

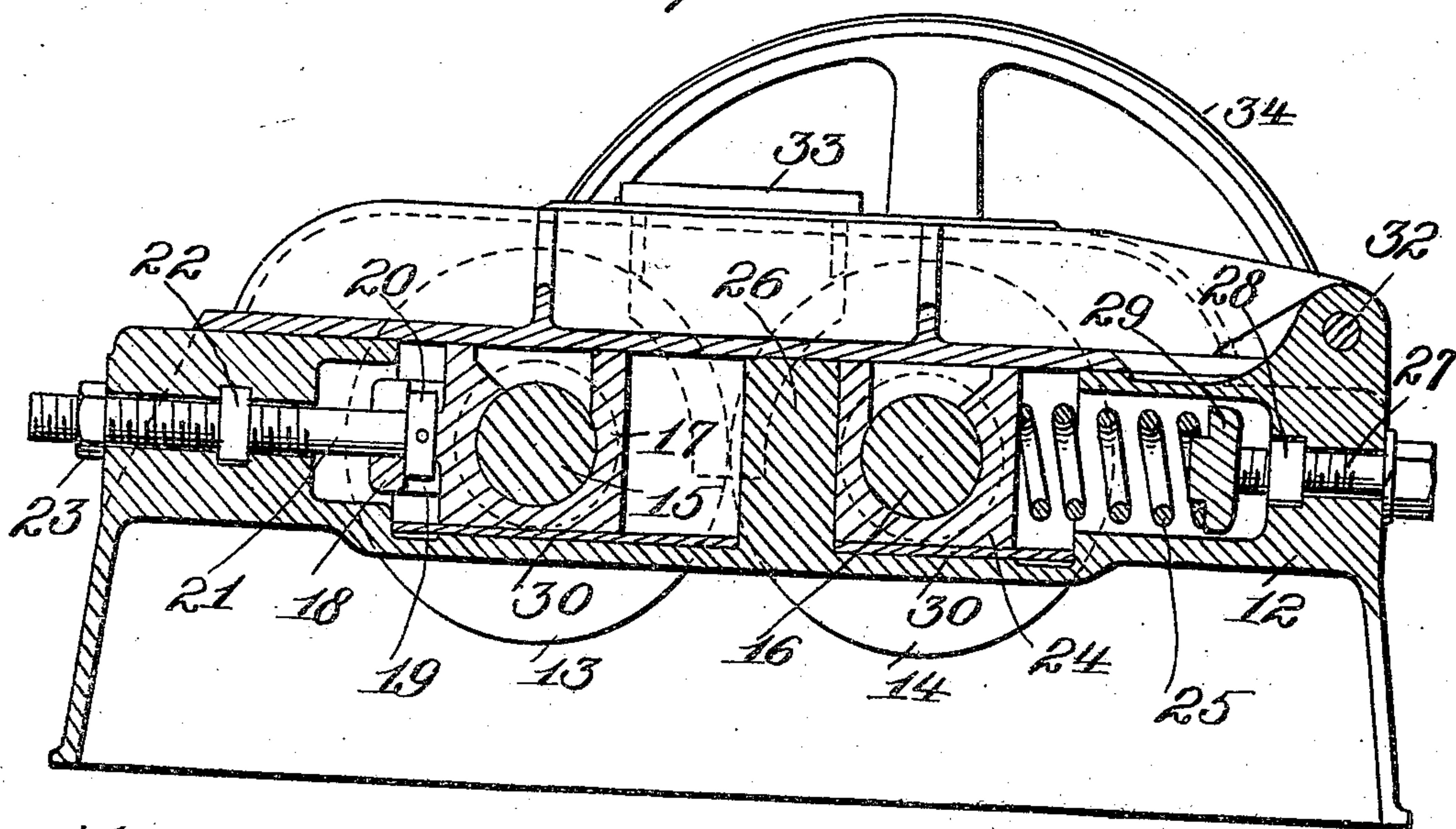
