

No. 708,925.

Patented Sept. 9, 1902.

F. E. SEAGREN.
CALC CUTTING MACHINE.

(Application filed Apr. 30, 1902.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.

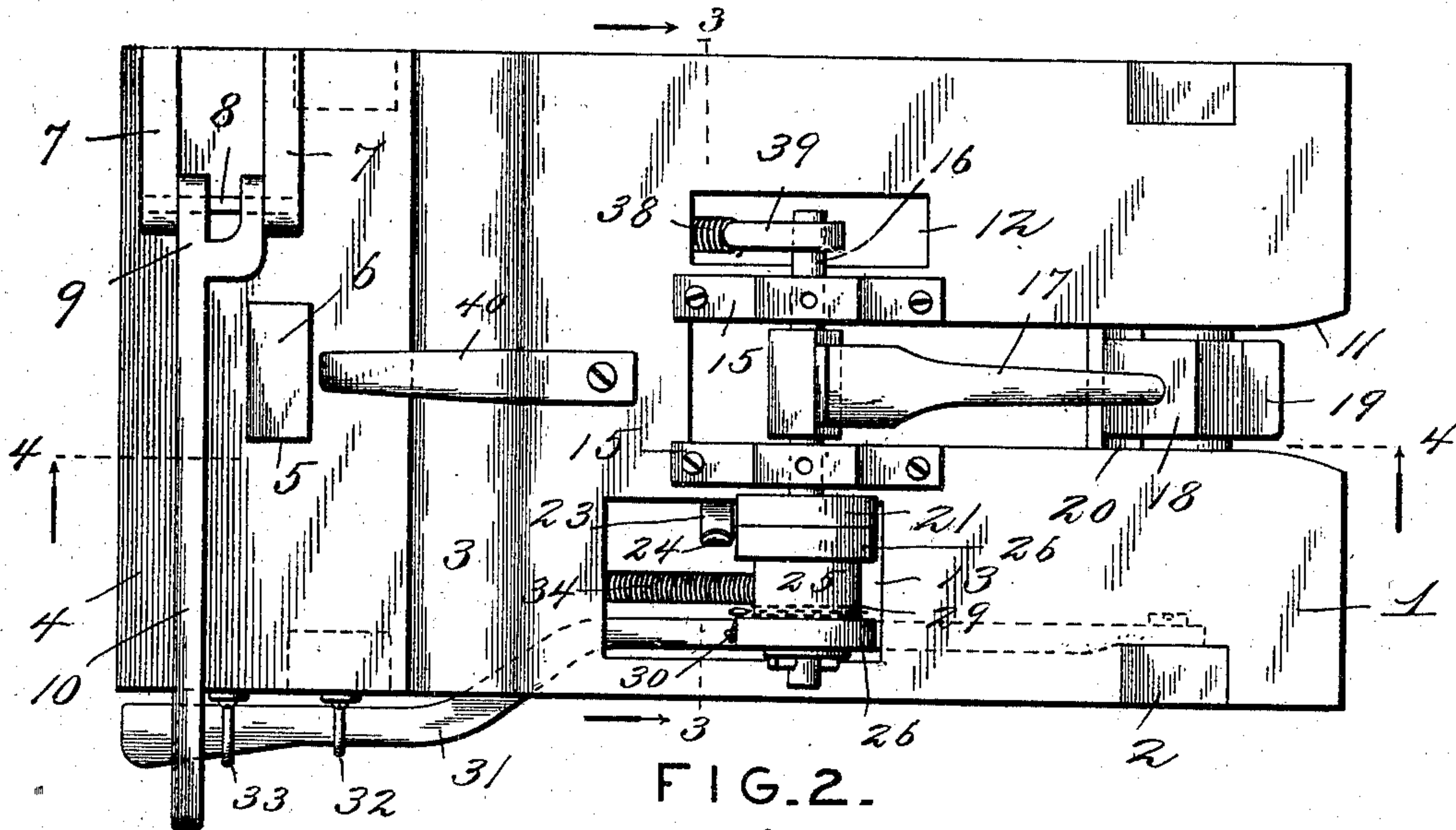


FIG. 2.

