No. 613,969. Patented Nov. 8, 1898.

J. M. CERTAIN.

RAILROAD NUT WRENCH.

(Application filed Feb. 11, 1898.)

(No Model.)

Fig. 1.

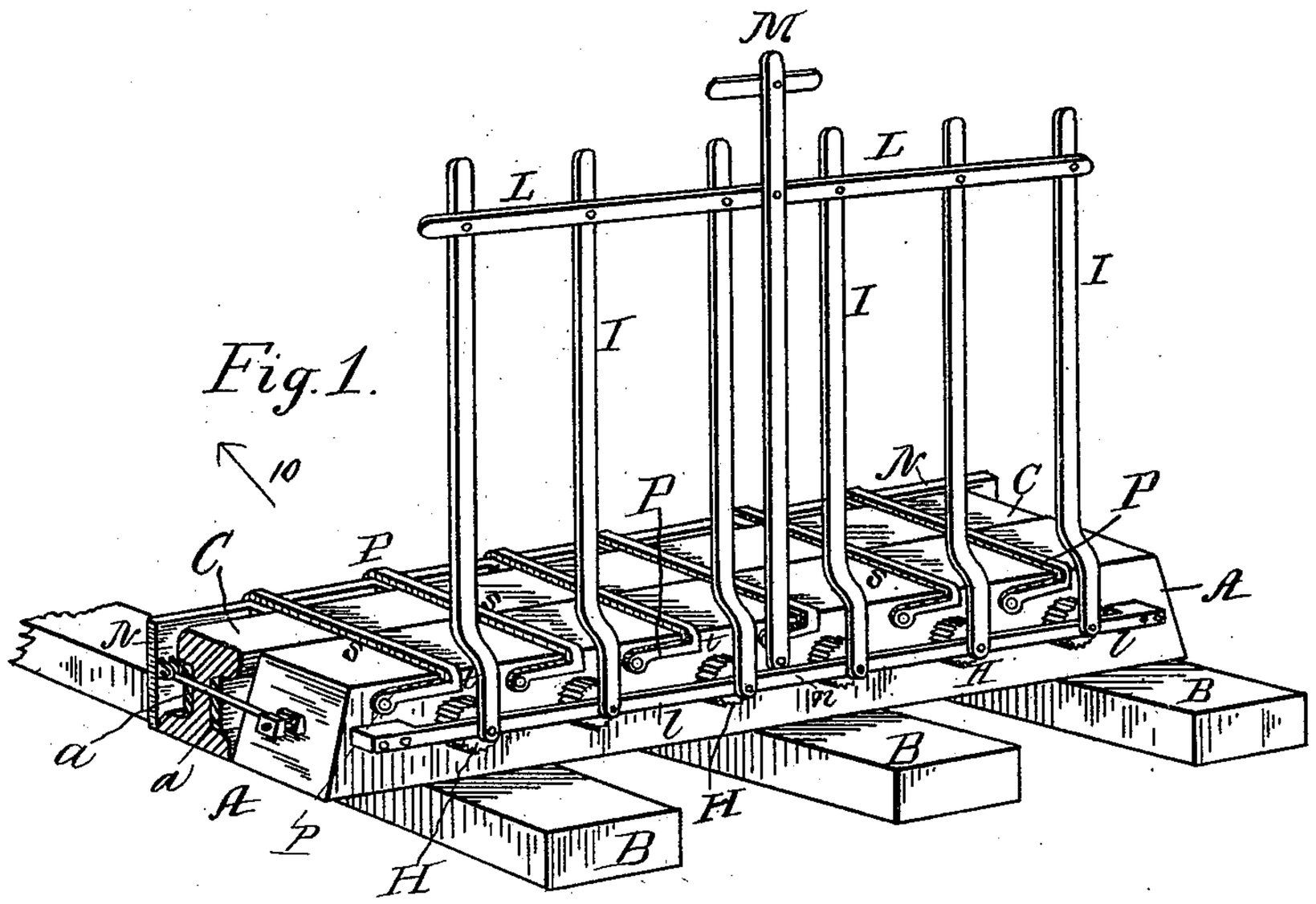


Fig. 2.