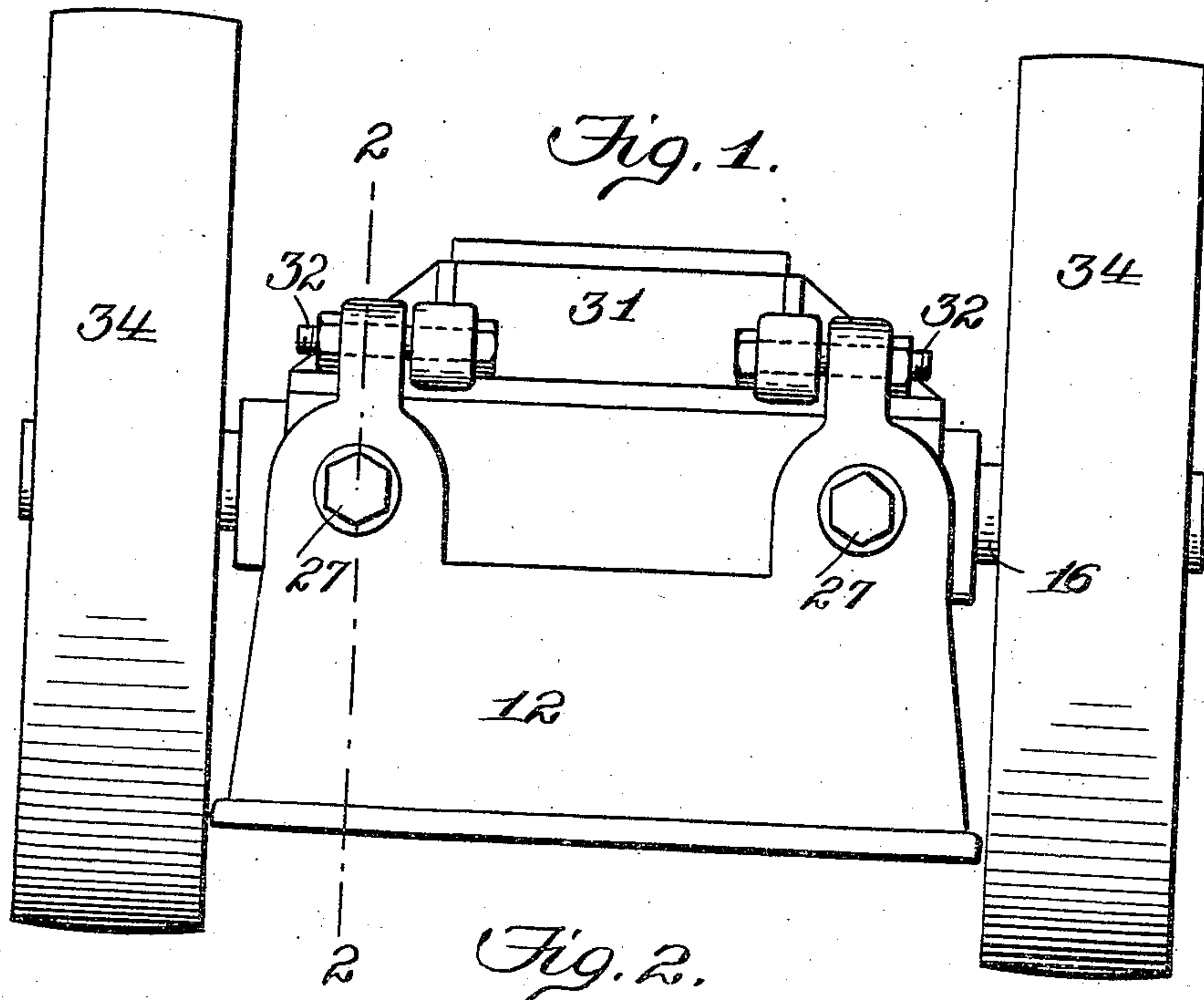
No. 855,358.

