

No. 765,682.

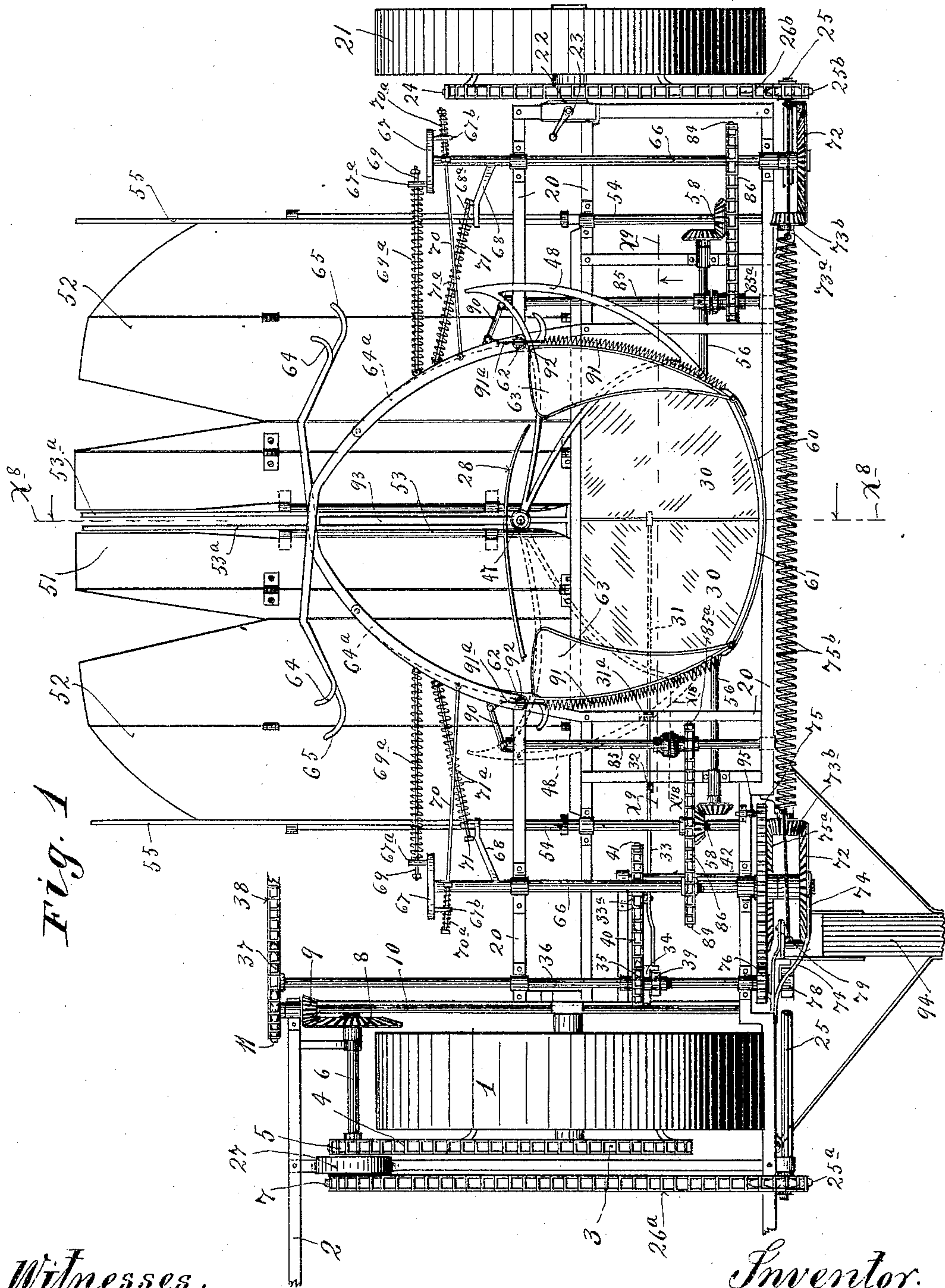
PATENTED JULY 26, 1904.

O. SCHNEIDER.
BUNDLE CARRIER AND SHOCKER.

APPLICATION FILED OCT. 15, 1903.

NO MODEL.

8 SHEETS—SHEET 1.



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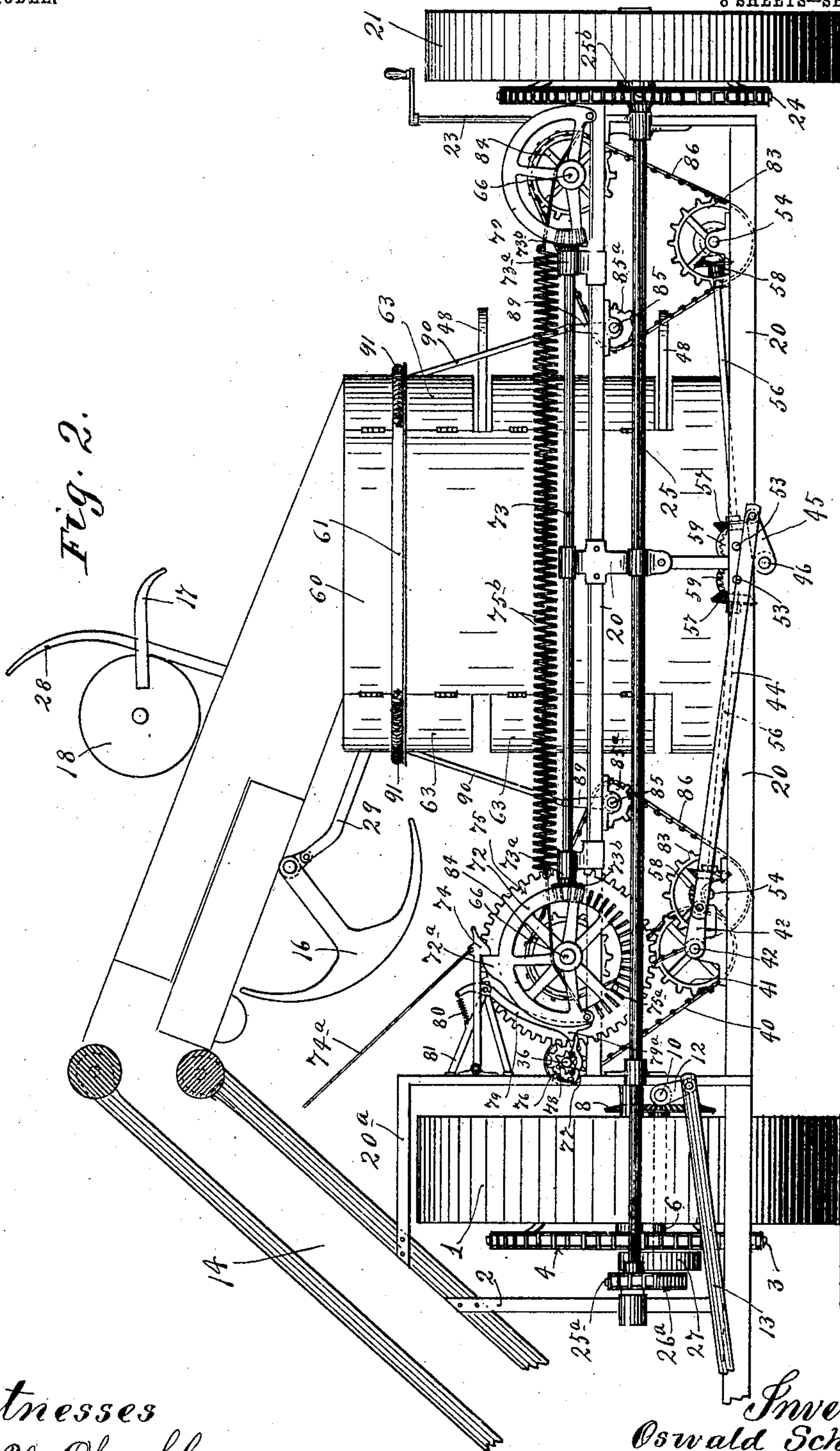
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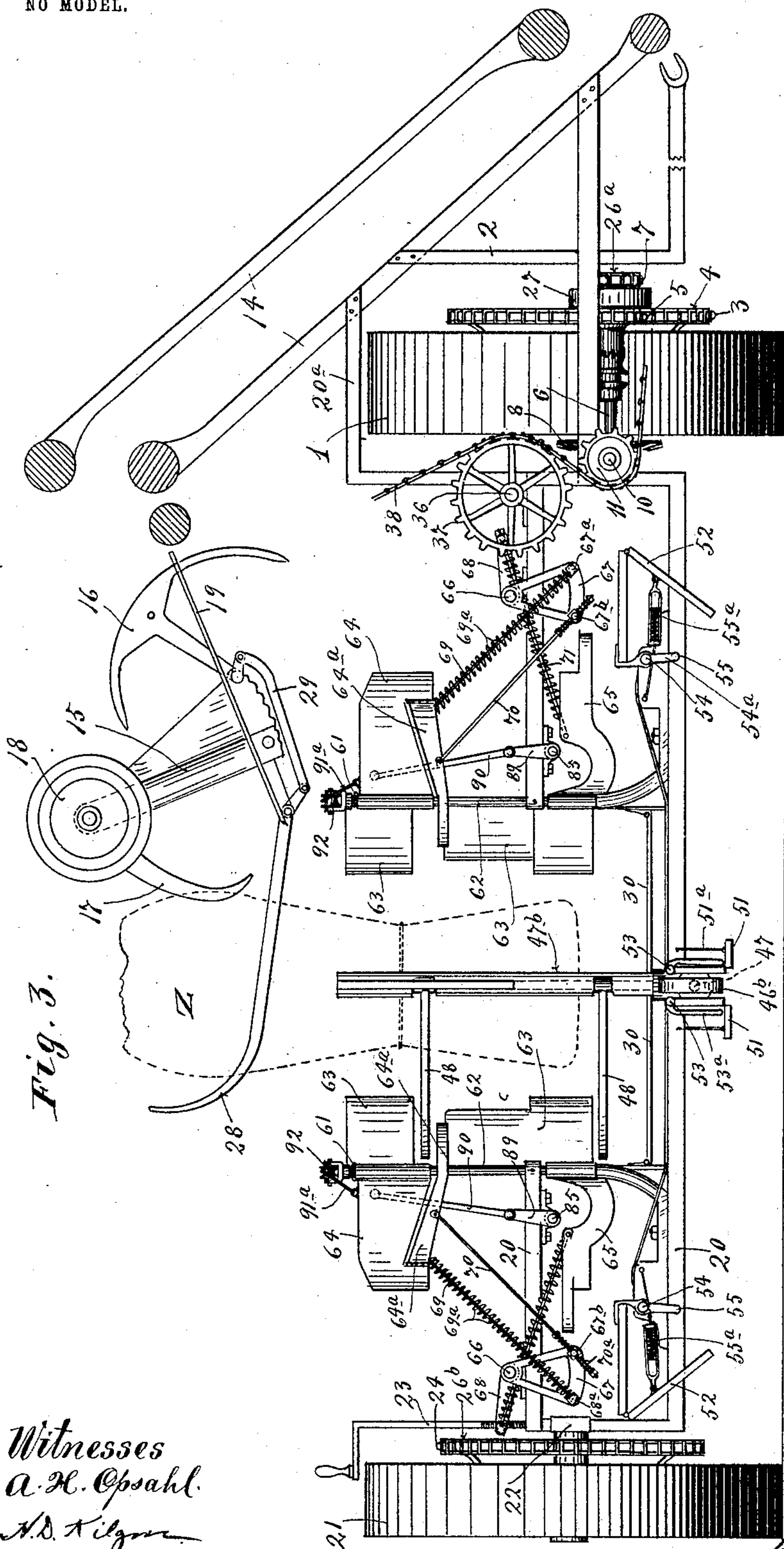
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8 SHEETS--SHEET 4.