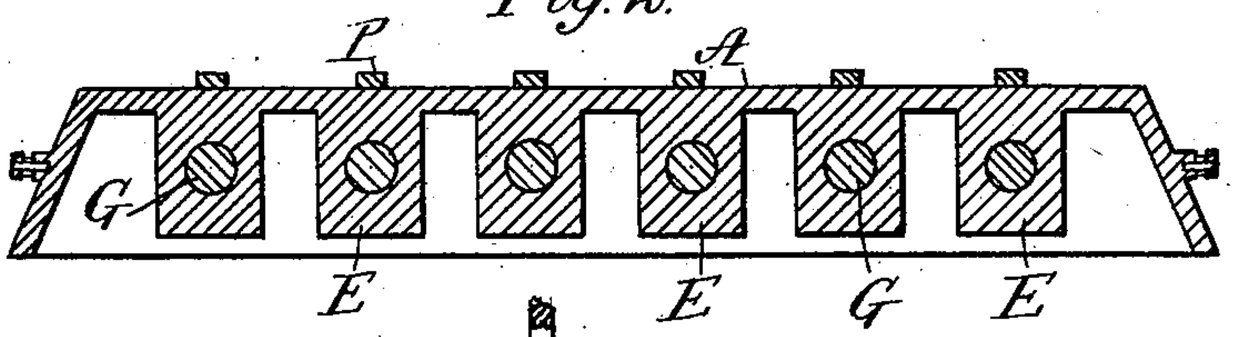


Fig. 3.

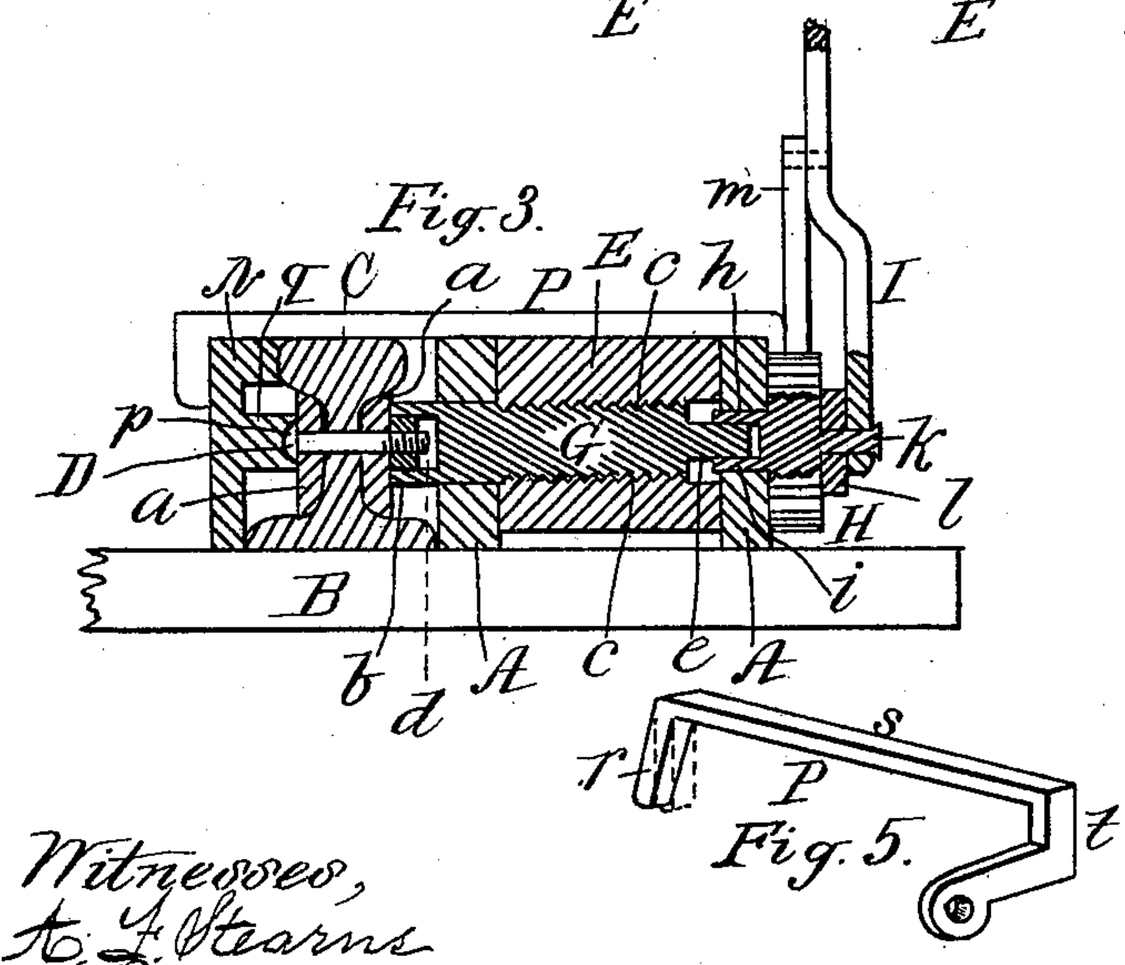
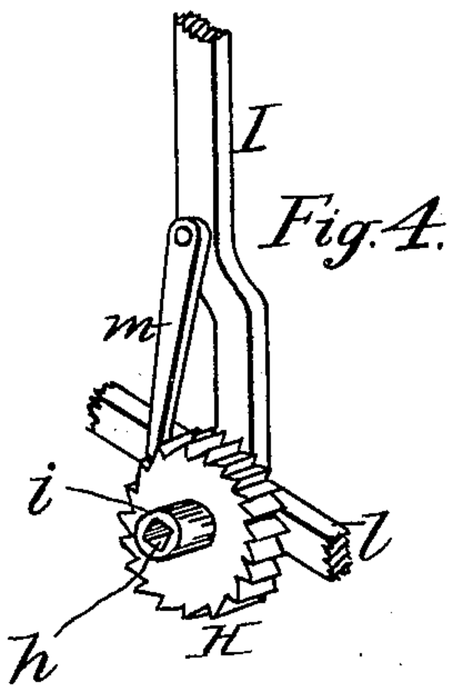