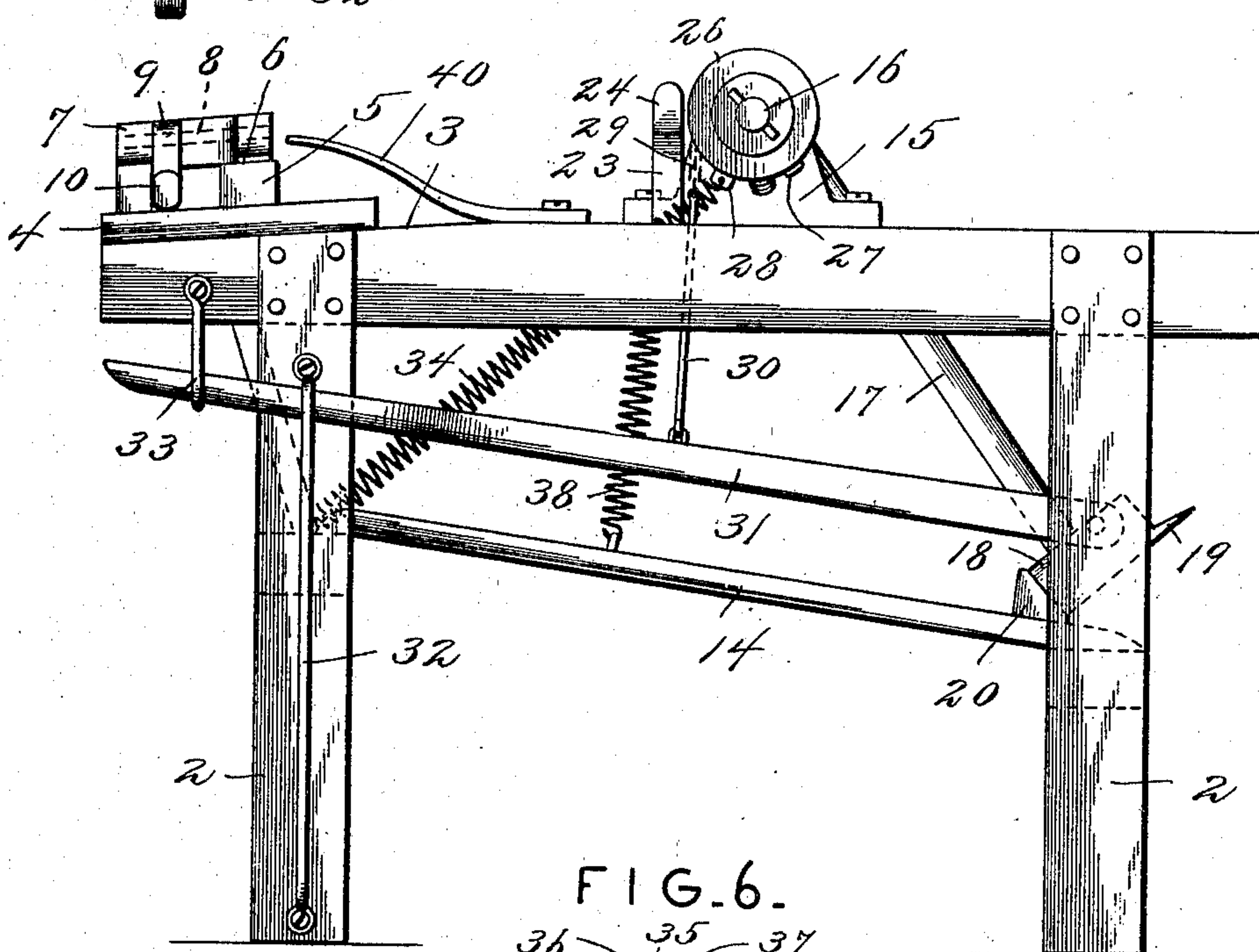
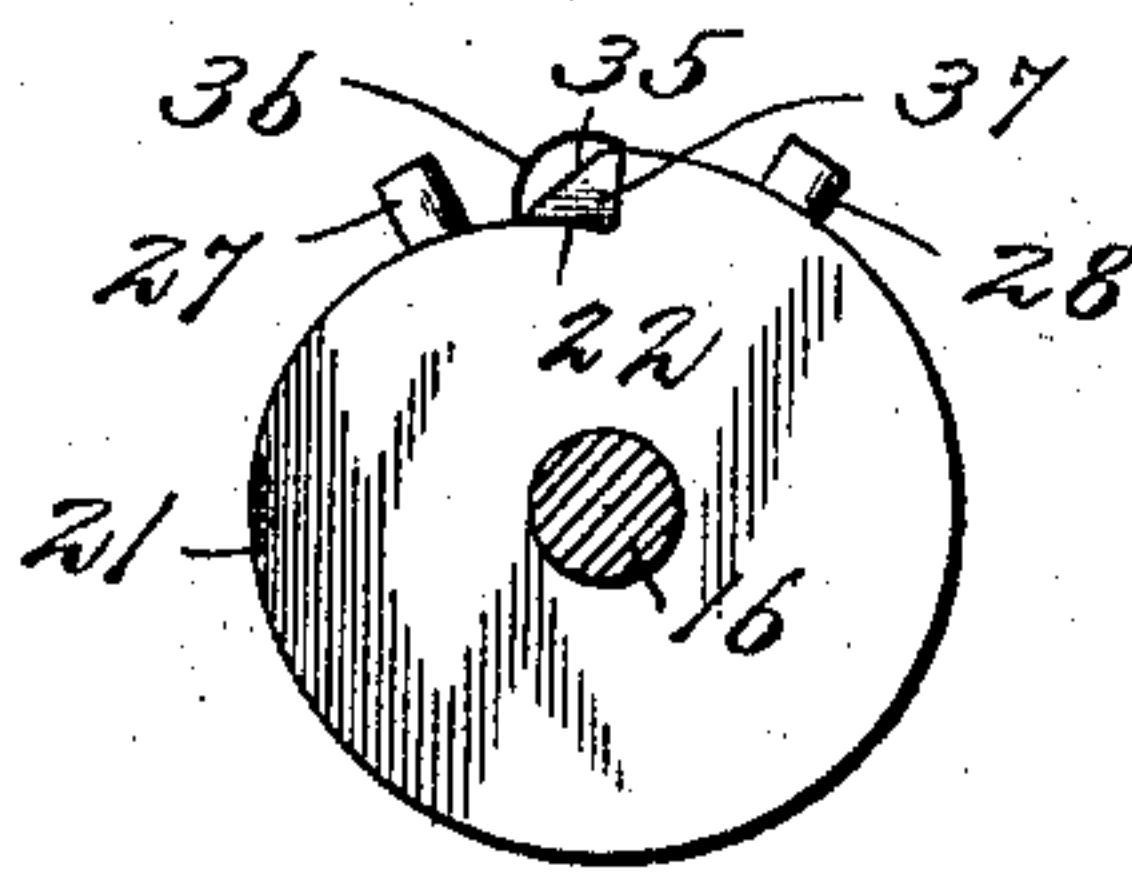