Fig. 4.

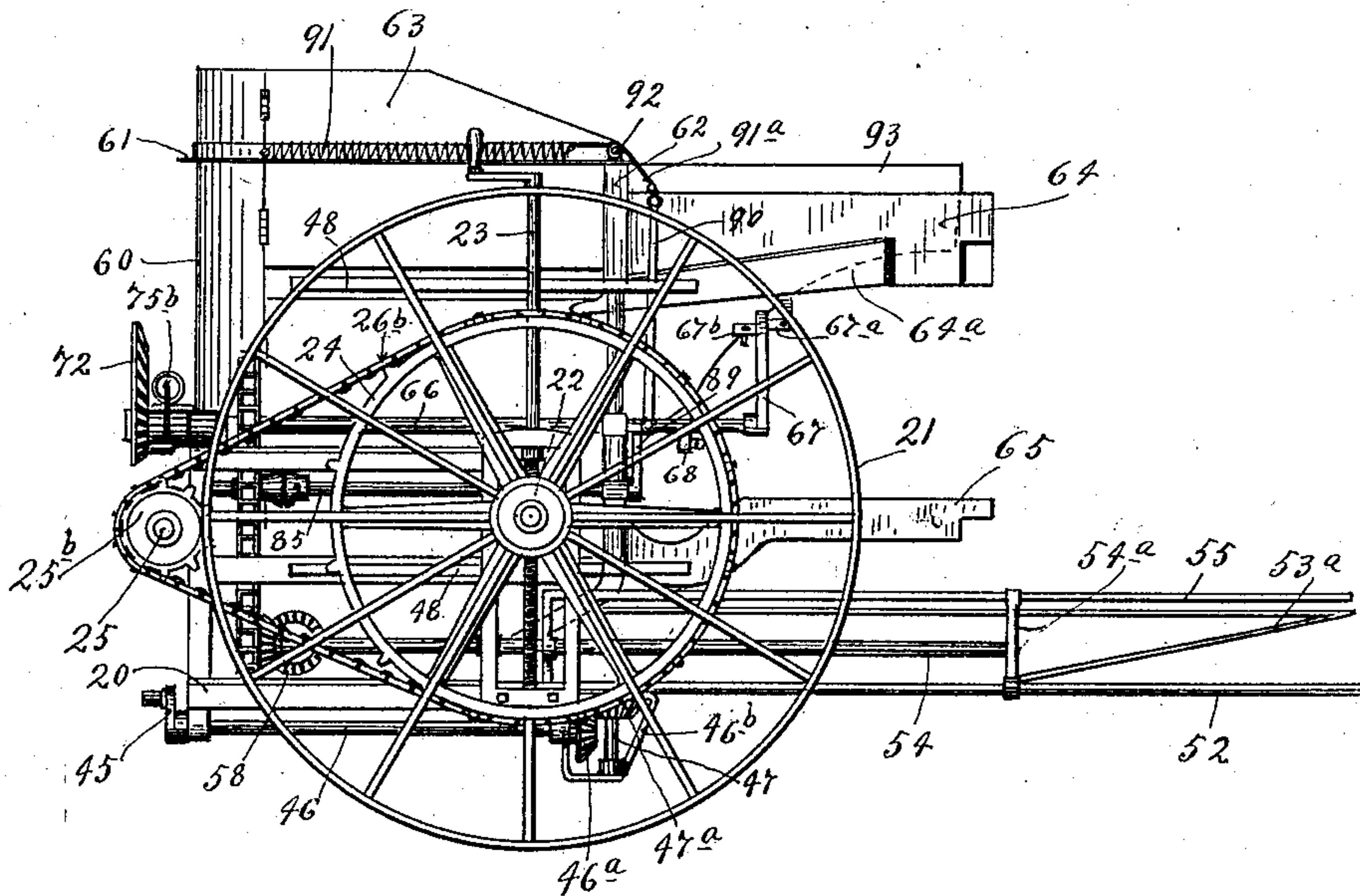
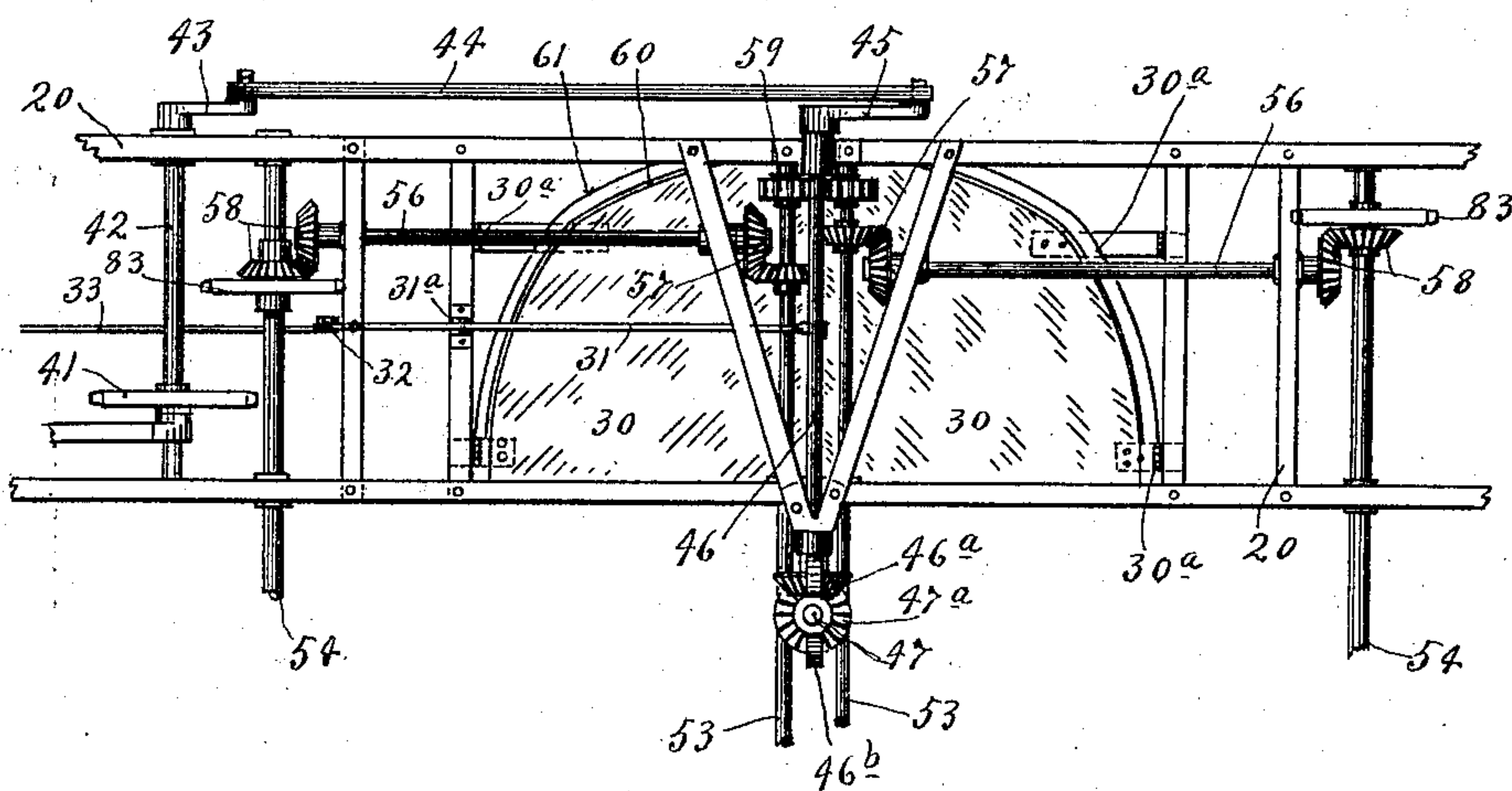