PATENTED MAY 28, 1907.

T. L. & T. J. STURTEVANT.
ROLL CRUSHING MACHINE.

APPLICATION FILED APR. 8, 1906.

2 SHEETS—SHEET 1.



Witnesses:
C. M. Sweeney
J. D. Knight.

Inventors:
Thomas L. Sturtevant
Thomas J. Sturtevant
by *Sturtevant & Co.*
Attys.

No. 855,358.

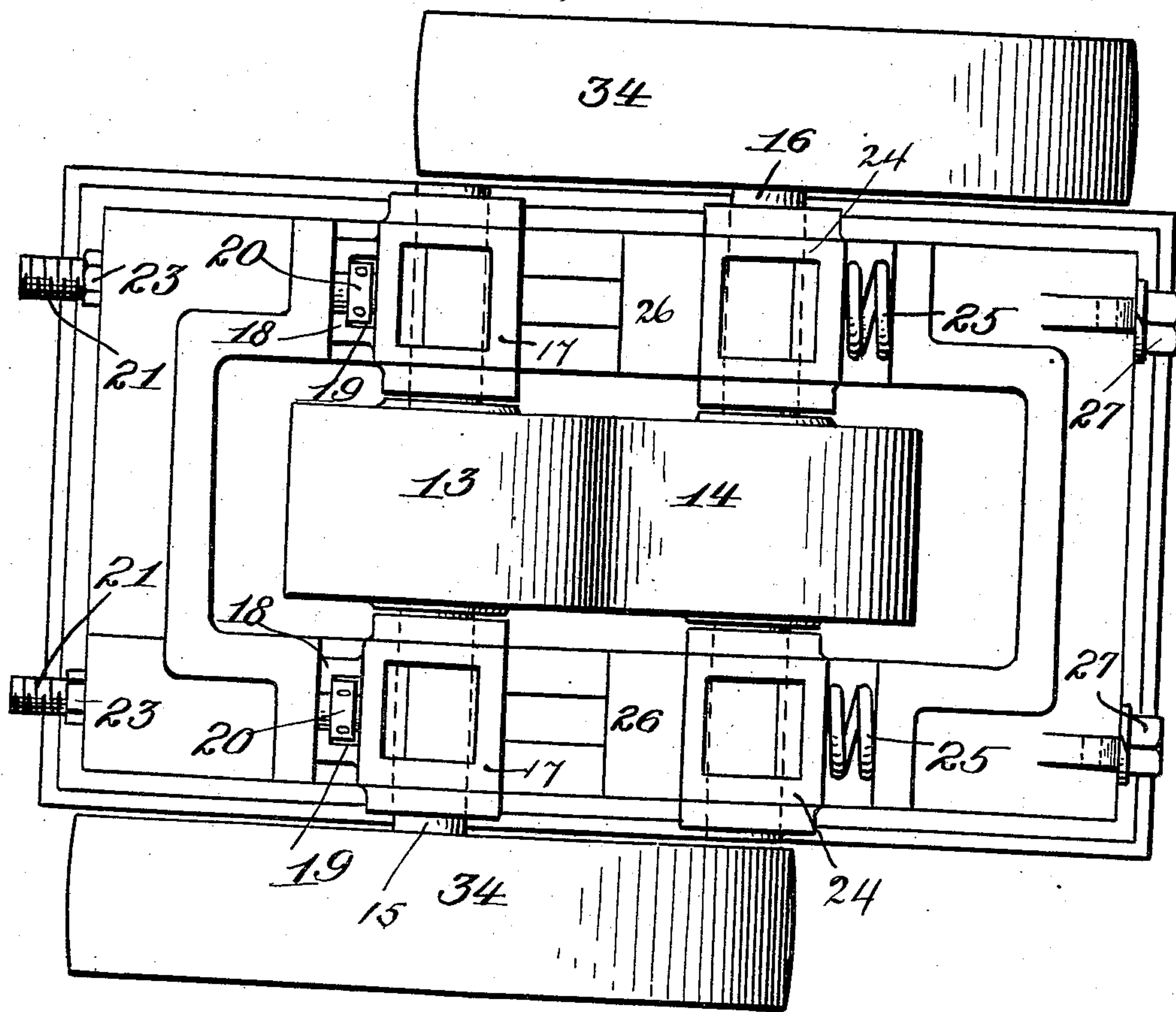
PATENTED MAY 28, 1907.

T. L. & T. J. STURTEVANT.
ROLL CRUSHING MACHINE.

APPLICATION FILED APR. 3, 1906.

2 SHEETS—SHEET 2.

Fig. 3.



Witnesses:
C. M. Sweeney
J. D. Klingel

Inventors:
Thomas L. Sturtevant
Thomas J. Sturtevant
by *Klingel*
Attys.

UNITED STATES PATENT OFFICE.

THOMAS LEGGETT STURTEVANT, OF QUINCY, AND THOMAS JOSEPH STURTEVANT, OF WELLESLEY, MASSACHUSETTS, ASSIGNORS TO STURTEVANT MILL COMPANY, OF PORTLAND, MAINE, A CORPORATION OF MAINE.

ROLL CRUSHING-MACHINE.

No. 855,358.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed April 3, 1906. Serial No. 309,608.

To all whom it may concern:

Be it known that we, THOMAS LEGGETT STURTEVANT and THOMAS JOSEPH STURTEVANT, citizens of the United States, residing, respectively, at Quincy and Wellesley, in the county of Norfolk and State of Massachusetts, have invented or discovered certain new and useful Improvements in Roll Crushing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to that class of crushing machines in which two crushing rolls, between which the material to be crushed is fed, are employed, and one of which crushing rolls is yieldingly mounted so that it may have more or less movement toward and from the other crushing roll; the invention having for its object to provide a crushing machine, of the class referred to, which will be simple in construction, so that it may be made at comparatively little cost, and which will be convenient in use and efficient in operation.

To this end the invention comprises a machine bed-frame provided with suitable guideways in which are mounted bearing boxes for the shafts of the crushing rolls. The bearing boxes for one roll shaft are rigidly but adjustably held in place by suitable screw bolts, while the bearing boxes for the other roll shaft are yieldingly pressed by springs against stops or abutments formed on the machine frame, means being provided whereby the tension or stress of the springs may be varied as may be required for different kinds of work. The upper guides for the bearing boxes are provided by a hinged cover or casing which incloses the crushing rolls above, and on which may be mounted a hopper to contain the material to be crushed.