FIG. 6.



Witnesses

H. L. Amer,
Chas. S. Hoyer.

Inventor
Fred E. Seagren,

By
Victor J. Evans
Attorney

No. 708,925.

Patented Sept. 9, 1902.

F. E. SEAGREN.
CALK CUTTING MACHINE.

(Application filed Apr. 30, 1902.)

(No Model.)

2 Sheets—Sheet 2.

FIG. 3.

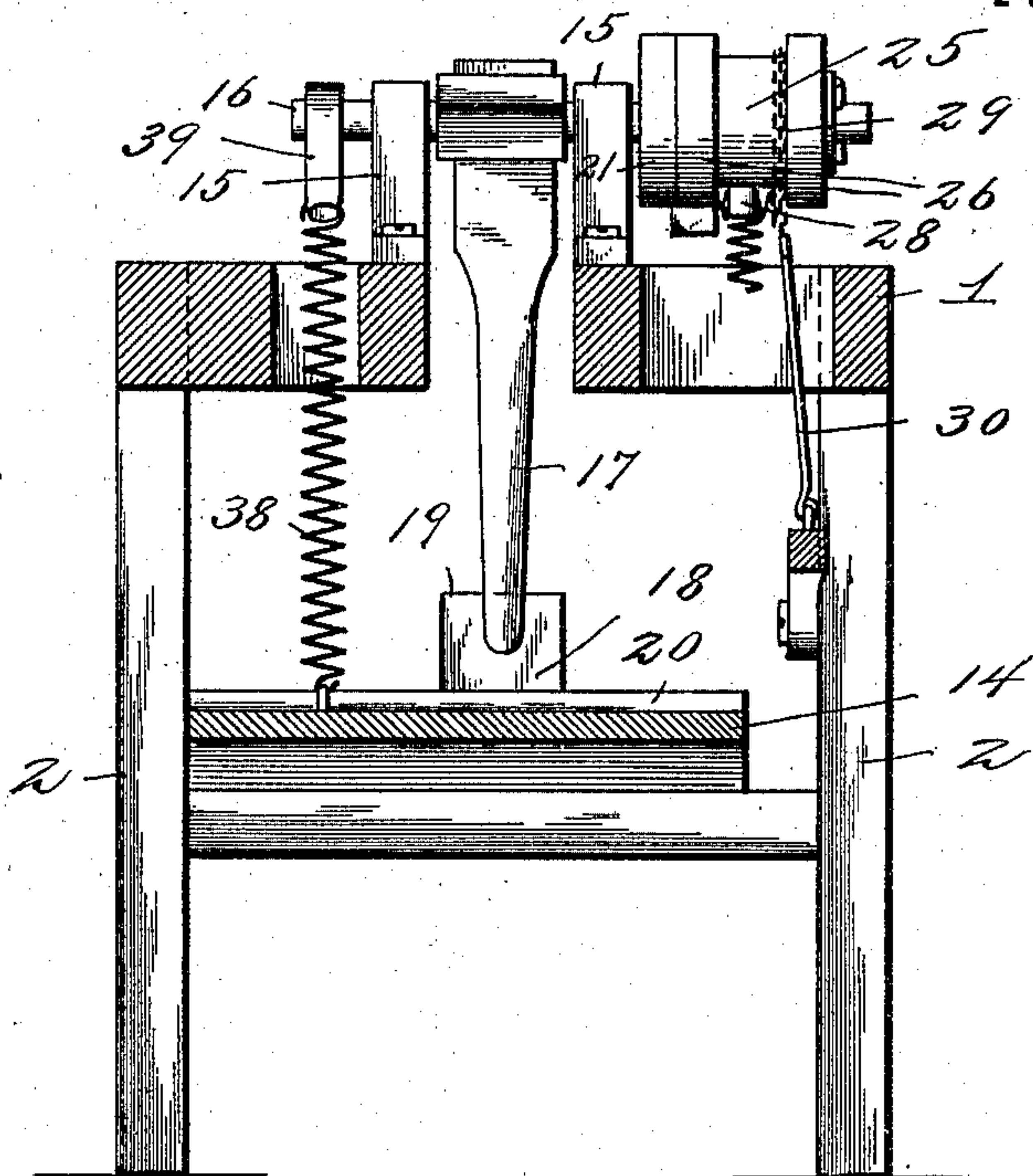


FIG. 4.

