

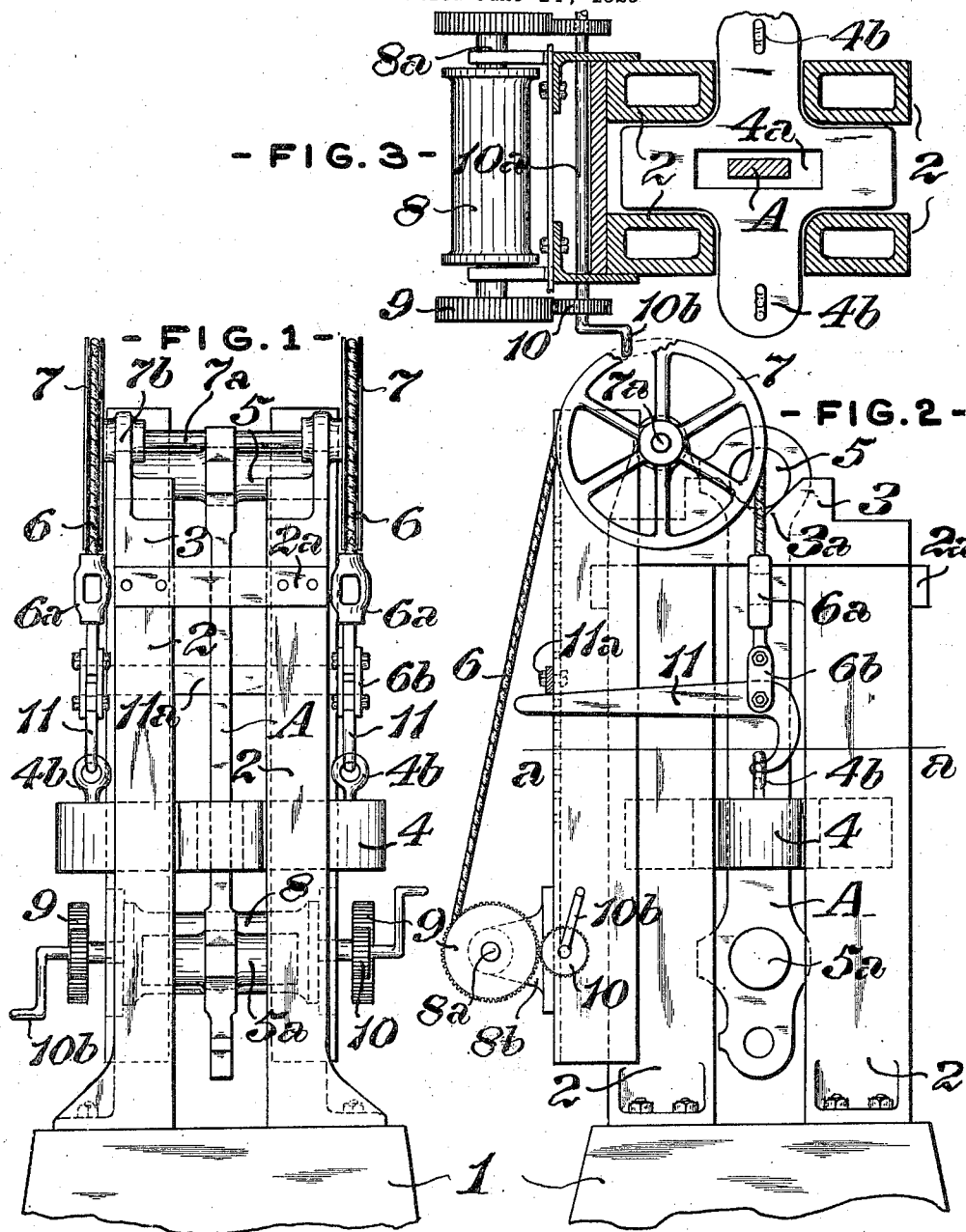
April 29, 1924.

1,491,990

J. KINDERVATER

DROP TESTING MACHINE

Filed June 14, 1923



WITNESSES

Edward Wright
S. H. Harrington

INVENTOR

J. Kindervater
By J. H. H. Pell
Att'y.

UNITED STATES PATENT OFFICE.

JULIUS KINDERVATER, OF NEW YORK, N. Y.

DROP-TESTING MACHINE.

Application filed June 14, 1923. Serial No. 645,293.

To all whom it may concern:

Be it known that I, JULIUS KINDERVATER, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Drop-Testing Machines, of which improvement the following is a specification.

My invention relates to machines for testing material by the impact of a dropped weight, and its object is to provide a machine of such type which shall be of simple and substantial construction, and be specially adapted for testing connecting rods of locomotives, bar links of structural work, or other members having an eye or perforation at each end.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawings: Figure 1 is a rear view, in elevation, of a drop-testing machine embodying my invention; Fig. 2, a side view, in elevation of the same; and, Fig. 3, a horizontal section, on the line *a a* of Fig. 2.