Fig. 5.



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8 SHEETS—SHEET 5.

Fig. 6.

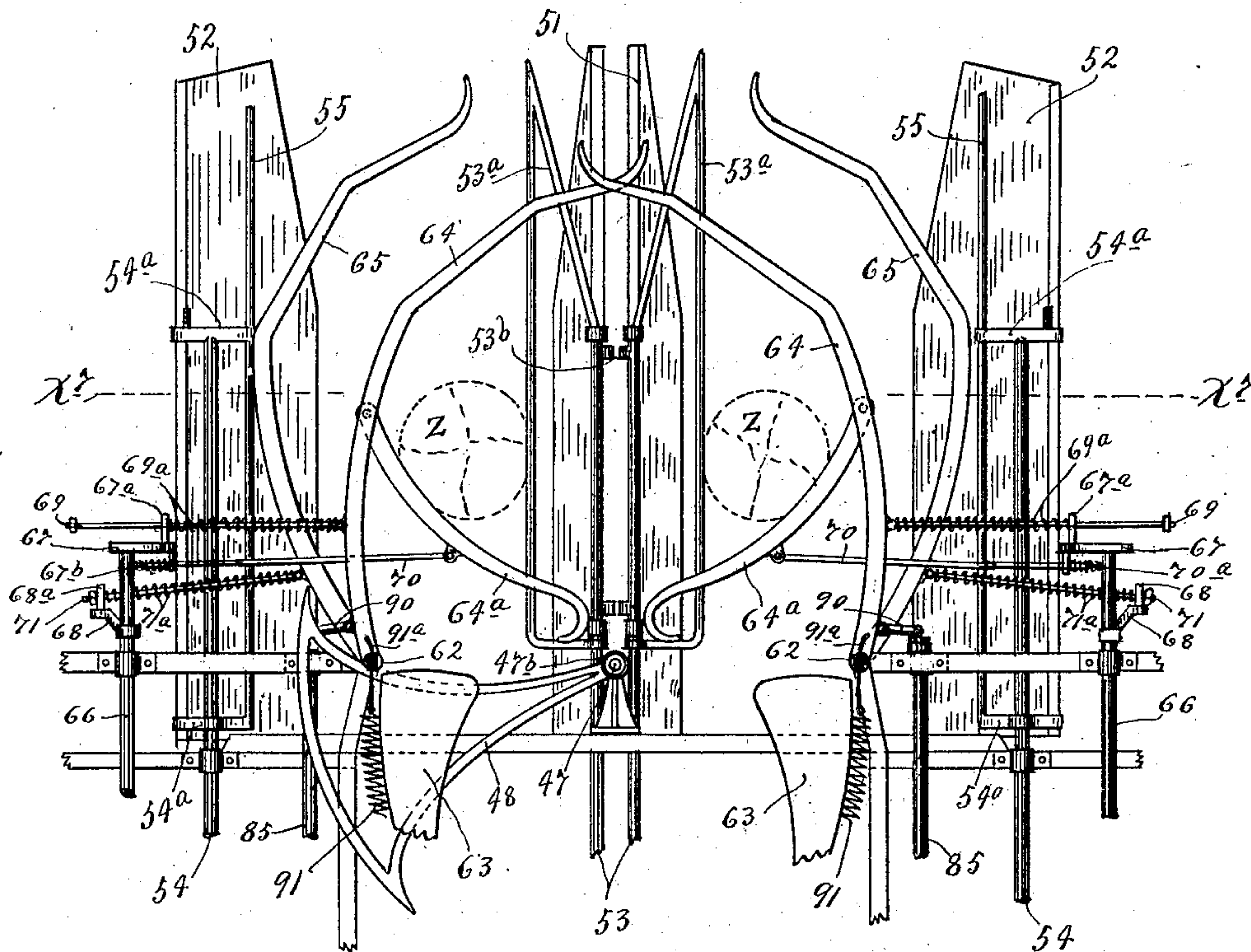
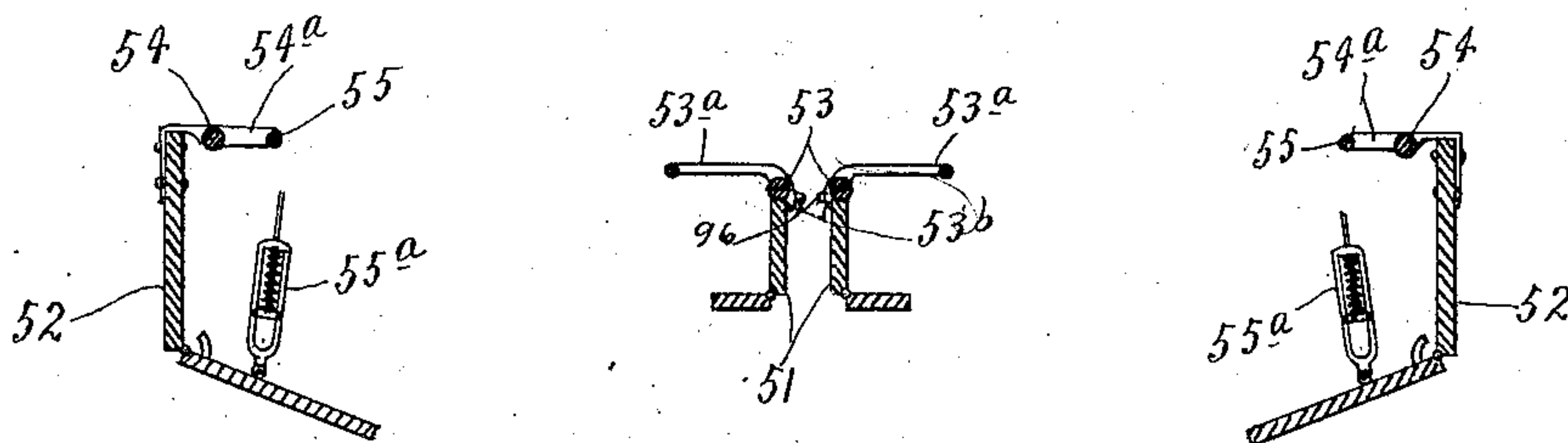


Fig. 7.



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8 SHEETS—SHEET 6.

Fig. 8.