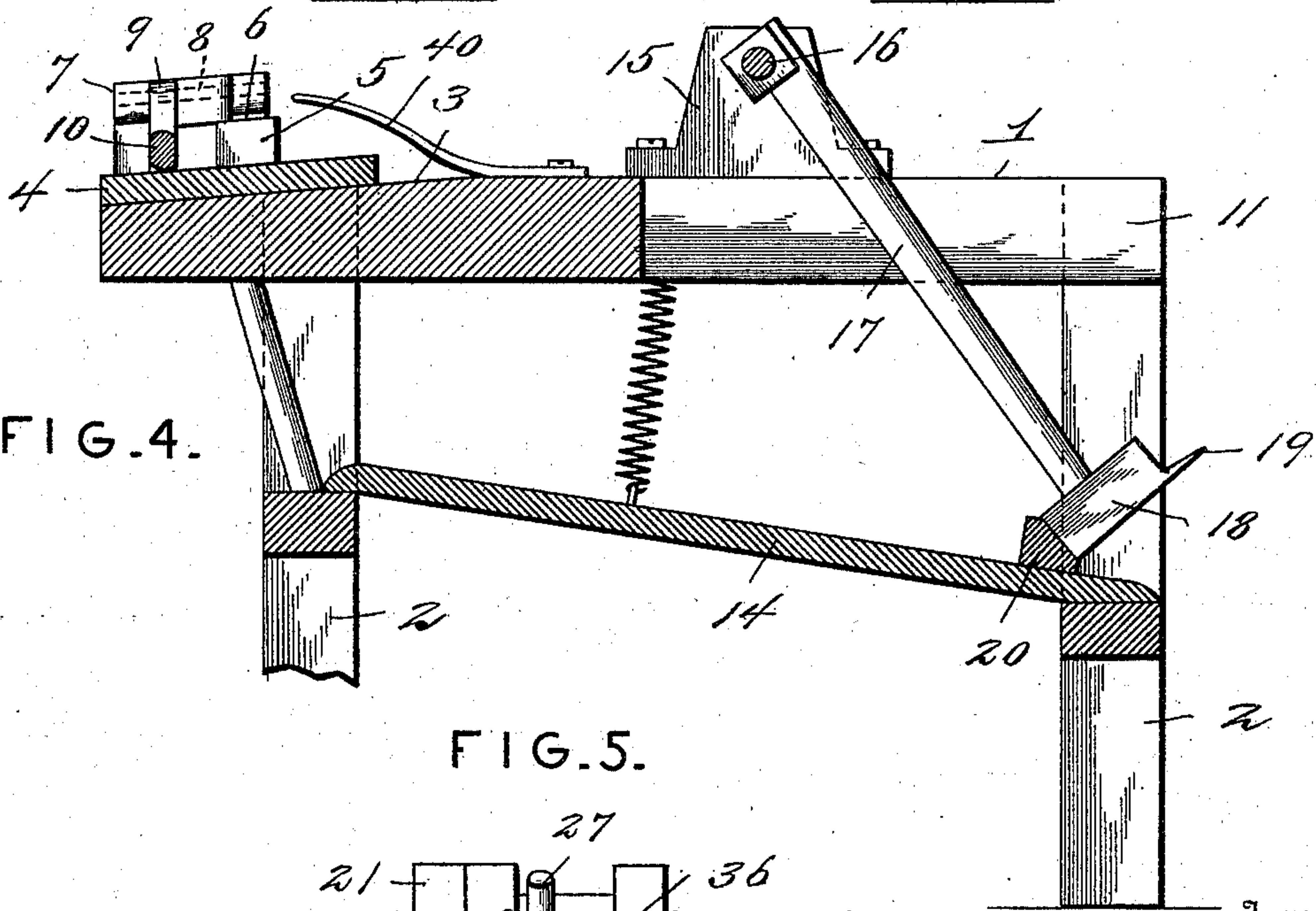