In the practice of my invention, referring descriptively to the specific embodiment thereof which is herein exemplified, the frame of the machine comprises a substantial bed or base, 1, of forged steel or cast iron or steel, and four standards, 2, of sufficient length to accommodate the longest piece of material on which the machine is designed to operate, which standards are bolted to the base, and connected, at their upper ends, by transverse bars, 2^a, and lateral bearing blocks, 3, in which V shaped bearing recesses, 3^a, are formed.

A drop test weight, 4, of predetermined weight, which, as shown in Fig. 3, is in the form of a cross, the arms of which fit freely between the standards, 2, and in which a central opening, 4^a, is formed, is suspended by cables, 6, which are connected to a hoisting drum, 8, secured upon a shaft, 8^a, journaled in bearings, 8^b, on the front pair of standards, 2. The cables, 6, pass around sheaves, 7, on a shaft, 7^a, journaled in bearings on the blocks, 3, and are connected to turnbuckles, 6^a, which provide proper facilities for adjustment of length. The turnbuckles are connected, by links, 6^b, to clevises, 11, which are hooked, at one end, into eye bolts, 4^b, fixed in the drop test weight,

4, and bear, at their opposite ends, on a trip bar, 11^a, secured, adjustably as to height, to the front pair of standards, 2.

The drop test weight is raised to the upper limit of its traverse, by the rotation of an operating shaft, 10^a, having crank arms, 10^b, on its ends, and carrying spur pinions, 10, which engage gears, 9, on the shaft, 8^a, of the hoisting drum.

In the operation of the machine, the member to be tested, which, in the instance illustrated, is a locomotive side rod, A, is suspended on the blocks, 3, by a trunnion pin, 5, passed through the crank pin eye at one of its ends, and seated in the V shaped bearing recesses, 3^a, of the blocks. An anvil pin, 5^a, is fitted in the crank pin eye at the opposite end of the rod, A. The hoisting drum shaft is then released, and the drop test weight, 4, thereby allowed to fall, being automatically released by the bearing of the clevises 11, on the trip bar 11^a, and striking the anvil pin 5^a. A shock test is thus applied to both the lower and upper sections of the rod, A, by the impact of the drop test weight on the anvil pin, 5^a.

I claim as my invention and desire to secure by Letters Patent:

1. In a drop testing machine, adapted to test elongated articles having apertures in their ends, the combination of a base; standards, secured thereon and spaced apart for the passage of a drop test weight; recessed bearing blocks, fixed to the tops of the standards; a pin, seated in the recesses of the bearing blocks, for supporting the article to be tested; a drop test weight; hoisting mechanism for raising said weight; a tripping device for releasing said weight; and an anvil pin, adapted to be fitted in an article to be tested, in position to receive the impact of the released drop test weight.

2. In a drop testing machine, adapted to test elongated articles having apertures in their ends, the combination of a base; standards secured thereon; recessed bearing blocks, fixed to the tops of the standards; a pin, seated in the recesses of the bearing blocks, for supporting the article to be tested; a drop test weight, having arms fitting freely between the standards; hoisting mechanism for raising said weight; a tripping device for releasing said weight; and

an anvil pin, adapted to be fitted in the article to be tested, in position to receive the impact of the released drop test weight.

3. In a drop testing machine adapted to
5 test elongated articles having apertures in their ends, the combination of a base; standards secured thereon; recessed bearing blocks, fixed to the tops of the standards; a trunnion pin, adapted to extend through an
10 aperture in an article to be tested, and to rest in the recesses of the bearing blocks and form a support for said article; a drop test weight; hoisting mechanism for raising said weight; a tripping device for releasing said weight; and an anvil pin,
15 adapted to be fitted in the article to be tested, in position to receive the impact of the released drop test weight.

4. In a drop testing machine adapted to
20 test elongated articles having apertures in their ends, the combination of a base; standards secured thereon; recessed bearing blocks, fixed to the tops of the standards; a trunnion pin, adapted to extend through
25 an aperture in an article to be tested, and to rest in the recesses of the bearing blocks and form a support for said article; a drop test weight; hoisting mechanism for raising said weight; a tripping device for releasing said weight from the hoisting mechanism; means adjustable on the standards, for ac-

tuating said tripping device, and an anvil pin, adapted to be fitted in the article to be tested, in position to receive the impact of the released drop test weight. 35

5. In a drop testing machine adapted to test elongated articles having apertures in their ends, the combination of a base; standards secured thereon; recessed bearing blocks, fixed to the tops of the standards; 40 a trunnion pin, adapted to extend through an aperture in an article to be tested, and to rest in the recesses of the bearing blocks and form a support for said article; a drop test weight; hoisting mechanism for raising 45 said weight; clevises, engaging said weight; a trip bar, connected to the standards and disposed in the path of the clevises; and an anvil pin, adapted to be fitted in the article to be tested, in position to receive the im- 50 pact of the released drop test weight.

6. In a drop testing machine, a drop test weight in the form of a cross, the arms of which are adapted to pass between stand- 55 ards of the machine, and having a central opening, through which an article to be tested can be passed; and eye bolts, for connection to a hoisting mechanism.

JULIUS KINDERVATER.

Witnesses:

J. SNOWDEN BELL,
W. R. WARNER.