

No. 701,785.

Patented June 3, 1902.

C. M. ARNOLD.

BALING PRESS.

(Application filed July 17, 1901.)

(No Model.)

3 Sheets—Sheet 1.

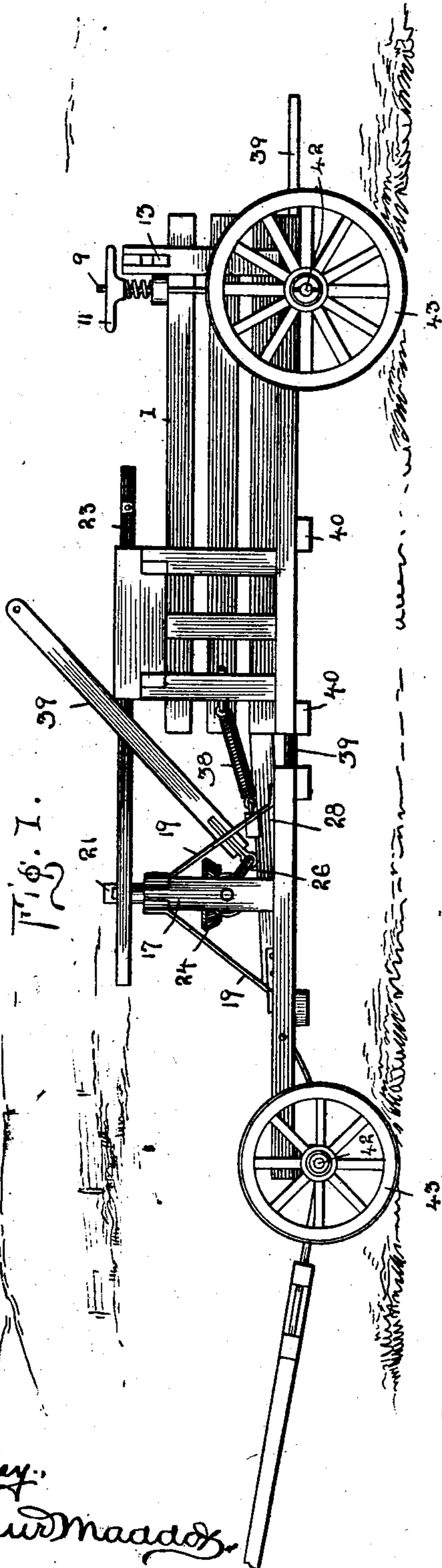


Fig. 1.