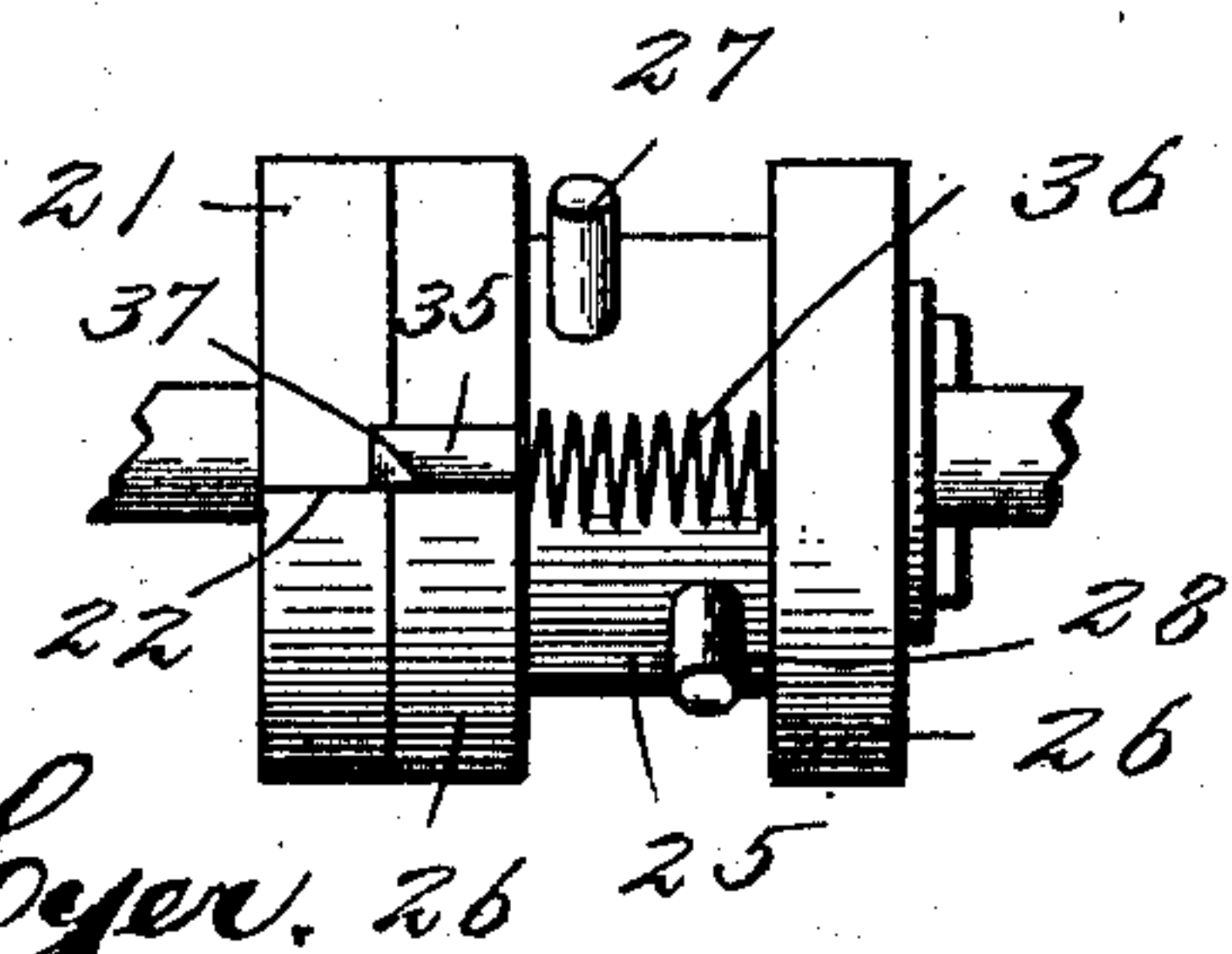


