

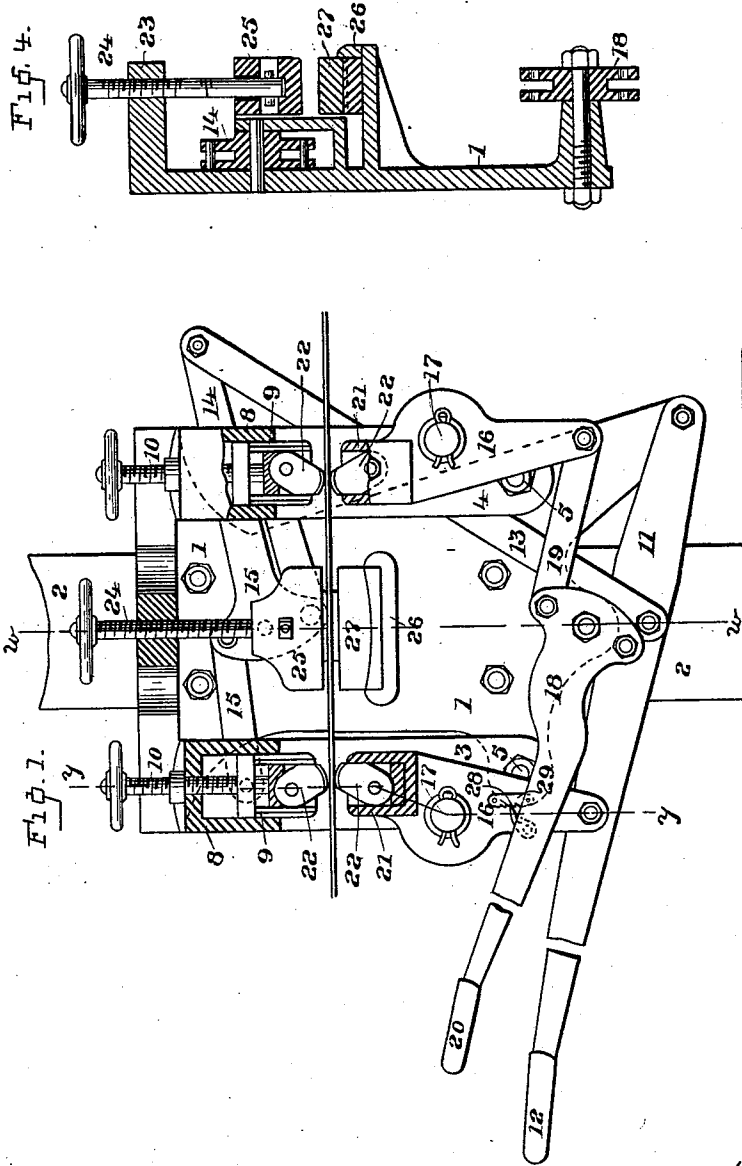
(No Model.)

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E. CHAQUETTE.
MACHINE FOR UPSETTING TIRES.

No. 469,962.

Patented Mar. 1, 1892.



