No. 859,448. PATENTED JULY 9, 1907.

E. GLARNER.

BOLTING MACHINE.

APPLICATION FILED MAR. 25, 1907.

FIG_1_

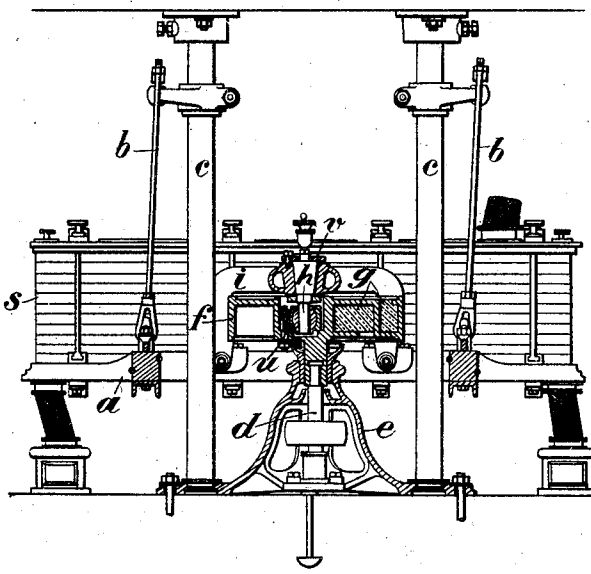
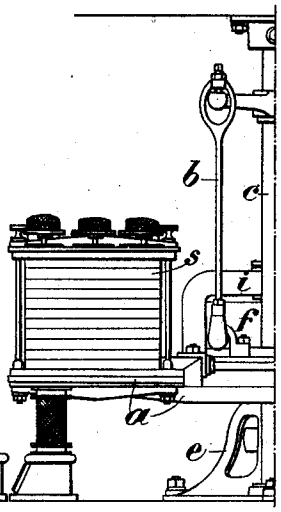


FIG_2_



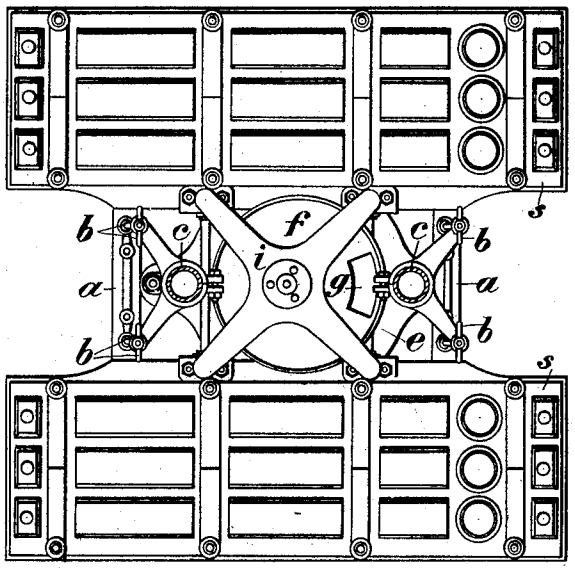


FIG_3_

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EDUARD GLARNER, OF GOSSAU, SWITZERLAND, ASSIGNOR TO THE FIRM OF F. GLARNER, OF GOSSAU, SWITZERLAND.

BOLTING-MACHINE.

No. 859,448. Specification of Letters Patent. Patented July 9, 1907.

Application filed March 25, 1907. Serial No. 364,502.

To all whom it may concern:

Be it known that I, EDUARD GLARNER, a citizen of the Swiss Republic, and a resident of Gossau, canton of St. Gall, Switzerland, have invented new and useful Improvements in Bolting-Machines, of which the following is a clear, full, and exact specification.

This invention relates to twin horizontal bolting machines, in which the equalization of the mass is effected by a single counterpoise. In existing horizontal bolting machines of this kind, in which the counterpoise between the two sets of screens is adapted to move approximately at the center of their height, the driving power is mostly transmitted to the screens by carrying them in box frames, upon which the power acts laterally. The use of such box frames is attended with considerable disadvantage. In the first place with such box frames, the removal and insertion of the screens is effected by sliding them up from, or down into, the box frames, which is inconvenient and troublesome in practice, and also necessitates an exactly horizontal insertion of the screen frames. Then again, access to the inner parts of the machine is considerably interfered with by the box frames.