FIG. 5.



Witnesses

H. L. Ames.
Chas. S. Hoyer.

Inventor

Fred E. Seagren.

By

Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

FRED E. SEAGREN, OF CURLEW, IOWA.

CALK-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 708,925, dated September 9, 1902.

Application filed April 30, 1902. Serial No. 104,347. (No model.)

To all whom it may concern:

Be it known that I, FRED E. SEAGREN, a citizen of the United States, residing at Curlew, in the county of Palo Alto and State of Iowa, have invented new and useful Improvements in Calk-Cutting Machines, of which the following is a specification.

This invention relates to a horseshoe-calk splitting or cutting machine; and the object of the same is to provide a simple and effective organization of parts for splitting or cutting horseshoe-calks.

With these and other objects and advantages in view the invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a top plan view of a machine embodying the features of the invention. Fig. 2 is a side elevation of the same. Fig. 3 is a transverse vertical section on the line 3 3, Fig. 1. Fig. 4 is a longitudinal vertical section on the line 4 4, Fig. 1. Fig. 5 is a detail elevation of parts of the mechanism. Fig. 6 is an end elevation of the device as shown by Fig. 5.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a bed of suitable dimensions and constructed of any preferred material best adapted for the purpose. This bed is supported by four legs 2, disposed at opposite points and of such height as to hold the bed at a convenient operating elevation. One end of the bed is formed with a downwardly-inclined surface 3, on which is secured a plate 4, extending the full width of the bed and having an anvil 5, of suitable material, rising from the center thereof and in the form of a block also having an upper inclined side 6. The plate 4 has bearings 7 at one end which are spaced apart and receive a fulcrum rod or pintle 8, passing through the enlarged bifurcated end 9 of a work holding or clamping lever 10, which extends over the plate 4 at a suitable distance outward from the anvil 5, the free extremity of the work holding or clamping lever being projected beyond one side of the machine for convenience in grasping the same and operating it in relation to the work disposed on the anvil and held there-

by in positive position during the splitting or cutting operation. The enlarged bifurcated end 9 of the lever prevents the latter from having a loose lateral movement and insures a positive action in holding the work relatively to the anvil. The inclined surface 3 and the corresponding inclination of the plate 4 and anvil 5 provides for a disposition of the work or material operated upon at such an angle that the cutting or splitting mechanism, which will be hereinafter specified, will be rendered effective and the angle of cut compensated for.

The bed 1 is formed with a central longitudinally-extending slot 11, opening outwardly through the end thereof opposite that at which the anvil 5 is located, and on opposite sides of the slot 11 are smaller longitudinally-extending slots 12 and 13. The legs 2 below the bed 1 also support a downwardly-inclined rest 14, which also serves as a means for attaching a part of the operating devices. On opposite sides of the inner terminal of the slot 11 bearing uprights 15 are secured and have a shaft 16 rotatably mounted therein. Secured to the shaft between the bearing uprights 15 is the upper end of an arm 17, which is freely movable upwardly and downwardly through the slot 11, the said arm being reduced toward its free end, and on the latter is firmly secured a weighted head 18, having a beveled cutter 19 at one end which is normally uppermost, and the opposite end engages a stop-strip 20 on the rest 14, which also serves as a support for the head 18. The end of the arm 17, which is attached to the shaft 16, is enlarged to strengthen the same, and when the shaft 16 is revolved or rotated the said arm and the head 18, carrying the cutter, moves therewith.