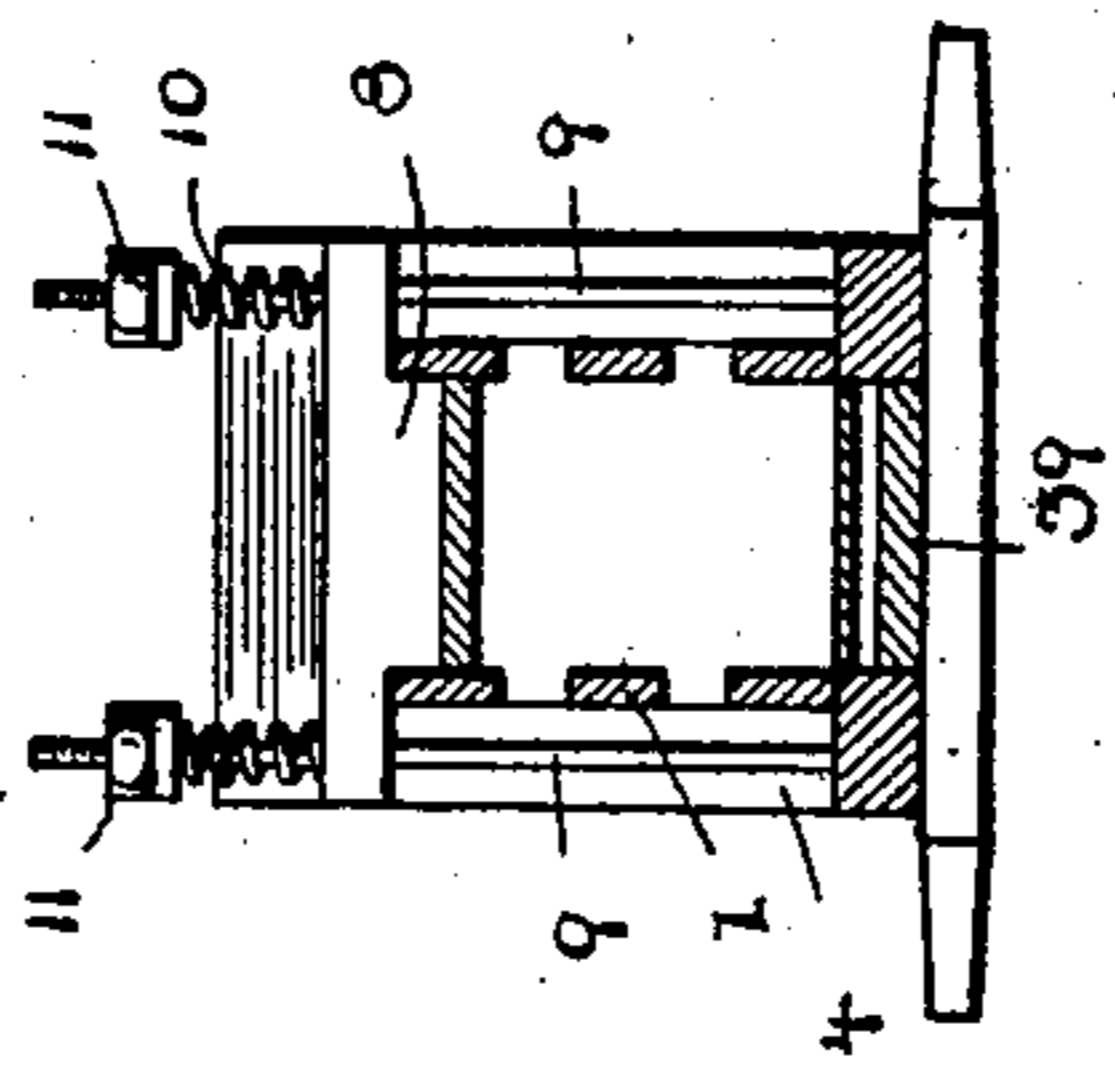