Fig. 5.

Fig. 4.



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UNITED STATES PATENT OFFICE.

JERRY M. CERTAIN, OF PORT TAMPA, FLORIDA.

RAILROAD NUT-WRENCH.

SPECIFICATION forming part of Letters Patent No. 613,969, dated November 8, 1898.

Application filed February 11, 1898. Serial No. 669,918. (No model.)

To all whom it may concern:

Be it known that I, JERRY M. CERTAIN, of Port Tampa city, Hillsborough county, Florida, have invented certain Improvements in Railroad Nut-Wrenches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a group of connected and simultaneously-operated nut-wrenches constructed in accordance with my invention, certain pawls being omitted. Fig. 2 is a central longitudinal section through the same, looking in the direction of the arrow 10, Fig. 1. Fig. 3 is a central transverse section through one of the nut-wrenches and the frame or box which incloses the major portion of the same. Fig. 4 represents a view of one of its ratchets with its hand-operated lever and pawl; Fig. 5, a view of one of my improved clamps for keeping the holder of the bolt-heads in an unyielding position.

My invention relates particularly to that class of devices known in the art as "railroad nut-wrenches;" and this invention consists in the combination, with a group of such devices when connected together so as to be simultaneously operated, of a series of socket-ratchets, a series of screw-thread and socket cylinders corresponding in number thereto and turned thereby, a like series of projections extending down from the top of and integral with the supporting-frame and provided with interior screw-threads for the reception of the screw-thread cylinders; and this invention consists also in an improvement in the construction of said frame, and, furthermore, consists in an improved bolt-head holder and a novel clamp for keeping the latter rigidly in contact with said bolt-heads, the construction of the aforesaid features being hereinafter fully described and specifically claimed.