Secured on the shaft 16 above the slot 13 is a collar 21, having a shoulder 22, which is normally located at the bottom or below the plane of the shaft, and rising from the inner side wall of the said slot 13, slightly in advance of the collar 21, is a resilient release-arm 23, having an upper curved terminal 24 of such shape as to provide a cam-face, for a purpose which will be presently set forth.

On the shaft 16 outside of the collar 21 a drum 25 is loosely mounted and has opposite heads 26, the innermost head being held in

close relation to the collar 21. The said drum between the heads 26 has radially-projecting connecting-posts 27 and 28, and to the post 28 one end of a chain or cable 29 is secured 5 and partially surrounds the drum, the opposite end of the chain or cable being attached to the upper end of a link-rod 30, movably extending upward from an operating-lever 31, fulcrumed at its rear end to one of the 10 legs 2 on the right side of the machine at the end of the latter, through which the slot 11 opens outwardly from the bed 1. The operating-lever 31 is preferably deflected under the bed 1, as shown by Fig. 1, and to steady 15 its movement or to cause it to move equally and positively in the same vertical plane it is extended through an elongated guide-loop 32 on the outer side of the right leg 2 at the end of the machine carrying the anvil or contiguous to the projecting end of the work 20 holding or clamping lever 10. The operating-lever 31 is normally held elevated by a swinging hook 33, which is secured to one side of the bed and is released during the operation of the machine to permit the said lever 25 to be unretardingly actuated at intervals.

To the post 27 the upper end of a spring 34 is secured, the lower end of said spring being attached to the end of the rest 14 at a point 30 between the legs 2 adjacent the anvil 5, and as the drum is rotated toward the anvil 5 by the chain or cable 29, which is passed thereover and pulled by a depression of the lever 31 through the medium of the link 30, the 35 spring 34 partially winds on the drum and operates to return the drum to normal position and to rewind the chain or cable 29 when depressing force is relieved from the lever 31. To carry out this operation, it is necessary 40 that the drum be caused to rotate with the collar 21 and shaft 16, and for this purpose the lower central portion of the inner head 26 of the drum is provided with a clutch-slide 35, which is long enough to normally project over 45 the said collar and bear against the shoulder 22 of the latter. The slide 35 is held in its normal projected position in relation to the collar 21 by a spring 36, bearing against the outer end thereof at one terminal and at- 50 tached at its opposite terminal to the inner side of the outer head 26. The slide 35 has an inner beveled end 37, which contacts with the upper extremity of the resilient release-arm 23, the slide being operated by the re- 55 lease-arm precisely at the moment when the arm 17 and its head 18 have completed a full overthrow stroke and cooperated with the work on the anvil 5. The slide 35 and the spring 36 therefor are normally located at the 60 bottom of the drum 25, and likewise the shoulder 22 is normally at the lower portion of the collar 21, or said collar when in a state of rest is normally so disposed as to bring the shoulder at the lowest point thereof. In view of 65 this arrangement the operation of the slide 35 is not obstructed or interfered with by the chain or cable 29 and the spring 34. As soon

as the slide 35 engages the upper extremity of the release-arm 23 it is pushed outwardly to clear the shoulder 22 of the collar 21, and 70 immediately the coiled portion of the spring 34 on the drum returns the latter to its normal position and winds the chain or cable 29 thereover ready for the succeeding similar operation. 75

The shaft 16 is also provided with means for causing it to rotate in a direction reverse to that pursued during the upward and forward stroke of the arm 17 and head 18, said means consisting of a spring 38, secured at its 80 lower end to the rest 14 and at its upper end to a crank-arm 39, fastened to the end of the said shaft 16 opposite that engaged by the drum 25, the said crank-arm moving through the slot 12. In the center of the bed 1 and 85 close to the anvil 5 is a rebounding device 40, consisting of a plate-spring having its outer end curved and extended normally above the plane of the top side of the said anvil. When 90 the arm 17 and its head 18 are thrown over to cooperate with the anvil, said arm strikes the rebounding device, and by this means a quick backward movement is imparted to the arm 17 and head 18, and thereby assists the spring 95 38 in performing its restoring function and prevents any tendency of the arm 17 and head 18 to move slower than the remaining mechanism or set up a resistance to a quick return operation.