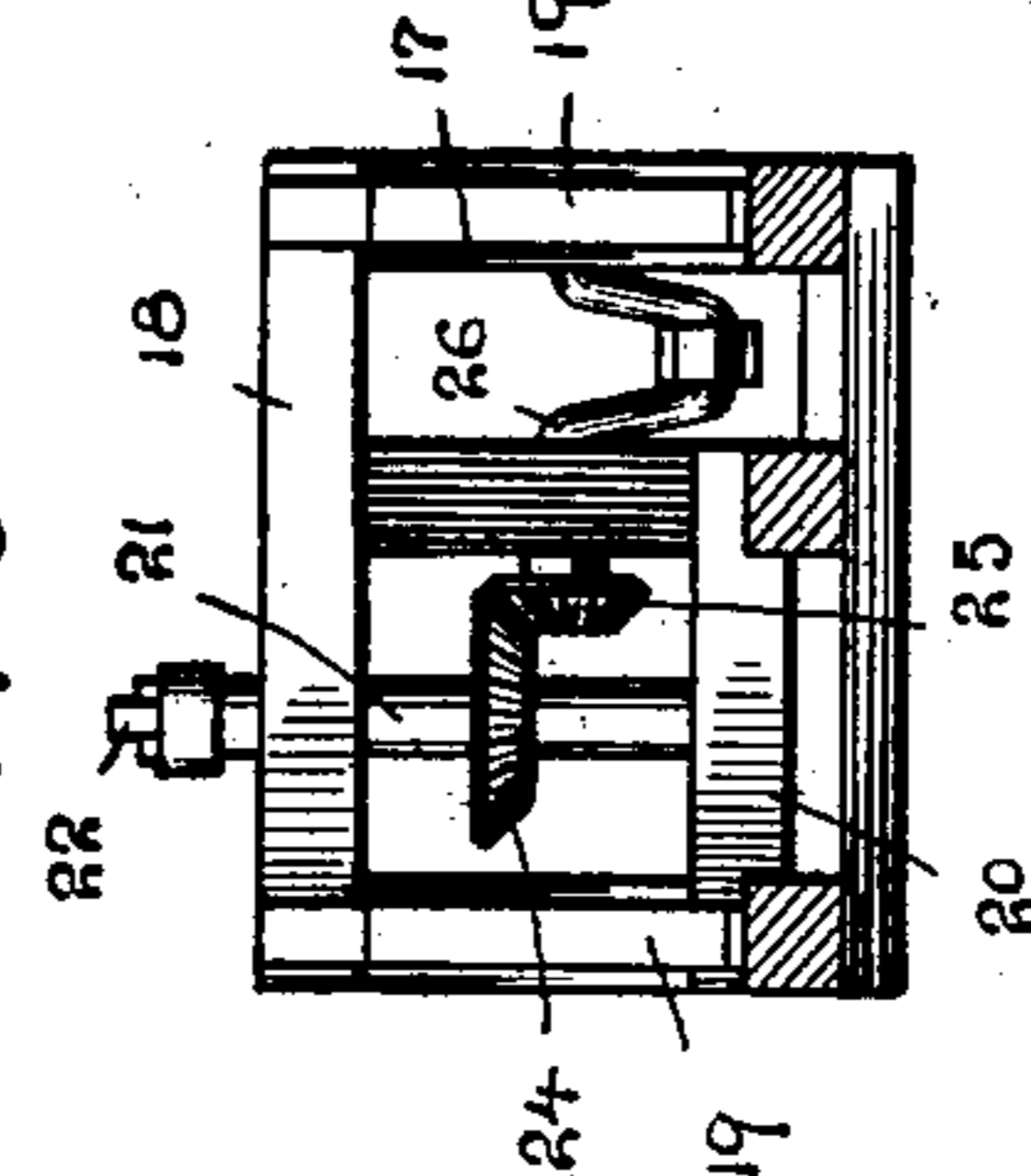