WITNESSES:
A. J. Tanner
E. M. Newman

INVENTOR:
Ephraïme Chaquette
by his atty *J. H. Hubbard*

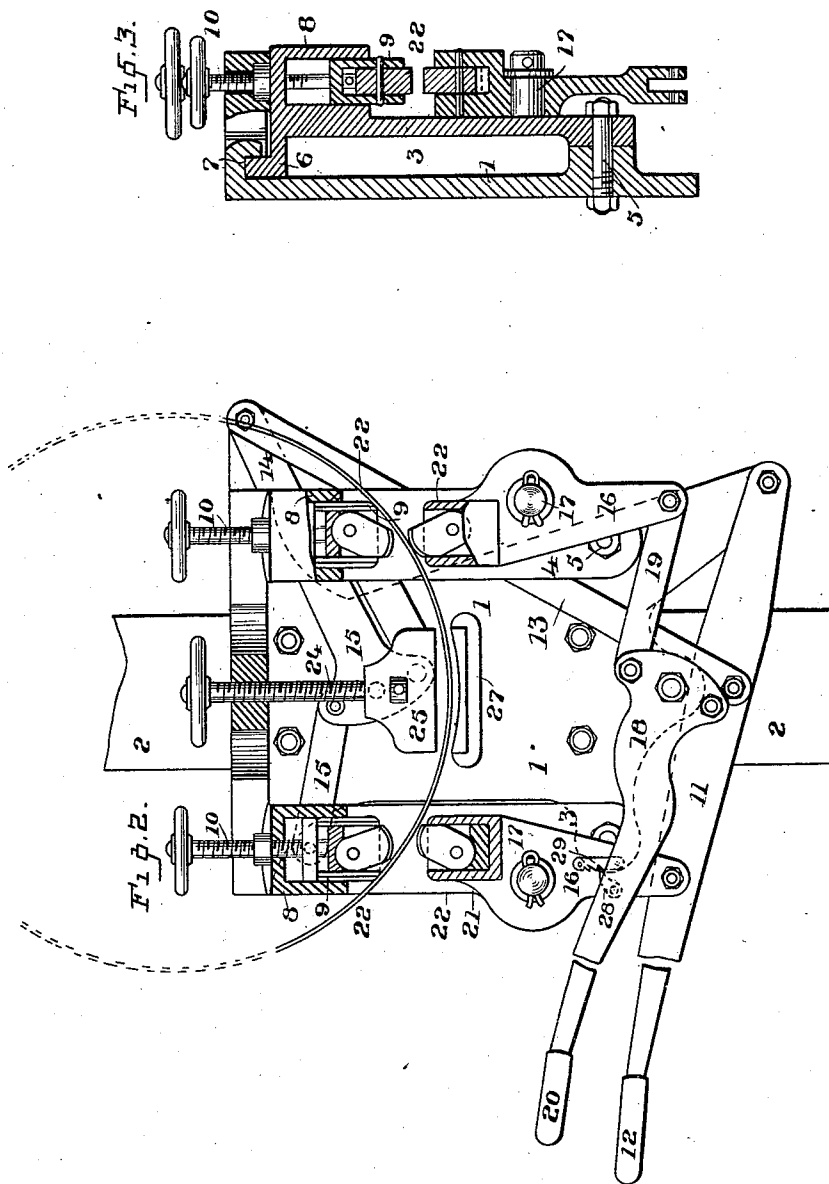
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UNITED STATES PATENT OFFICE.

EPHRAIEM CHAQUETTE, OF SAN FRANCISCO, CALIFORNIA.

MACHINE FOR UPSETTING TIRES.

SPECIFICATION forming part of Letters Patent No. 469,962, dated March 1, 1892.

Application filed December 14, 1891. Serial No. 414,907. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIEM CHAQUETTE, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Machines for Upsetting Tires; 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.

This invention relates to certain new and useful improvements in machines for upsetting wheel tires or axles or strip or bar iron in order to shorten the same. It is the usual practice when a wheel-tire becomes loose after wear to shorten it in refitting, and this is ordinarily done by cutting and rewelding, though various devices for upsetting without resort to cutting have been proposed.

It is the object of my invention to provide a machine of simple construction, but of great power, adapted to operate either on straight work or upon hoops or tires, according to circumstances; and with this end in view my invention consists in the construction and combination of elements presently to be described, and then recited in the claims.

In order that those skilled in the art to which my invention appertains may fully understand its construction and operation, I will describe the same in detail, reference being had to the accompanying drawings, which for a part of this specification, and in which—

Figures 1 and 2 show my machine in front elevation, but operating on different kinds of work. Fig. 3 is a section at line *yy* of Fig. 1, and Fig. 4 a section at line *ww* of Fig. 1.

The base of my machine consists of a heavy iron plate 1, which may be secured to any fixed object, as the post 2. (Shown in Figs. 1 and 2.)

3 and 4 are levers, one of which appears in section at Fig. 3, and 5 are heavy bolts on which said levers are fulcrumed, as shown at said sectional figure. An extension 6 from each lever is guided in a recess 7 in the base-plate. Each lever at its top is furnished with a housing 8, in which is seated and adapted to slide a head or block 9, movable by means of a screw 10, having a suitable hand-wheel and threaded through the top of the housing.

To the lower end of plate 1 and at one corner thereof is fulcrumed a heavy lever 11, of the second class, having at its outer end a pedal 12 for the foot of the operator. A long link 13 is pivoted near the center of the lever, and its other end is similarly secured to the extremity of a rock-lever 14, fulcrumed near the upper center of the plate 1, as seen in dotted lines at Fig. 1. Two links 15 are pivoted to the lever 14, one on each side of its fulcrum, so as to cause the latter to operate upon them after the manner of a double bell-crank. The outer ends of these links are pivoted to the upper ends of the levers 3 and 4, so as to rock them toward each other when the lever 11 is depressed and to restore them to the vertical when said lever is returned to its position, as shown in the two elevations. Upon each of the levers 3 and 4 a lever 16 is fulcrumed by means of a heavy bolt or stud 17. These levers 16 have a slight swinging motion independent of the levers 3 and 4, which motion is derived from a lever 18, fulcrumed to the plate and connected to the levers 16 by links 19 in like manner as the lever 14 is connected to the levers 3 and 4. This lever 18 has also a tread or pedal 20. The levers 16 have boxes 21, in each of which, as also in the slide-blocks 9, is pivoted an eccentric grasping-pawl 22, whose purpose will presently be described. In a bracket 23, which projects outward from the plate 1, is a screw-threaded bearing for the support of a screw 24, whose lower end carries a head or jaw 25 on a swivel-joint. This is designed to co-operate with a fixed jaw 26, whose upper face is curved, as seen at the elevations, and upon which, as seen at Fig. 1, rests a jaw-block 27 for use in connection with straight work. A pawl 28 on the lever 18 co-operates with a short rack 29 on the lever 16 to hold the lever in its depressed position.