These faults are completely removed in horizontal bolting machines constructed according to my invention, inasmuch as by the employment of a single compensating weight and by a special mode of constructing the screen and its moving part it is possible to dispense with the frame round the screen. In my new horizontal bolting machine, the driving power is applied through a floor-frame which is placed under all the screens and serves as a platform therefor and which, for this purpose, is provided with a connecting piece, which starting from the floor-frame, is bent at right angles in the form of a stirrup between the two sets of screens so as to locate the pin of the driving crank and the compensating weight in the same horizontal plane of center of gravity as the revolving masses. For the reason that the driving of the screens is effected through a bottom-platform and that a box-like construction is dispensed with, all the screens can be laid free upon the platform, or be lifted from it, and when the screens are removed the interior of the machine is everywhere easily accessible.

The appended drawing illustrates a suitable form of construction in which the platform or bottom-frame is suspended by hangers. The invention is, however, applicable to horizontal bolting machines in which the platform or bottom-frame is supported by stays.

Figure 1 is a vertical section through the middle portion of the floor-frame and the driving mechanism of the machine, one of the sets of screens being shown in elevation. Fig. 2 is a plan of the machine. Fig. 3 shows half the machine in end elevation.

a is the platform or floor-frame, on which the screens *s* are arranged one above another at two points placed symmetrically with respect to the central axis of the machine, and which is suspended so as to be able to oscillate from vertical pillars *c* by means of hangers or rods *b* the length of which is adjustable in the usual way. These suspending rods *b* are attached to the platform *a* inside or between the two sets of screens, thus increasing the accessibility of the screens. The platform *a* with the screens *s* which it carries has a horizontal oscillatory motion imparted to it in the usual way, in this case from a central driving shaft *d* provided with a belt pulley, the shaft having its bearing in the bearing support *e* and above the platform *a* carrying the fly-wheel *f* with the counterpoise *g*, which is the only one in the machine. This fly-wheel the horizontal center of gravity of which coincides with those of the masses which receive the impulse and rotate in a circular path, contains also the bearing for the crank pin *h* which serves to drive the platform *a*, and is carried by a cross frame or bridge *i* which rises between the screen frames and forms the connecting piece hereinbefore referred to. This cross frame *i* is bent upwards at right angles or into the form of a stirrup, in such a way that it is possible when the driving power acts upon the platform *a* to shift the points of impulse of the centrifugal forces of the rotating masses which are in equilibrium in the crank bearing into the common horizontal plane of gravitation of the latter, and so to avoid the production of a couple of forces or torque in the vertical plane. All this applies especially to cases in which only one fly wheel and counterpoise are used, and only one platform or main frame, which lies under all the screens. The screen and collecting frames *s* may be of any construction preferred.

The improvement in the horizontal screening machine described thus consists in the fact that in consequence of the mode of driving set forth it is possible to attain a perfect counterbalancing of the mass with a single counterpoise, and thereby to transfer the drive to a platform arranged under all the screens so that box frames which surround the screens and impede their handling are avoided. This has proved in practice to be a great advantage for insuring regularity of working, and especially for handling the machine when at work. The separate screen frames may simply be laid free upon the platform and need not as in other methods of construction be partly raised from below and then by means of an auxiliary floor the operation be completed by a screw, or, as in constructions of the box form, be laid in the boxes in an exactly horizontal position from above. This saves the labor of a man, since in the last named form of apparatus two are always required for the proper insertion and removal of the screens, while

the placing of all the screens upon a platform can be effected by one man.

What I claim is:

In a twin horizontal bolting machine, the combination with two sets of screens, a driving crank and a single counterpoise for counterbalancing the masses, of a platform or floor-frame arranged under all the screens and carrying them and a connecting piece between said platform and the driving crank, this connecting piece, starting from the platform, being bent upward in the form of a stirrup between the two sets of screens so as to locate the pin of the said driving crank and the said counterbalancing weight in the same horizontal plane of gravity as the rotating masses, for the purpose of causing the driving of the screen seatings to be effected with a platform and thus avoiding box frames, substantially as hereinbefore described.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

EDUARD GLARNER.

Witnesses:
GEO. GIFFORD,
AMAND BRAUN.