Fig. 7.



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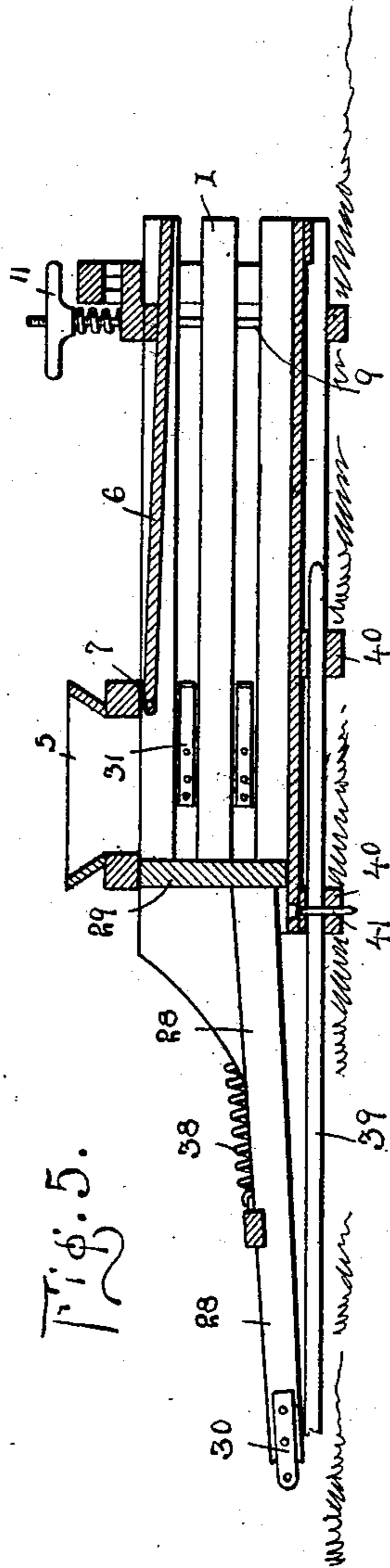
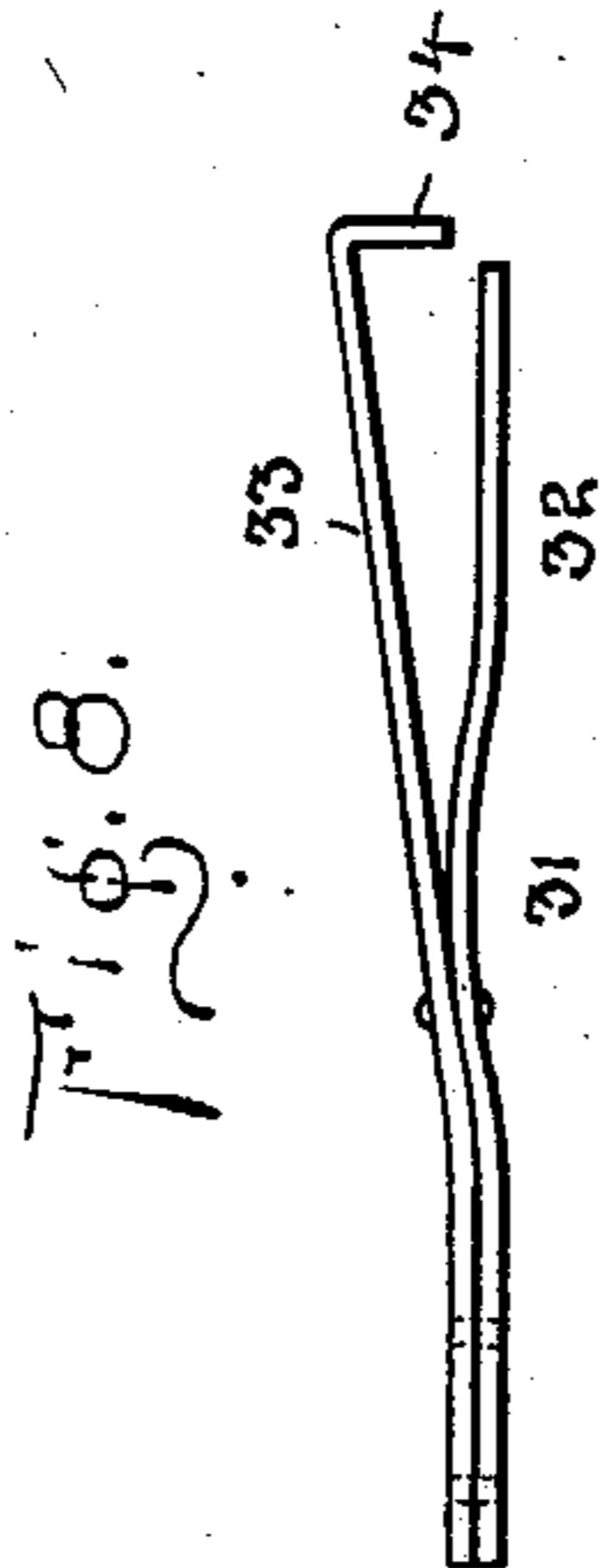
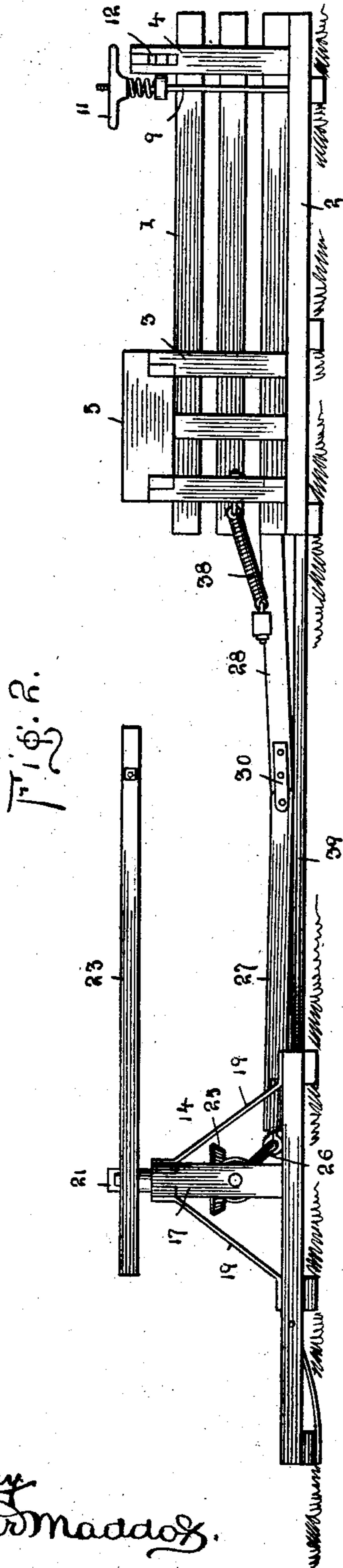
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Fig. 3.