In the said drawings, A represents a long box or frame, preferably of metal, having parallel sides, its top covered and its bottom open and intended to rest on the cross-ties B, outside of the rails C, where their ends are to be held together by screw-bolts D, passing through a pair of fish-plates *a a*, the location of the nuts *b b*, which are to be turned over the screw-threads of the bolts, being accessible from the outside of the track, the number of nuts here shown to be simultaneously operated being six. Formed integral with the closed top of said box and extending down therefrom at intervals are a series of six thick projections E, whose interiors are centrally provided with female screw-threads *c*, Fig. 3, for the reception of corresponding threads cut on the outside of cylinders G, extending transversely between the two sides of the box, the end of each cylinder adjacent to the rail C being provided with a socket *d* of the size and shape of the nut *b*, over which it snugly fits, said socket being deeper than the thickness of the nut to allow of its movement thereover. The opposite end of the cylinder terminates in a reduced portion or stem *e*, which fits into a deep socket *h*, preferably square in cross-section, formed within the contiguous boss *i*, projecting from a ratchet H, which boss has its bearing in and extends through the outer side of the box, said ratchet having extending from its front face a projection *k*, which has its bearing in a long cleat *l*, secured to the outside of the box, said cleat being shown in Figs. 1, 3, and 4. To this projection *k*, outside of the cleat, is secured the lower end of a handle I, bent inwardly a short distance above and having pivoted thereto a pawl *m*, which engages with the ratchet-teeth. (See Fig. 4.)

The six handles are pivoted near their tops to a common longitudinal connecting-bar L, and they are manipulated in either direction by a centrally-located lever M, pivoted to said bar a suitable distance below its top and at its bottom to the outside of the box at *n*. By the simultaneous movement of the handles I the several cylinders G, through the connections previously described, are rotated and at the same time moved longitudinally in their bearings, the sockets *d* keeping their grip on the nuts within and causing them to follow whether turning on to tighten or turning out to loosen their position relative to the fish-plate, for in advancing to tighten the nuts the stems *e* of the cylinders G are also free to move in a longitudinal direction outwardly in the ratchet-sockets *h* and the opposite or socket ends *d* of the cylinders are free to move longitudinally forward in their bearings and retain their grip on the nuts,

causing them to follow, while in loosening them the parts move in the opposite direction. The screw-threads in the projections E and those on the cylinders G prevent any slip of the latter in the direction they are moving and also assist the pawls *m* in their functions. The heads *p* of the screw-bolts are kept immovably against their fish-plate by a series of socket-studs *q* projecting inside of a long bar or holder N, which may be hinged to the contiguous side of the box, at each end thereof, Fig. 1, and said holder at points in line above the studs may be of increased thickness, so as to abut firmly against the top of the rail, this increased thickness being unnecessary at its bottom, as the holder comes against the projecting foot of the rail. Said holder N is prevented from bulging outwardly by clamps P, hinged to the front of the box and having arms *r s t*, Figs. 1 and 5, and the arm *r* of each clamp may be slightly inclined outwardly from the portion *s* (instead of at right angles thereto, as seen in dotted lines, Fig. 5) to insure its wedging against the outside of the holder at all times, thus compensating for slight variations in its thickness or position, in which case any space intervening between its lower end and the holder may be occupied by any convenient article which may be inserted and wedged therein.

I claim—

1. In a railroad nut-turning device, composed of a series of wrenches whose handles are connected and simultaneously operated, the combination with the supporting-frame, of a series of socket-cylinders adapted to receive and turn the nuts and a series of socket-ratchets corresponding in number thereto, adapted to rotate said cylinders, whereby all the nuts of the fish-plates are simultaneously either tightened or loosened at a single operation, substantially as described.

2. The combination in a railroad nut-turning device, of a supporting-frame having a series of integral projections arranged at intervals apart, and whose interiors are provided with screw-threads, a series of screw-thread cylinders provided at one end with sockets to fit over the contiguous nuts of the screw-bolts, and having said end of each located and free to rotate and move longitudinally in its bearing in the inner side of the box or frame, and with a stem at its opposite end, a series of ratchets provided with sockets which form bearings for the stems of the cylinders, and in which sockets they are capable of movement back and forth, while rotating the cylinders, a series of ratchets and pawls and their handles, a common connecting-bar to which they are pivoted, a main, centrally-located operating-lever pivoted thereto for simultaneously actuating said ratchet-handles, &c., a bolt-head holder and clamps for keeping the latter up to its work, constructed to operate as set forth.

3. In a railroad nut-wrench, the combination with the supporting-frame A of a series of integral projections E provided with interior screw-threads, a series of screw-thread cylinders G and a series of ratchets H, constructed, arranged and adapted to be operated as specified.

Witness my hand this 25th day of January, 1898.

JERRY M. CERTAIN.

In presence of—
WM. B. MIRANDA,
C. W. STEVENS.