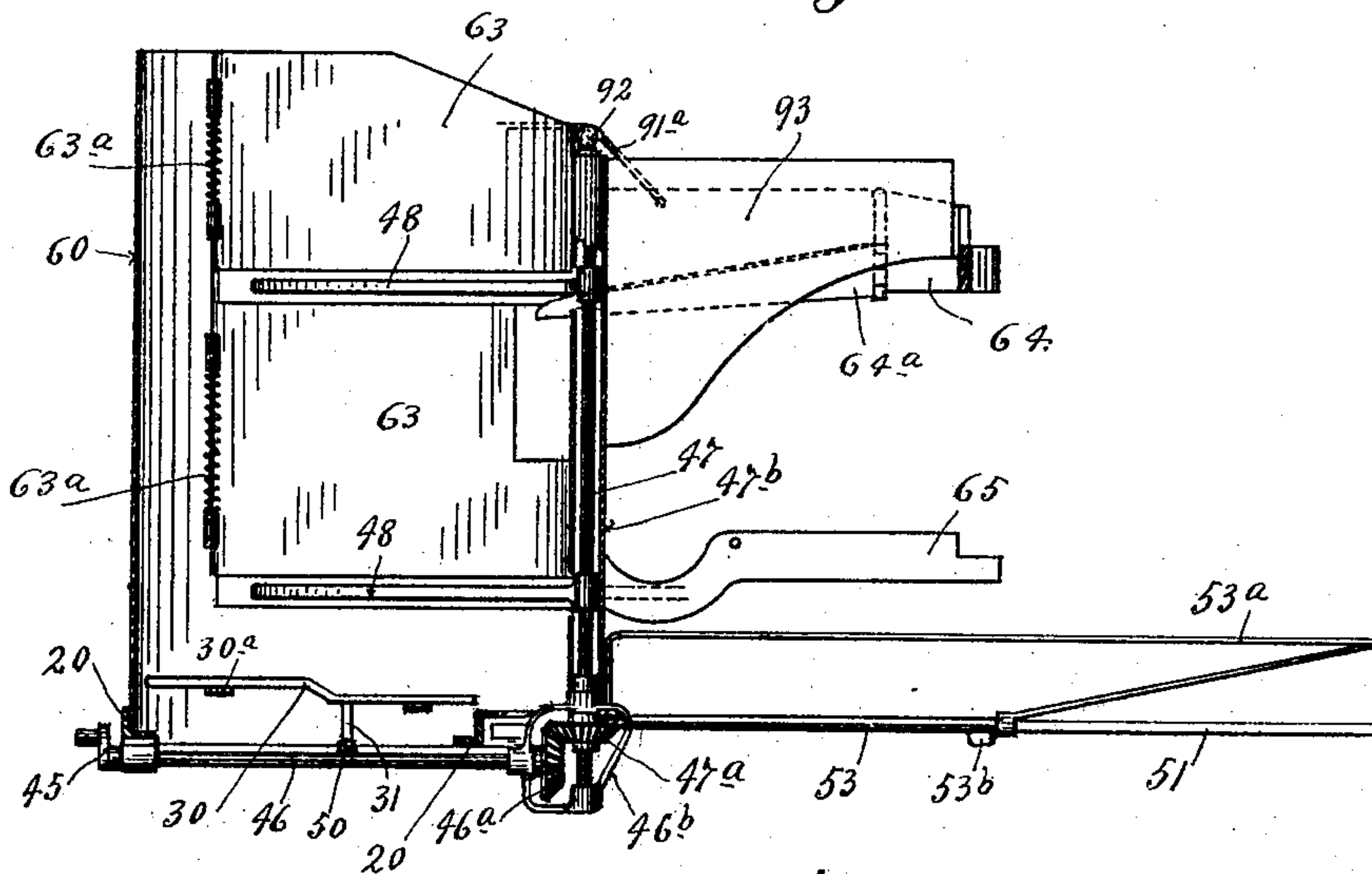


Fig. 9.

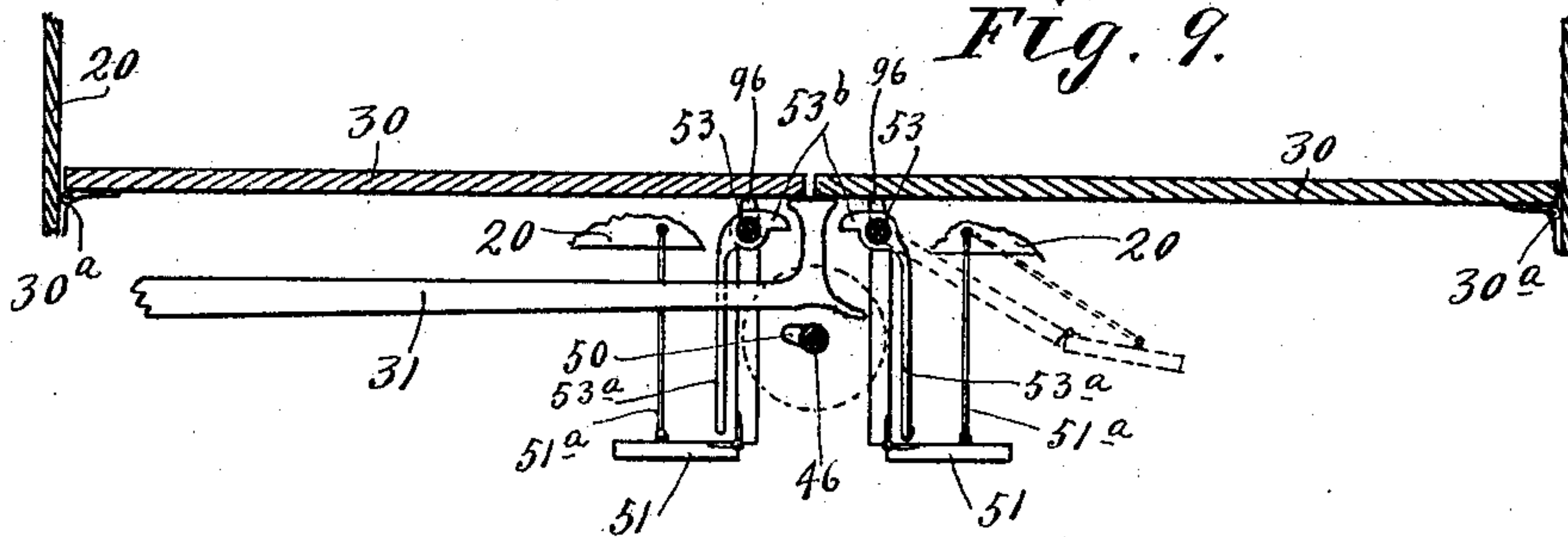


Fig. 10.

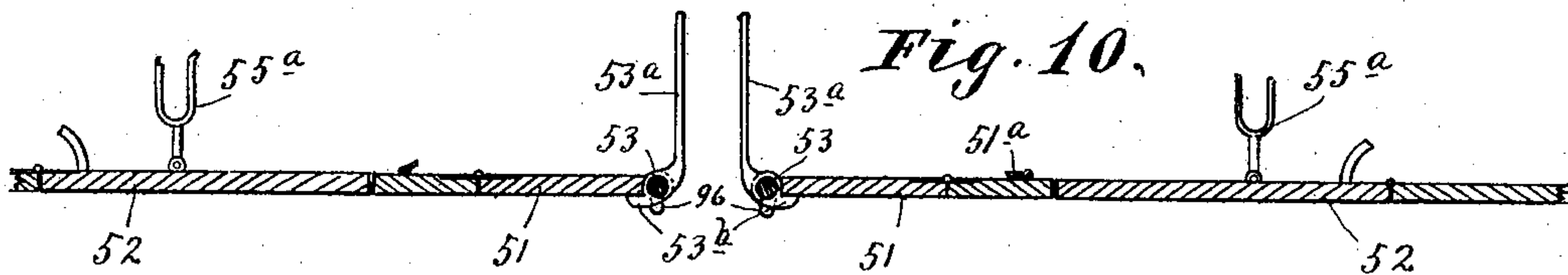
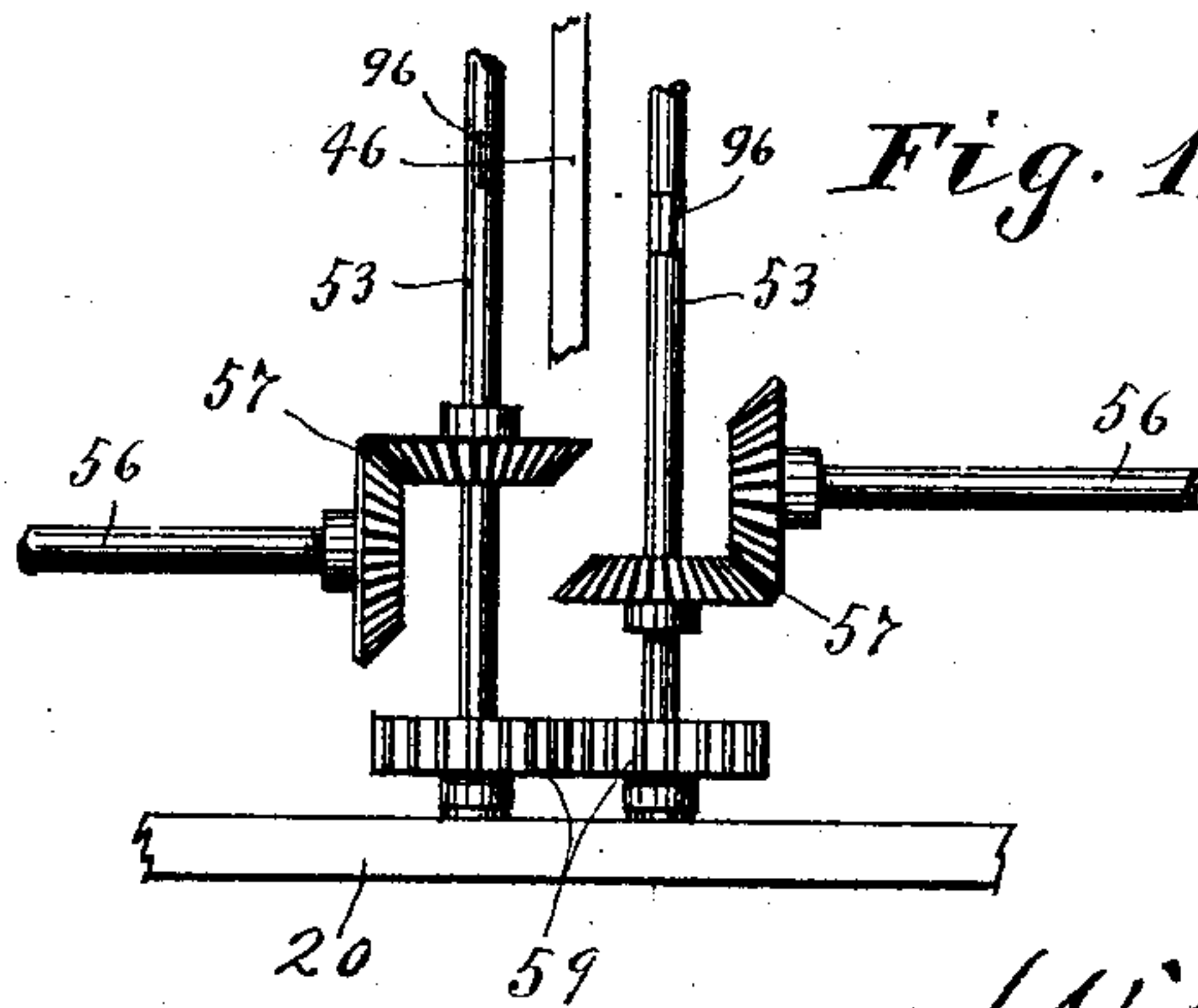