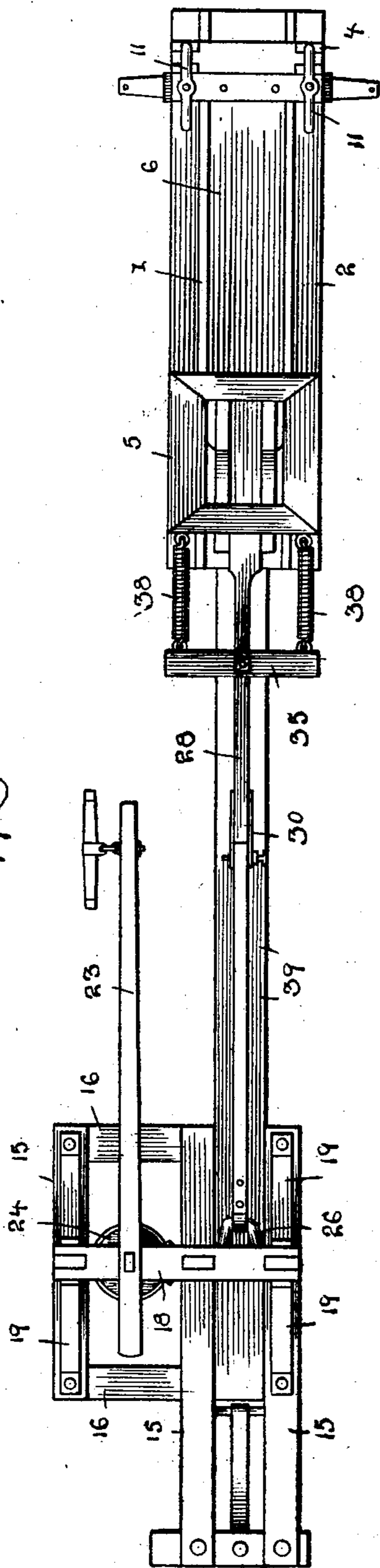
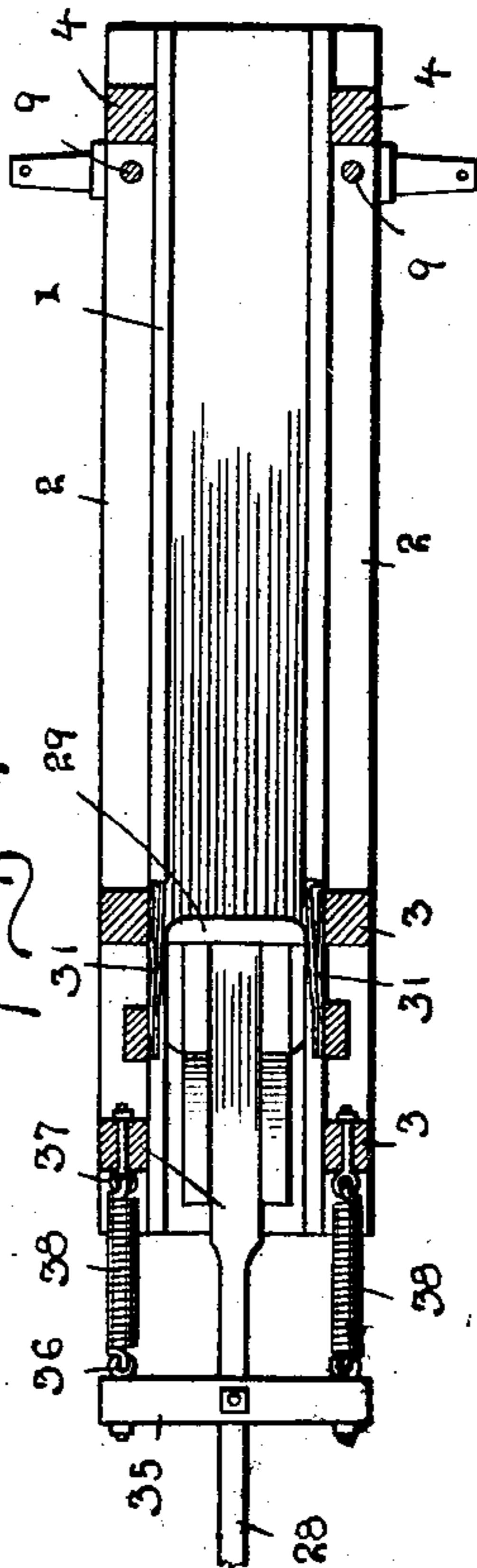