In the accompanying drawings, Figure 1 is an end view of a crushing machine embodying the present invention. Fig. 2 is a longitudinal section of the same on line 2—2, Fig. 1, and Fig. 3 is a plan view with the cover removed.

Referring to the drawings, 12 denotes the bed-frame of the machine the side parts of which are recessed to form guideways for the bearing boxes of the crushing rolls 13, 14, carried by shafts 15, 16, the bearing boxes

17 for the roll shaft 15 being rigidly but adjustably mounted in their guideways in the said frame. To this end each of said bearing boxes is provided with an extension 18 having a recess 19 which receives the head 20 of a screw bolt 21 passing through a nut 22 located in a suitable recess in the frame, so that by turning the said screw bolts by inserting a rod or pointed instrument in suitable holes or sockets, with which said heads are preferably provided, the positions of said bearing boxes 17 on the frame may be varied, as may be required; and when a desired adjustment of the said boxes has been effected the said bolts will be locked in place by suitable set-nuts 23.

The bearing boxes 24 for the roll shaft 16 are normally pressed by springs 25 against stops or abutments 26 on the machine frame formed by projections between the open-topped recesses receiving the bearing boxes; said springs yielding more or less during the operation of the machine, as the material to be crushed passes between the crushing rolls. The tension or stress of the springs 25 may be varied by means of adjusting screw-bolts 27 passing through nuts 28 seated in the frame and bearing against backing plates or washers 29 against which the said springs are seated. Also the tension or stress of said springs will be varied by changing the position of the rigidly but adjustably mounted bearing boxes 17 of the roll shaft 15, as will be understood, by reason of the changed position of the roll 13 opposing the roll 14.

The bearing boxes 17 and 24 preferably slide on wear-plates 30 located in the bottoms of the recesses in which said bearing boxes are located. The crushing rolls are inclosed above by a cover 31 hinged on the bolts 32 to one end of the frame 12; the said cover preferably carrying a hopper 33 to contain the material to be crushed, and the said cover also closing the tops of said recesses and serving as the upper guide for the sliding bearing boxes 17 and 24. By lifting or turning over the said cover ready access is afforded to the rolls and their shafts and bearings which may be readily assembled in place when the said hinged cover is thus lifted or thrown back, as will be understood. Each of the roll shafts 15, 16, is provided

with a suitable fly-wheel 34, as is usual in this class of machines.

From the foregoing it will be understood that the invention provides a crushing machine of simple and inexpensive construction, the parts of which can be conveniently assembled, by virtue of the open-topped recesses in which the bearing boxes 17 and 24 are located, and which parts are readily accessible at all times, either for repairs or replacement; while the machine is convenient in use and efficient in operation.

Having thus described our invention, we claim and desire to secure by Letters Patent:—

1. In a roll crushing machine, the combination with a machine frame having open topped recesses, of a crushing roll rigidly mounted on said machine frame, a second crushing roll, bearing boxes for said second crushing roll yieldingly mounted for sliding movement in said recesses, and a cover over said rolls and extending over the tops of said recesses, said cover thus providing upper guideways for said yielding bearing boxes.

2. In a roll crushing machine, the combination with a machine frame having open-topped recesses, of a pair of crushing rolls, shafts by which said rolls are carried, bearing boxes for one of said shafts rigidly mounted on said machine frame, a pair of bearing boxes for the other of said shafts yieldingly mounted in said recesses, and a hinged cover over said rolls, said cover thus providing upper guideways for said bearing boxes; whereby when the said hinged cover is lifted or

thrown back convenient access to said rolls and said bearing boxes is afforded.

3. In a roll-crushing machine, the combination with the machine frame the side portions of which are provided with suitable open-topped recesses and with projections or abutments between said recesses, of two rolls, two shafts by which said rolls are carried, bearing boxes for said shafts located on opposite sides of said projections or abutments, springs for yieldingly holding the bearing boxes of one of said shafts against the said projections or abutments, to force one of said rolls yieldingly toward the other roll, and a hinged cover over said rolls closing the tops of said recesses and providing upper guideways for said bearing boxes.

4. In a crushing machine having crushing rolls, the combination with a side frame having a longitudinal recess, of a bearing box for one of said rolls movable in said recess, and an adjusting screw having a positive threaded connection with said frame, said screw having a head positively but rotatively engaging said bearing box, and said head being provided with means by which it may be turned to rotate said screw and thereby effect a positive adjustment of said bearing box in either direction.

In testimony whereof we affix our signatures, in presence of two witnesses.

THOMAS LEGGETT STURTEVANT.

THOMAS JOSEPH STURTEVANT.

Witnesses:

W. H. ELLES,

F. B. HECKER