Fig. 11.



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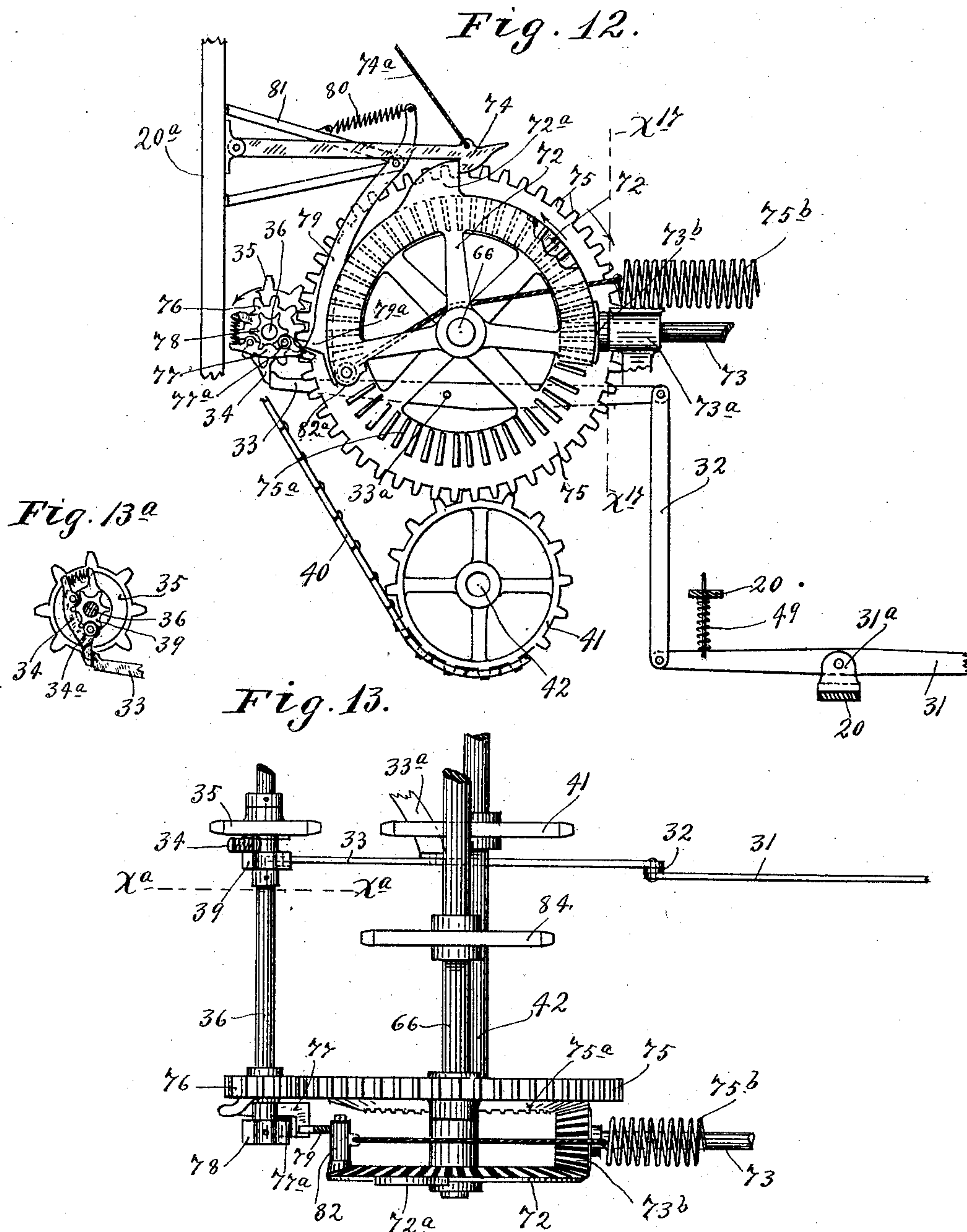
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8 SHEETS—SHEET 7.



