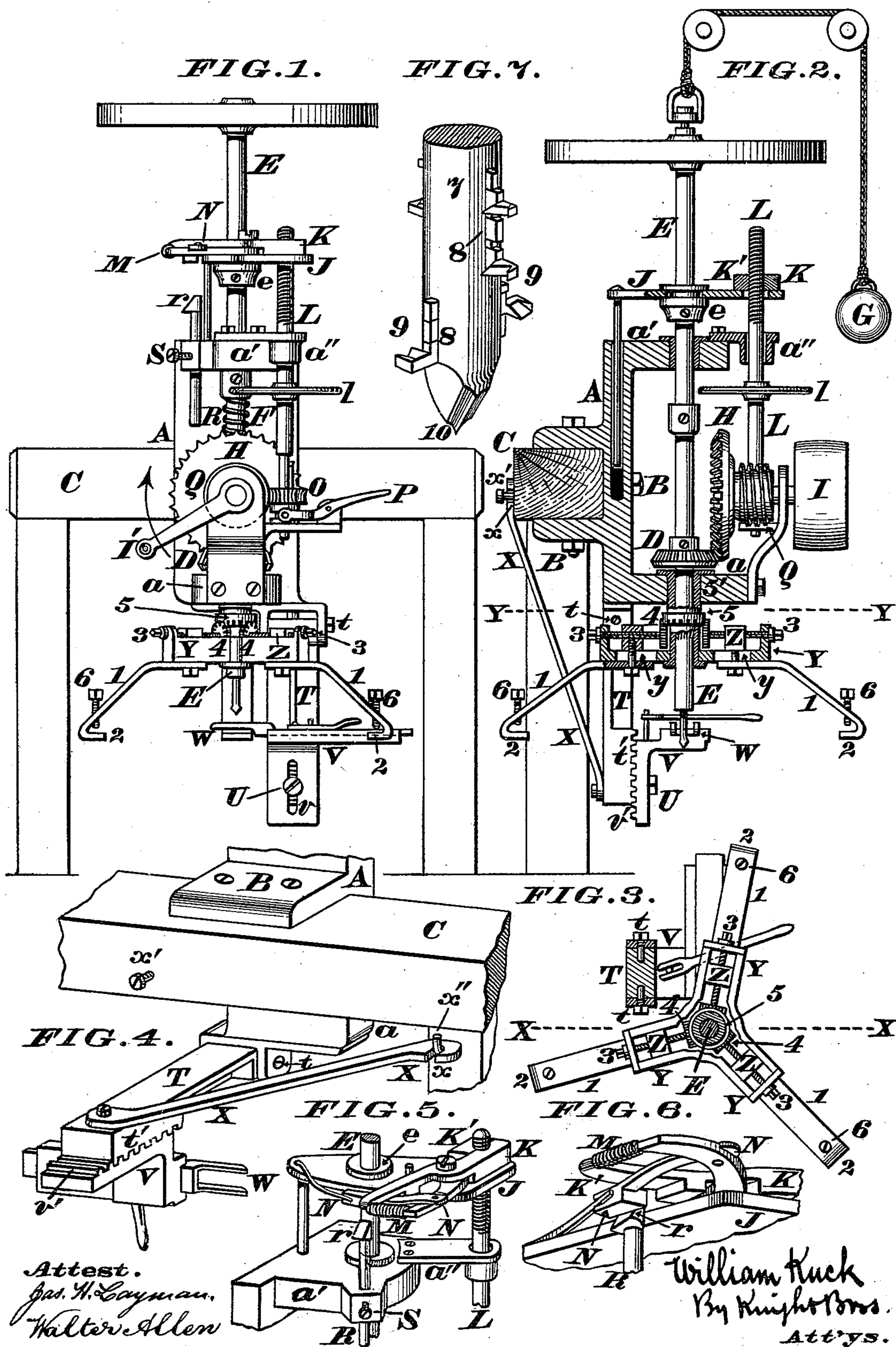


W. KUCK.
Metal Drilling-Machines.
 No. 148,716. Patented March 17, 1874.



Attest.
 Jas. H. Gayman,
 Walter Allen

William Kuck
 By Knight Bros.
 Att'ys.

UNITED STATES PATENT OFFICE.

WILLIAM KUCK, OF CINCINNATI, OHIO.

IMPROVEMENT IN METAL-DRILLING MACHINES.

Specification forming part of Letters Patent No. 148,716, dated March 17, 1874; application filed October 13, 1873.

To all whom it may concern:

Be it known that I, WILLIAM KUCK, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Drilling and Boring Machine, of which the following is a specification:

My machine is designed especially for the use of wheelwrights, and comprises an arrangement for drilling wheel-tires, &c., the drill being, by the continuous motion of the machine, automatically fed into and released from the work; also, means by which the machine is adapted to be readily converted into a hub-boring apparatus.