The operation of my invention is as follows: Suppose a straight piece of iron is to be upset. The machine, as shown, is prepared to receive it. (See particularly Fig. 1.) The iron is laid on the jaw-block 27 and the complementary jaw 25 screwed down almost into contact with it. By means of the screws 10 the upper pair of the pawls 22 is then moved downward into light contact with the upper surface of the work, the lower pair of pawls en-

gaging it beneath. The lever 18 is then depressed by the foot and held by the rack and pawl, and the movement of this lever turns the levers 16 so that their pawls move upward and outward, very slightly, it is true, but sufficiently to turn both pairs of pawls and give them a firm bite on the surface of the strip or bar to be upset. When thus engaged, the upsetting is effected by depressing the lever 11, which, through link 13, lever 14, and links 15, swings the two main levers 3 and 4 toward each other, whereby a very great endwise pressure is brought to bear on the work between the pawls, and this pressure shortens or compresses or, in the common term, "upsets" the bar or strip. The function of the jaws 25 and 27 is to prevent the work from buckling under the great stress to which it is subjected, and the jaws may be extended toward the levers farther than the drawings show, if desired, so as to leave little or none of the work unsupported. The closing movement of the main levers at the horizontal plane in which the grasping-pawls engage is about five-eighths of an inch, and this of course limits the amount of upset that can be effected by a single operation; but the engagement of the pawls may be renewed and any desired number of independent operations made if greater shortening is desired.

In Fig. 2 the machine is shown as ready to operate on a tire. For this purpose the jaw-block 27 is removed and the central part of the tire to be upset lies between the curved face of 26 and the jaw 25, which, if required, may also be provided with a curved lower face—as, for instance, by securing the block 27 on its lower side. The action of the machine is of course the same whether operating on straight or curved work.

I do not wish to be confined to the details of construction or the precise connections of the levers, since these may be widely varied without departing from the essentials of my invention as recited in the claims.

I claim—

1. In a machine of the character described, a pair of levers provided with grasping devices for holding the work, in combination with a support for the work between the grasping devices and a set of compound levers connected to the first-named levers and adapted to swing them toward the work-support.

2. The combination, with the base, of a pair of levers fulcrumed thereto and having grasping-pawls thereon, a second pair of levers fulcrumed to the first pair and bearing comple-

mentary pawls, the lever 18 and connections for effecting the engagement of both pairs of pawls with the work, and the lever 11 and its connections, whereby the two main levers are operated to effect the upset.

3. The combination, with the base, of the main levers fulcrumed thereto, pawls carried by said levers and adjustable vertically thereon, a second pair of levers, each having a pawl complementary to one of the upper pawls, a work-support between the two main levers in line with the pawls, means, as described, for closing the two pairs of pawls upon the work, and further means for effecting the inward movement of the main levers to effect the upset.

4. The base and the main levers fulcrumed thereto and having each a vertically-adjustable grasping-pawl, in combination with a second pair of levers fulcrumed to the main levers and bearing each a complementary grasping-pawl, compound levers connected to the smaller levers to effect the engagement of the pawls with the work, and other compound levers connected to and adapted to actuate the main levers, substantially as set forth.

5. In a machine of the character described, a pair of levers, each provided with a pair of co-operating grasping devices and fulcrumed to a suitable support, in combination with compound levers connected to said first-named levers and adapted to swing them inward and thereby shorten the distance between the grasping devices, substantially as specified.

6. In a machine as described, a pair of main levers, each bearing a grasping-pawl whose length is oblique to the line of the lever to which it is pivoted, in combination with a second pair of gripping-pawls like the first pair and adapted to co-operate with them; and means, as described, for swinging the main levers toward each other for effecting the upset.

7. The main levers fulcrumed to a suitable base and having thereon the pawls adjustable toward and away from the work, in combination with the secondary levers fulcrumed to the main levers and bearing co-operating grasping-pawls and means connected to the secondary levers for operating them about their respective fulcrums, whereby the initial grasping movement of the pawls is effected.

In testimony whereof I affix my signature in presence of two witnesses.

EPHRAIEM CHAQUETTE.

Witnesses:

SHERMAN H. HUBBARD,
M. C. HINCHCLIFFE.