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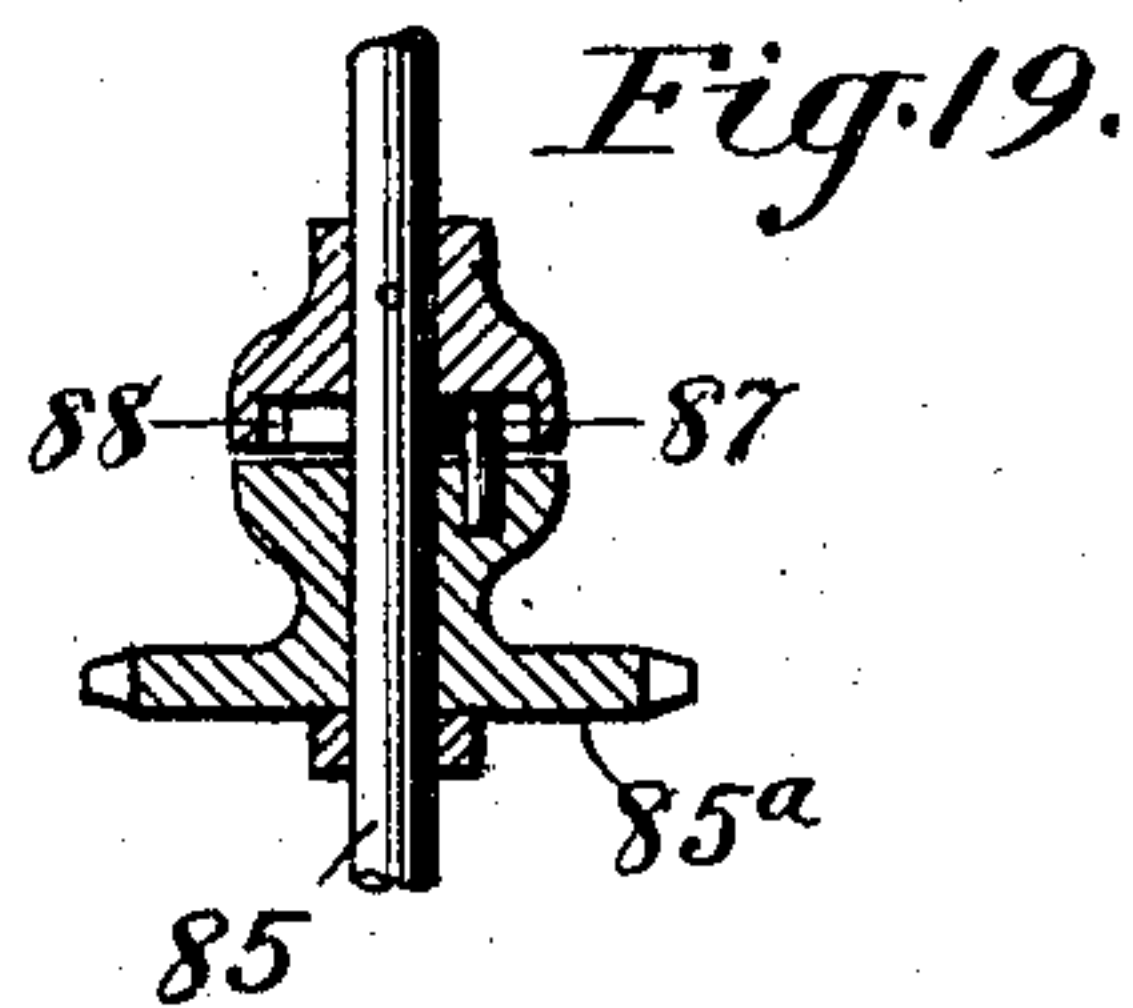
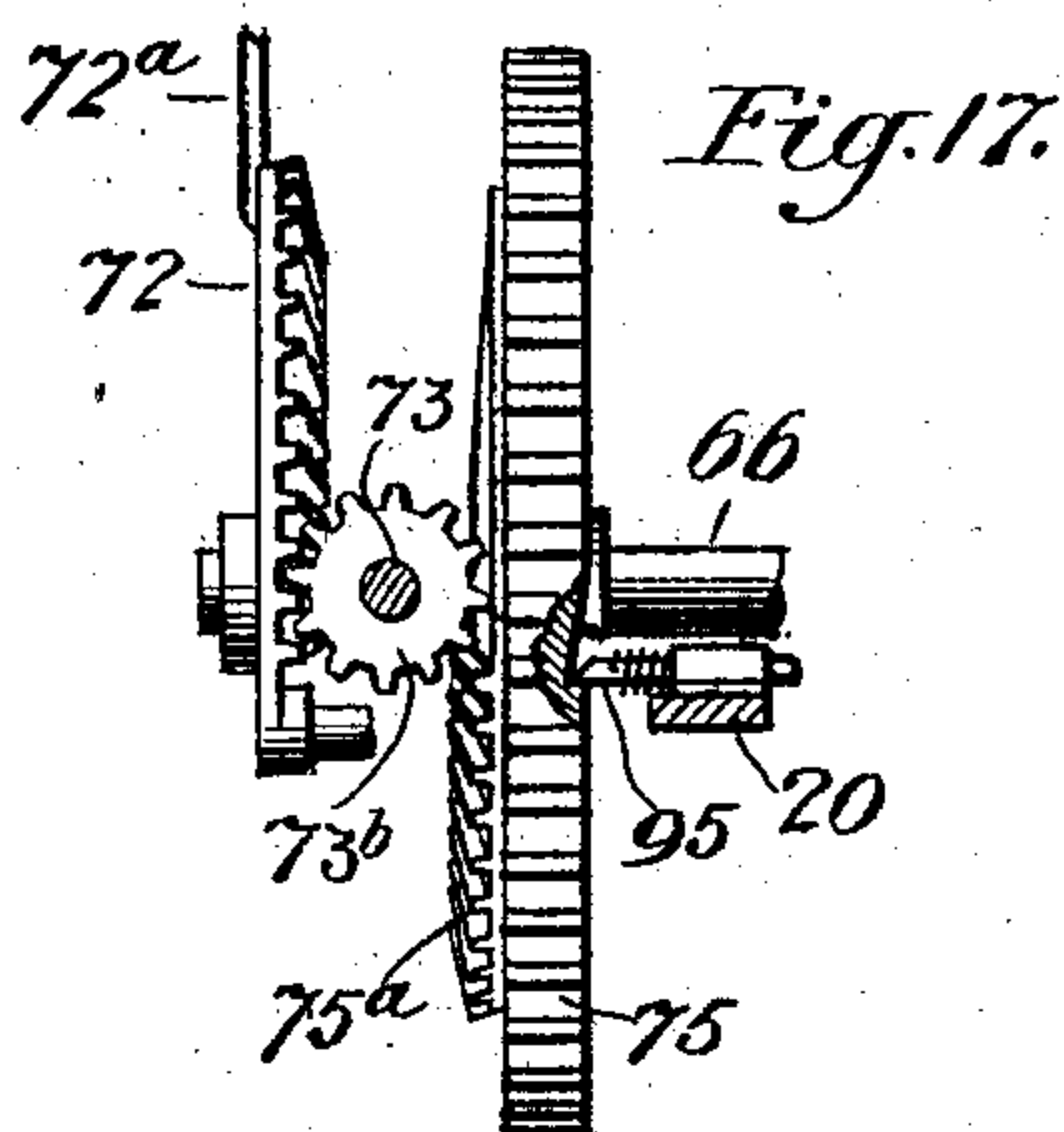
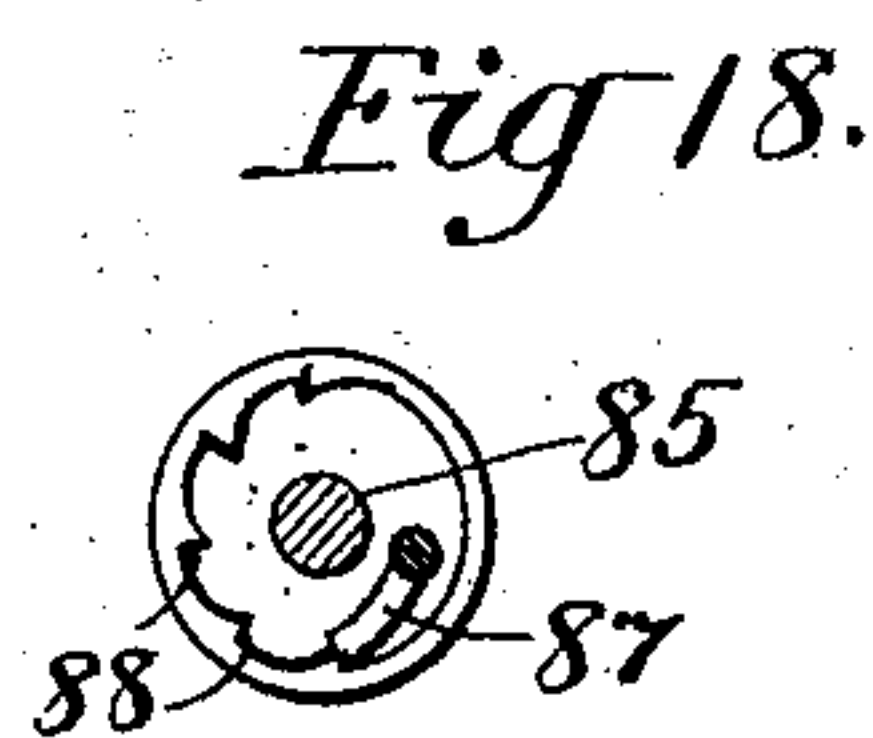