Fig. 4.



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UNITED STATES PATENT OFFICE.

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BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 701,785, dated June 3, 1902.

Application filed July 17, 1901. Serial No. 88,600. (No model.)

To all whom it may concern:

Be it known that I, CYRUS M. ARNOLD, a citizen of the United States, residing at Nursery, in the county of Victoria and State of Texas, have invented new and useful Improvements in Baling-Presses, of which the following is a specification.

This invention relates to improvements in baling-presses, and is more particularly designed as an improvement in that class of presses adapted for baling hay.

The object of the present invention is to provide a baling-press of the portable type, so as to be capable of being transported from place to place, and to so construct the press that the same may be caused to occupy but a minimum amount of space during transportation or when the press is stored; and the invention further aims to provide a press which shall be simple, but at the same time durable, and which may be expeditiously extended into operative position.

A further object of the present invention is to generally improve the details of a baling-press of the portable type, so that but a minimum amount of power will be necessary for the operation of the press, and the bales produced thereby will be effectually and tightly compressed.

With these general objects in view and others which will appear more fully as the nature of the improvement is better understood the invention consists in certain novel details of construction and combination and arrangement of parts, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a baling-press constructed in accordance with the present invention and illustrated as adapted for transportation. Fig. 2 is a similar view, the press being extended and in the form when ready for operation. Fig. 3 is a top plan view of the press in the position shown in Fig. 2. Fig. 4 is a sectional plan view of the baling-chamber, the plunger, and the equalizing mechanism for the plunger. Fig. 5 is a longitudinal sectional view thereof. Fig. 6 is a transverse sectional view taken at a point immediately in rear of the power. Fig. 7 is a similar view of the baling-chamber. Fig. 8 is a detail plan view

of one of the springs used in connection with the baling-chamber for preventing retrograde movement of the compressed material after action by the plunger.