From the foregoing explanation the operation 100 of the machine will be readily comprehended, and in preparing the machine for cutting or splitting calks the work is disposed on the anvil 5 and held down by the lever 10. The operator while holding the work 105 then depresses the lever 31, which actuates the shaft through the medium of the drum 25 and collar 21, as heretofore explained, and causes the arm 17, with the head 18, to move upwardly through the slot 11 and over to- 110 ward the anvil to bring the cutter 19 into engagement with the work. As soon as the operator depresses the lever 31 to its full extent, which will be regulated by the length of the chain or cable 29, he immediately releases 115 said lever, and the parts return to normal position in the manner and for the reasons heretofore explained. A heavy and positive cutting blow will be given by the arm 17 and its head carrying the cutter 19, and by the use 120 of the machine the work of cutting and splitting calks can be rapidly carried on in an economical manner.

Having thus described the invention, what is claimed as new is— 125

1. In a machine of the class set forth, the combination of a bed having an anvil thereon adjacent to one end, a transversely-rotatable shaft extending over the bed, an arm 130 secured to the shaft and having a weighted head with a cutter, the said arm being movable through a part of the bed and adapted to be overthrown by the shaft, a drum loosely mounted on the shaft and having means in

connection therewith for automatically causing the same to be rotated with the shaft and become released to move independently of the latter, and means for actuating the drum and shaft.

2. In a machine of the class set forth the combination of a bed having an anvil thereon adjacent to one end thereof, a swinging arm carrying a head with a cutter to cooperate with said anvil and movable through the bed, means for returning the arm to a normal position, the said arm being normally located beneath the bed, and a rebounding device adjacent to the anvil with which the said arm is adapted to contact.

3. In a machine of the class set forth, the combination of a work-supporting bed having an anvil arranged thereon near one end, a rotatable shaft held above the bed, an arm secured to said shaft and having a cutter at its free end, the said arm movable through the bed and having a cutter thereon normally disposed below the latter, and means for automatically returning the arm and the shaft to normal position.

4. In a machine of the class set forth, the combination of a work-support, a rotatable arm carrying a cutter to cooperate with said support and movable through the latter, the greater portion of the arm carrying the cutter being normally disposed below the bed, an inclined rest device below the bed against which the free end of the arm carrying the cutter normally rests, and means for throwing the arm over in engagement with the work-support, and means for automatically returning the arm to normal position.

5. In a machine of the class set forth, the combination of a work-support, a transversely-extending rotatable shaft, means for returning the shaft to normal position, a shouldered collar on the shaft, a drum loosely mounted on the shaft and having a clutch-slide movably mounted therein, an arm secured to the shaft and having a cutter to cooperate with the work-support, means for releasing the clutch-slide of the drum, means for operating the shaft to throw the arm and cutter over into engagement with the work-

support, and means for returning the shaft and arm to normal position.

6. In a machine of the class set forth, the combination of a work-support and holding means, a shaft having means for returning it to normal position and provided with a shouldered collar, a drum loosely mounted on the said shaft and having a spring attached thereto and adapted to partially wind thereon, a clutch-slide carried by the drum and normally engaging the shoulder of the collar, means for releasing the said slide from the shoulder of the collar, an arm secured to the shaft and having a cutter thereon, and means for rotating the drum and shaft through the medium of the clutch-slide to throw the arm and its cutter over into engagement with the work-support and holding means.

7. In a machine of the class set forth, the combination of a work-support, a rotatable shaft having means to return it to normal position and also provided with a shouldered collar, an arm having a cutter secured to said shaft, a drum rotatably mounted on the shaft and provided with a clutch-slide to engage the shoulder of the collar, means for releasing the clutch-slide from the shoulder of the collar, a spring attached to the drum and adapted to partially wind thereon, a flexible pulling device also attached to the drum and partially surrounding the same, and an operating-lever connected to the pulling device.

8. In a machine of the class set forth, the combination of a work-support, a shaft having means for returning it to normal position and carrying a projecting device, a rotatable element loosely mounted on the shaft adjacent the projecting device and having means to interlock with the latter, a device for releasing the drum from the projecting device of the shaft, and means for operating the drum to actuate the shaft and the arm carrying the cutter.

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

FRED E. SEAGREN.

Witnesses:

W. W. AHRENS,
P. A. WILEY.