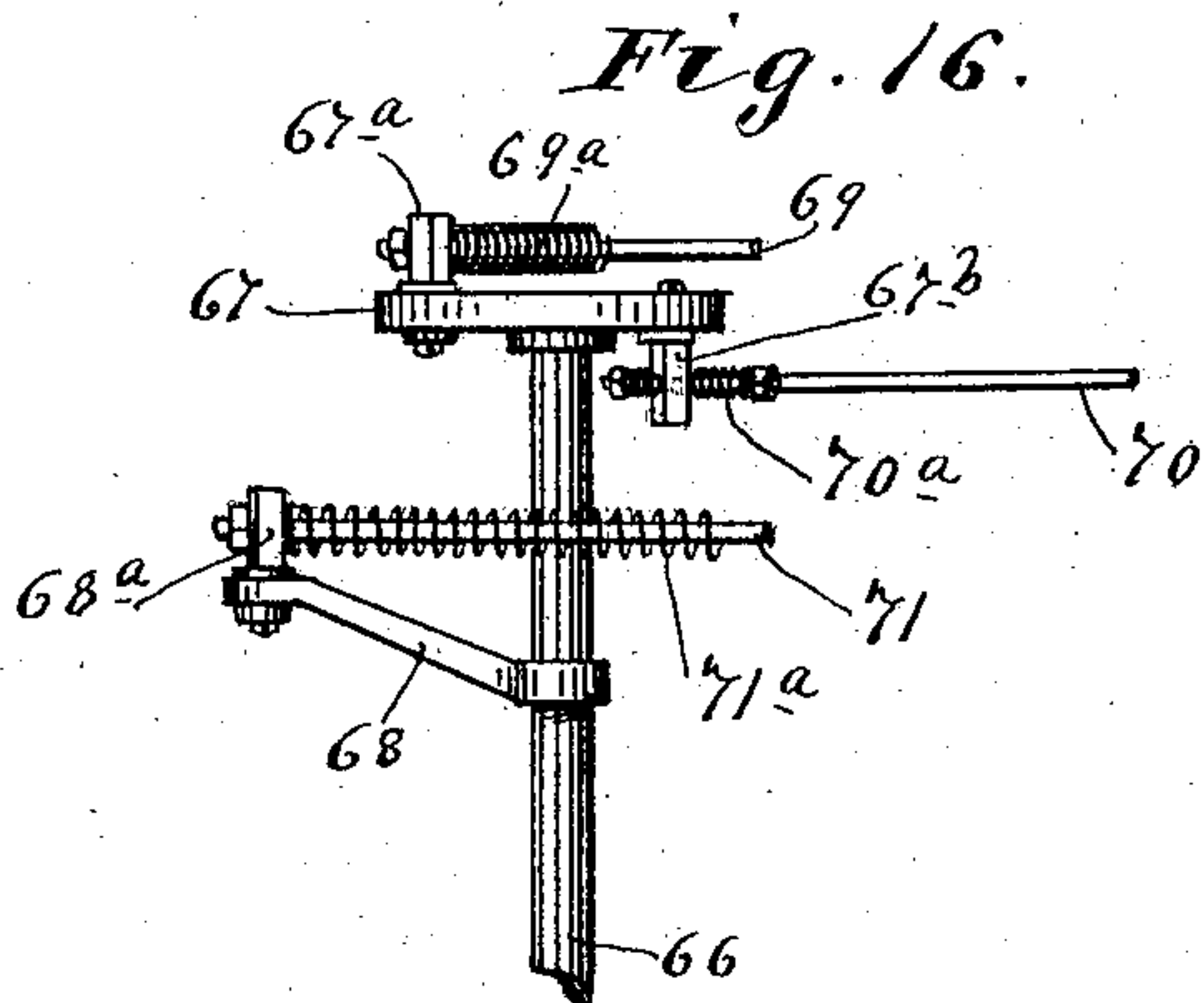
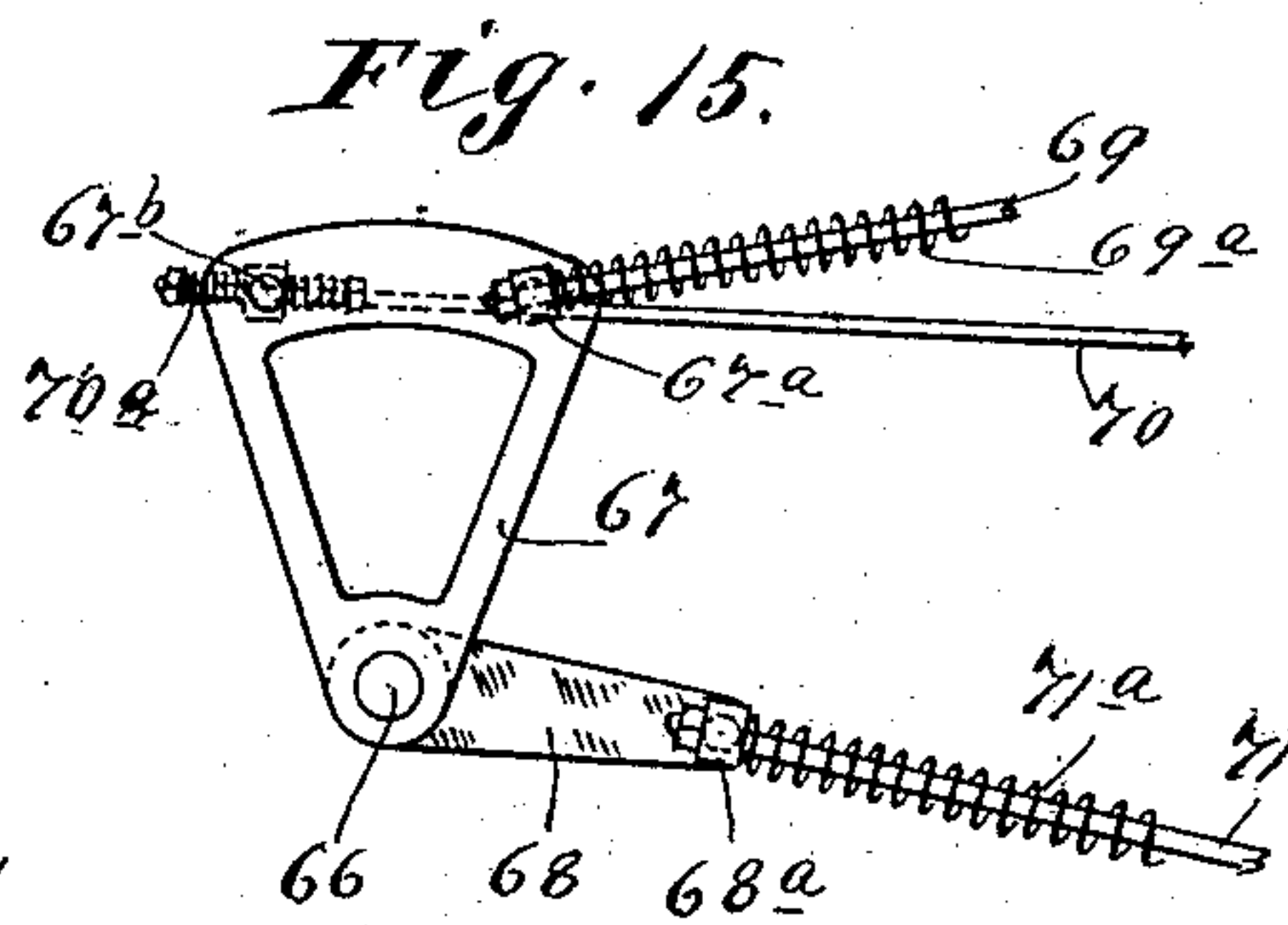
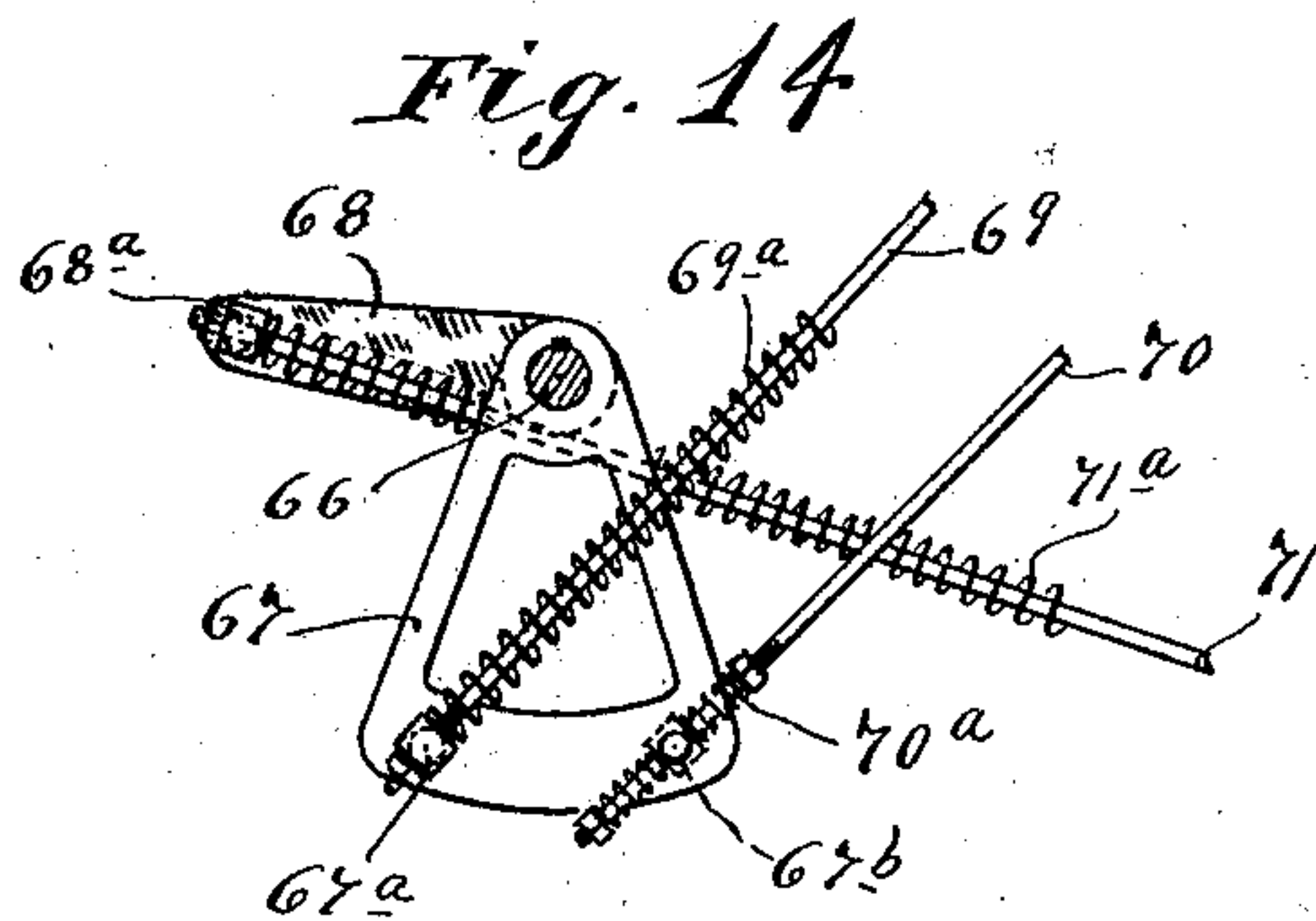
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8 SHEETS—SHEET 8.