Referring to the drawings, the numeral 1 designates the baling-chamber of the herein-described press, and which chamber comprises the usual slatted body mounted upon longitudinally-disposed sills 2, at the forward end of which is arranged a series of upwardly-extending standards 3, and at whose rear ends is arranged a similar series of standards 4. The forward end of the body 1 is provided with a hopper 5, through which the material to be baled is introduced to the chamber 1, and arranged in the upper portion of the chamber 1 is a top 6, the forward end of which is hingedly connected, as at 7. The chamber 1, as usual, is open at both of its ends, and the top 6 is thereby adapted to freely move within said chamber; but arranged upon the top 6 adjacent to its rear end is a cross-head 8, which cross-head is fixedly connected to the top 6, and passing through the ends of the cross-head 8 is a pair of vertically-disposed rods 9, which extend to a point above the top of the chamber 1. The ends of the cross-head 9 project over the sides of the chamber 1, so that said ends are adapted to rest upon said sides, and encircling the upper ends of the rods 9 is a series of coil-springs 10, which are adapted to rest against the cross-head 8, but to permit the latter being capable of a yielding upward movement, the upper ends of the rods 9 being screw-threaded and adapted to receive a pair of adjustable nuts 11, by means of which the degree of tension of the springs 10 may be regulated. The upper ends of the rear standards 4 are slotted, as at 12, and fitting within said slots are outwardly-projecting lugs 13, carried by the cross-head 8. It will thus be seen that the cross-head 8 is guided in its vertical movement, the lugs 13 freely working within the slots 12.

The numeral 14 designates the power of the herein-described press, which power comprises a series of longitudinally-disposed sills 15, one of which is of less length than the others, and connecting the outer of the sills 15 with the remainder of the series is a pair

of transversely-arranged sills 16. Extending upwardly from the sills 15 is a series of vertical standards 17, and connecting the upper ends of said standards is a horizontal sill 18, 5 braces 19 being employed for firmly holding the standards 17 in relation to the sills 15. A supporting-beam 20 is arranged between two of the sills 15, and mounted within said beam 20 is a vertically-disposed shaft 21, the 10 upper portion of which is squared, as at 22, and mounted upon said squared end is a sweep 23, to which a team may be attached in the usual manner. Mounted upon the shaft 21 is a horizontally-disposed beveled gear 24, 15 and said gear meshes with a vertically-disposed beveled gear 25, mounted upon the inner end of a crank-shaft 26, journaled in two of the uprights 17. It will thus be seen that as the sweep 23 is rotated the shaft 21 is like- 20 wise rotated and motion is imparted to the crank-shaft 26 therefrom through the medium of the gears 24 and 25, and connected to the crank-shaft 26 is a link 27, which link in turn is connected to the beam 28 of a plunger 29 25 through the medium of connecting-straps 30, arranged upon the forward end of the beam 28 and adapted to embrace the sides of the link 27. The plunger 29 is arranged within the forward end of the baling-chamber 1 and is designed to force the charge of material 30 from beneath the hopper 5 into the body of the chamber 1 in the usual manner, and arranged within said chamber 1 at the sides thereof is a series of retaining-springs 31. The springs 35 31 comprise an outer member 32 and an inner member 33, said members being riveted at a point intermediate their ends, and each of said springs is effectually connected to the sides of the chamber 1 to be held in fixed position therein. The free end, however, of the 40 inner member 33 of each of the springs is bent outwardly and at approximately right angles to its body portion to provide an engaging foot 34, the material after passing the body of the member 33 being engaged by the feet 45 34, and thus prevented from backward movement during the outward or backward movement of the plunger.

