charles Clayton Tate

By

Attorney

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES CLAYTON TATE, OF BOGALUSA, LOUISIANA.

TIE-CUTTING MACHINE.

No. 880,935. Specification of Letters Patent. Patented March 3, 1908.

Application filed August 28, 1907. Serial No. 390,548.

To all whom it may concern:

Be it known that I, CHARLES CLAYTON TATE, of Bogalusa, in the parish of Washington and State of Louisiana, have invented certain new and useful Improvements in Tie-Cutting Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The primary object of this invention is to provide a simple and highly efficient machine for cutting or shaving railroad ties, and wherein the cutting knives while firmly secured when in use may be readily removed to be sharpened or replaced.

A further object is to provide a machine of this character which will be portable and hence capable of being easily moved from place to place.

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation. Fig. 2 is a front end view. Figs. 3 and 4 are enlarged sectional views showing the knives and their frames or casings. Fig. 5 is a plan view thereof.

Referring to the drawings, 1 designates the base of the frame which comprises two corresponding runners, suitably braced together and forming a support for the engine or other motor conventionally indicated at 2. At the front end of this base is a frame 3 suitably braced. This frame supports a rectangular metal casing 4 which is bolted thereto.

5 and 6 designate the cutting knives, the former consisting of three sets of knives and the latter of two sets of knives. These knives are arranged in pairs, and the lower pair or pairs of each set are positioned slightly closer together than the knives above them. Each set of knives is located at right angles to the other set, but in each instance the cutting edges are at the top. Looking from above, as in Fig. 5, it will be seen that the square formed by the space between the knives of the two sets is of gradually decreasing width. These knives are removably located within the rectangular casing 4, being passed through corresponding openings in the side walls thereof. Short sections of timber, constituting studs or fillers 7, are placed outside each wall of the casing, with their ends overlapping, such fillers forming supports or braces for the knives. Preferably the latter are held as against longitudinal displacement by stop pins or bolts 8 passed through openings therein. The lowermost fillers rest upon cap-pieces of the frame 3.

Superposed on frame 3 are guides 9 which are additionally strengthened by braces 10 secured to base 1. These guides form a way for the hammer 12 and cap 13 removably secured thereto in the ordinary manner by links 14 and a bolt 15. The hammer and cap are raised to the upper end of the guides by a cable 16 operated by the motor 2.

In practice, the stick of timber of the proper length is hoisted and placed between the guides and the hammer and cap are lowered together. The cap is detached from the hammer by removing the connecting bolt 15 and thereafter the cap holds the timber true both with respect to the guides and knives. The timber is then driven downwardly until its upper end is within about a foot of the top pair of knives of the set 5. Thereupon the bolt 15 is re-inserted into the hammer so as to again attach the cap thereto, and the hammer and cap are hoisted to the top of the guides to permit another piece of timber to be placed perpendicularly on end against the first timber, and the operation is thereupon continued as before.

If the timber is to be given a square formation then there should be the same number of pairs of knives in each set, but as railroad ties are of greater width than thickness, a lesser number of knives is employed in one set than in the other. It is immaterial, however, how many knives are used in each set, but it is essential, to the successful operation of the machine, that there be a plurality of pairs of knives so that the cutting and reduction of the timbers will be gradually effected, the final shaping being effected by the last or bottom pair of knives of each set thereof.

I claim as my invention:

1. A tie-cutting machine comprising two sets of horizontally disposed knives located at right angles to each other, a casing in which said knives are removably located, a support for said casing, guides located above said knives, and a hammer movable in said guides and designed to force timbers through the space formed between the knives of the two sets thereof.

2. A tie-cutting machine comprising two sets of horizontally disposed knives located at right angles to each other, a casing in

which said knives are removably located, a support for said casing, guides located above said knives, a hammer movable in said guides and designed to force timbers through the space formed between the knives of the two sets thereof, a cap also movable in said guides and designed to rest on the end of a timber, and means detachably connecting said cap to said hammer.

3. In a tie-forming machine, a rectangular casing, two sets of knives arranged at right angles to each other, each set of knives being composed of a plurality of pairs of knives located different distances apart, said knives being extended through the walls of said casing, a frame supporting said casing, rests for said knives at the outside of said casing, and means for forcing a timber through the space between the sets of knives.

4. A portable tie cutting machine comprising a base, a motor thereon, a frame mounted on said base, guides above said frame, a casing supported by said frame, two sets of knives arranged at right angles to each other, each set of knives being composed of a plurality of pairs of knives located at different distances apart, fillers supported by said frame and resting upon each other, said fillers forming bearings for the ends of the knives, a hammer movable in said guides and designed to be operated by said motor, and a cap also movable in said guides for resting on the timbers which are forced by said hammer through the space between said knives, and means detachably connecting said cap to said hammer.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

CHARLES CLAYTON TATE.

Witnesses:
CHAS. E. PETRIE,
J. F. JOHNSON.