In the accompanying drawings, Figure 1 is a front view of my machine in condition for drilling, the clamp being engaged on the feed-screw. Fig. 2 is a section in the line X X. Fig. 3 is a section in the line Y Y. Fig. 4 is a rear view of the drill-rest in its retracted or non-effective condition. Figs. 5 and 6 represent my feeding device in its clamped and released conditions, respectively. Fig. 7 represents a form of boring-bit used by me.

Of the above illustrations, Fig. 6 is drawn on an enlarged scale.

I provide, of the represented or any suitable form, a cast-iron frame, A a', which may be secured by bolts B to a beam, C, or other stationary object of convenient height. The horizontal portions a a' of the said frame are pierced vertically, the longer one for the tubular shank 5' of a contrate, 5, and the upper one for the slidable and rotary drill-shaft E, which, having been fed downward the desired distance, is automatically released, as presently explained, and upon being so released is retracted by means of a spring, F, or weight G. Feathered or otherwise secured to shaft E, so as to revolve therewith while permitting a sliding motion of said shaft, is a bevel-pinion, D. Gearing with pinion D is a bevel-wheel, H, having customary driving-pulley I or winch I'. J is a yoke, which, engaging over a collar, e, upon the drill-shaft, is capable of being connected by clamp-nut K K' with feed-screw L having wheel l, by which the feeding may be effected by the hand of the operator; but, in order to enable the feeding to be accomplished automatically, when desired, I provide the following instrumentalities: The two jaws K K'

of the clamp-nut are, when at liberty, held apart by a spring, M, and are held in the closed condition by a latch or trigger, N, on jaw K, engaging over a shoulder on jaw K'.

The apparatus is set to have its drill fed automatically, when desired, by the following instrumentalities: Revolving with and slidable upon the feed screw-shaft L is a pinion, O, which, by the motion of a lever, P, can be brought into gear with worm Q upon the driving-shaft, and when thus so brought in gear said feed-shaft has a slow rotation imparted to it automatically. The shaft L rotates freely within the yoke j and bracket a'', and engages with nothing but the above-described separable nut K K'. A rod, R, surmounted by a beveled head, r, is adjusted to any desired height, and held thereto by means of screw S, so that as the yoke J descends and carries the drill-shaft with it, the trigger N, impinging against head r, operates to release the screw L by throwing open the clamp-nut K K', and enables the weight or spring to elevate the drill-shaft, and to thus automatically release the drill.

It is manifest that the period of automatic release and retraction of the drill may be varied at will by simply shifting the rod R vertically, and maintaining it at any desired position by screw S.

My rest for supporting wagon-tires and like pieces of metal to be drilled is composed of a post, r, hinged to the frame at t, and having attached to it, by bolt U, a bracket, V. Both post and bracket are corrugated, t' v', or their opposing surfaces, and the bracket itself is slotted at v, so that by slackening the bolt the bracket can be raised or lowered, and be secured to the new position by again tightening the bolt. The rest proper is a prong, W, which may, if desired, be capacitated for sliding, as shown. The said rest is held firmly in position by brace X pivoted to its rear side near the lower end, and having its notched upper end x engaged on a pin, x', upon the rear side of the frame. When the rest is not wanted, the brace X may be disengaged, and the rest being folded backward may be secured in that position by being engaged over a pin, x'', as shown in Fig. 4.

In order to adapt the apparatus for boring

hubs, I attach to the lower part of projection *a* a spider, Y, whose three arms have slots *y*, to take sliding blocks *z*; from which project as many dogs, 1, having hooked extremities 2. Tapped within blocks Z are screws 3, by which said blocks and their attached dogs can be made to approach or recede, so as to fit any wheel, and this approximation and recession are made simultaneous and equal by means of pinions 4 on screws engaging in a stationary contrate, 5, on frame. The screws 6 may be provided to more securely hold the wheel in the dogs.

The boring-bit is a metallic rod, 7, having transverse slots 8 to receive bits or cutters 9 for forming any desired eye or bore in the wheel-hub. The advancing end or point of said rod is armed with a penetrating or center bit, 10.

I claim as new and of my invention—

1. In combination with drill-shaft E *e*, yoke J, and feed-screw L, the clamp-nut K K' M, trigger N, pinion O, lever P, worm Q, and adjustable releaser R *r*, the whole being arranged and adapted to operate in the manner stated.

2. The arrangement of hinged and corrugated post T *t t'*, slotted and corrugated bracket V *v v'*, bolt U, rest proper W, brace X *x*, and pins *x' x''*, composing my adjustable and unshipping rest.

In testimony of which invention I hereunto set my hand.

WILLIAM KUCK.

Attest:

GEO. H. KNIGHT,
SAMUEL MITCHELL.