Arranged upon the plunger-beam 28 is a 50 cross-head 35, and arranged within the end of said cross-head is a pair of eyebolts 36, a pair of similar bolts 37 being connected to the vertical standards 3 at the forward end of the baling-chamber 1. Connected to the 55 eyebolts 36 and 37 is a pair of coil-springs 38, and said springs are adapted to equalize the pressure upon the plunger 29, both on its inward and outward strokes.

In order to connect the power 14 and the 60 baling-chamber 1, a coupling-bar 39 is employed, said bar being effectually connected to the power and having its rear end slidably mounted within supports 40, arranged upon the bottom of the sills 2. It is of course 65 obvious that suitable means must be provided for locking the rear end of the coupling-bar 39 into engagement with the baling-chamber

1, both in the extended position of the press and when the power is closed upon the baling-chamber, as in transportation, and to 70 this end a coupling-pin 41 is employed, said pin being arranged in the forward support 40 and being designed to engage the rear end of the coupling-bar 39 to hold the same in fixed relation to said support. For the pur- 75 pose of transporting the press the baling-chamber 1 and the power 14 are provided with suitable axles 42, upon which axles a series of wheels 43 are mounted in the usual man- 80 ner, and said axles 42 are detachably connected to the baling-chamber and the power, so as to be readily removed therefrom when it is desired to place the press in operative position.

With the parts assembled in the manner 85 illustrated and described the operation of the press is as follows: After the press has been moved to the desired location the power is moved forwardly from the baling-chamber by simply adjusting the coupling-pin 41 in the 90 proper opening in the coupling-bar 39, and after this has been done the axles 42 are removed from said chamber and said power. A team having been hitched to the sweep 23, the press is ready for its initial charge, and after 95 the same has been introduced into the hopper 5 and forced into the chamber 1, the plunger 29 being retracted through the medium of the link 27 from the power 14, it is obvious that the charge is moved inwardly by the plunger 100 29 and beneath the hinged top 6. This operation continues until the desired amount of material has been placed within the chamber 1, the material being compressed at each inward stroke of the plunger 29 and held against 105 movement by the retaining-springs 31. During the outward stroke of the plunger 29 the springs 38 are tensioned, and as the result the inward stroke of the plunger 29 is assisted by the springs resuming their normal or 110 contracted position. This movement of the springs 38 assists the beam in the operation of the plunger; but it will be also observed that on the outward movement of the plunger the beam must necessarily tension the springs, 115 and this tensioning prevents the quick outward movement of the plunger, which would result were the equalizing-springs not employed. A uniformity of movement is there- 120 by imparted to the plunger 29 both on its inward and outward stroke. It will of course be understood that in the use of the press suitable division-blocks are employed in the baling-chamber for separating the bales from 125 each other, and it will also be seen that by tensioning the springs 10 a proper degree of pressure may be imparted to the top 6 in its contact with the material in the chamber 1.

While the form of the invention herein shown and described is what is believed to be 130 a preferable embodiment thereof, it will of course be understood that the same is susceptible of various changes in the form, proportion, and minor details of construction,

and the right is therefore reserved to modify or vary the invention as falls within the spirit and scope thereof.

5 Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

10 1. In a baling-press, the combination with a baling-chamber; of a plunger extending thereinto, a power connected to and adapted to operate the plunger, and a coiled spring connecting the plunger and the baling-chamber, said spring being arranged to exert its tension during the outward movement of the plunger and retard such movements.

15 2. In a baling-press, the combination with a

bal-ing-chamber; of a plunger arranged therein, a power, means for connecting said plunger to said power, a cross-head upon the plunger and outside the baling-chamber, and springs connected to the ends of the cross- 20 head and the baling-chamber for retarding the outward movement of the plunger from the chamber, whereby the stroke of the plunger may be equalized.

In testimony whereof I affix my signature 25 in presence of two witnesses.

CYRUS M. ARNOLD.

Witnesses:

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