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UNITED STATES PATENT OFFICE.

OSWALD SCHNEIDER, OF FAIRFIELD TOWNSHIP, SWIFT COUNTY,
MINNESOTA.

BUNDLE CARRIER AND SHOCKER.

SPECIFICATION forming part of Letters Patent No. 765,682, dated July 26, 1904.

Application filed October 15, 1903. Serial No. 177,108. (No model.)

To all whom it may concern:

Be it known that I, OSWALD SCHNEIDER, a citizen of the United States, residing in Fairfield township, in the county of Swift and State of Minnesota, have invented certain new and useful Improvements in Bundle Carriers and Shockers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an improved bundle carrying and shocking attachment for harvesters; and to this end it consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout these several views.

Figure 1 is a plan view showing the complete attachment and also a portion of the harvester to which it is attached, some parts being broken away. Fig. 2 is a view in front elevation showing the parts illustrated in Fig. 1 and showing diagrammatically also portions of a binder. Fig. 3 is a rear elevation showing substantially the same parts that are illustrated in Fig. 2. Fig. 4 is an end elevation of the attachment looking at the same from the right toward the left with respect to Fig. 2. Fig. 5 is a bottom plan view of the part shown in Fig. 4, some parts being broken away and others removed. Fig. 6 is a plan view showing the central and rear portions of the attachment, other portions being broken away and the dumping-platform being shown as dropped. Fig. 7 is a detail in transverse vertical section taken through the dumping-platform on the line $x^7 x^7$ of Fig. 6. Fig. 8 is a vertical section taken approximately on the line $x^8 x^8$ of Fig. 1. Fig. 9 is a detail in vertical section taken approximately on the line $x^9 x^9$ of Fig. 1 and showing portions of the dumping-platform in dropped position. Fig. 10 is a transverse section taken on the same line as Fig. 7, but showing the dumping-platform in a normal or elevated position. Fig. 11 is a detail in top plan view showing

the nest of intermediate gears, shown also on a smaller scale in Fig. 5. Fig. 12 is a detail in front elevation showing, on an enlarged scale, the trip-gear mechanism, shown also on a smaller scale in Fig. 2. Fig. 13 is a plan view of the parts shown in Fig. 12. Fig. 13^a is a section on the line $x^a x^a$ of Fig. 13. Figs. 14 and 15 are detail views, in rear elevation, showing one of the actuating-heads and connections for operating the yielding bundle-holding wings. Fig. 16 is a bottom plan view of the parts shown in Fig. 14. Fig. 17 is a detail in section approximately on the line $x^{17} x^{17}$ of Fig. 12. Fig. 18 is a detail in transverse vertical section on the line $x^{18} x^{18}$ of Fig. 1, and Fig. 19 is a longitudinal section of the clutch shown in part in Fig. 18.

Before starting with the detail description it should be stated that the combined bundle carrier and shocker is carried by a frame which is supported in part from the frame of the harvester and in part from an independent traction-wheel at the extended side of the attachment.

In the drawings the harvester-frame is shown as extended to form the frame of the attachment; but in practice the two frames may be hinged together or otherwise connected for a yielding action other than that afforded by the spring of the metal frames. The movable parts of the attachment are driven in part from the traction-wheel of the harvester and in part from the traction-wheel of the attachment. The bundles as they are successively discharged from the harvester are arighted or turned vertically with the grain end of the bundle upward and are delivered onto a tripping-platform and from thence are discharged onto a drop-bottom or dumping-platform, where they are accumulated to form a shock, and after having been accumulated in the desired number are dropped in the form of a shock onto the ground.

In the drawings the following parts of the harvester will be first noted, which parts are of ordinary standard construction.

The numeral 1 indicates the traction or "bull" wheel of the harvester, and the numeral 2 the trussed harvester-frame. The

bull-wheel 1 carries a large driving-sprocket 3. A driving-chain 4 runs over the driving-sprocket 3 and over a sprocket 5 of the counter-shaft 6, which counter-shaft is suitably journaled in the frame 2 and carries a sprocket 7 and a bevel-gear 8, which latter meshes with a bevel-pinion 9 of a counter-shaft 10, suitably journaled in the frame 2 and provided at its rear end with a sprocket 11. A crank 12 on the forward end of the shaft 10 operates the sickle-driving pitman 13 of the harvester.

The numeral 14 indicates the elevator of the harvester.

Of the parts of the binder which are partly outlined, but which are of course of the ordinary construction, the numeral 15 indicates the binder-frame, the numeral 16 the needle, the numeral 17 the bundle-discharging arms, the numeral 18 the knotter-actuating cam, and the numeral 19 the binder-deck, onto the latter of which the grain is delivered from the elevator 14.

The skeleton framework of the attachment is indicated as an entirety by the numeral 20, and at its inner end it is, as shown, rigidly attached to the adjacent end of the harvester-frame. The traction-wheel 21 of the attachment is journaled on the trunnion of a vertically-adjustable block 22, which in turn is mounted in the vertical runway in the outer end of the supplemental frame 20 and is adapted to be adjusted vertically by means of a screw-rod 23. This traction-wheel 21 has secured to it a large driving-sprocket 24. A long counter-shaft 25 is journaled in suitable bearings on the forward portion of the supplemental frame 20 and is provided at its ends with sprockets 25^a and 25^b. Sprocket-chain 26^a runs over the sprockets 7 and 25^a, and a sprocket-chain 26^b runs over the sprockets 24 and 25^b. These sprocket-and-chain connections cause the two traction-wheels 1 and 21 to travel in unison when the machine is drawn straight ahead; but to enable the machine to be turned around a corner or to travel on a curve an ordinary compensating gear 27 is employed, the same, as shown, being placed on the shaft 6 between the sprockets 5 and 7. (See Fig. 1.)

The bound bundles as they are discharged from the binder by the discharge-arm 17 are engaged at their grain ends by so-called "arighting-arm" 28, which arm is suitably pivoted to the binder-frame and is connected to a projecting lever of the needle 16 by a link 29. With these connections it is evident that under the receding movement of the needle the arighting-arm 28 will be raised, so that it will lift up the headed end of the bundle and cause the same to fall butt-end downward. Said bundle is indicated by dotted lines marked *z* in Fig. 3. The said arighting-arm is shown in Figs. 1, 2, and 3.

The bundle, which, as just described, is dropped butt-end downward from the binder, falls onto a so-called "trip-platform," which, as shown, is made up of sections 30, that are hinged at their outer edges 30^a to the supplemental frame 20. (See Figs. 1, 3, 5, and 9.) The sections of the trip-platform 30 are supported at their abutting free edges by the headed end of a trip-lever 31, which is pivoted to a bracket 31^a on the frame 20 (see Figs. 9 and 12) and is connected at its other end by a link 32 to a secondary trip-lever 33, which latter lever is pivoted to a bracket 33^a on the frame 20. (See Figs. 1, 12, and 13.)

The free end of the secondary trip-lever 33 normally engages the projecting end of a spring-pressed pivoted clutch-dog 34, which is carried by a sprocket 35, that is loosely mounted on a long counter-shaft 36, mounted in suitable bearings on the supplemental frame 20 and provided at its rearwardly-projecting end with a sprocket 37. A sprocket-chain 38, which is driven in the usual way from the sprocket 11 of the harvester-shaft 10 and also drives other running parts (not shown) of the harvester, runs over the sprocket 37 and imparts a continuous movement to the clutch-shaft 36, just described. A clutch-dog 34 carries a roller 34^a, which engages with a star-wheel 39, rigidly secured on the clutch-shaft 36. Normally the engagement of the secondary trip-lever 33 with the free end of the clutch-dog 34 holds the roller 34^a out of engagement with the star-wheel 39 and permits the clutch-shaft 36 and star-wheel 39 to run while the sprocket 35 stands still.

A sprocket-chain 40 runs over the sprocket 35 and over a sprocket 41, carried by a short counter-shaft 42, journaled in the frame 20 and provided at its forwardly-projecting end with a crank 43. (For this construction see Figs. 1, 2, 12, and 13.) The crank 43 is connected by a pitman 44 to the relatively long crank 45 of another short counter-shaft 46, which is also journaled in the frame 20. (See Figs. 1, 4, 5, and 8.) At its rear end the counter-shaft 46 is provided with a bevel-gear 46^a, which meshes with the bevel-gear 47^a of a vertically-disposed shaft 47. The shaft 47 is journaled in the vertically-disposed bearing-sleeve 47^b, which is rigidly secured to the supplemental frame 20. The two shafts 46 and 47 are also journaled in a gear-nest or yoke-like bearing-bracket 46^b, which is also rigidly secured to the frame 20. (See Fig. 8.) A pair of segmental bundle-packing arms 48 are rigidly secured to the shaft 47 in positions one directly over the other, as best shown in Figs. 1, 6, and 8. The bearing-sleeve 47^b is of course cut away sufficiently to permit free movements of the segmental bundle-discharging arms or packers 48. Normally the bundle-packers 48 stand either as shown by full lines or by dotted lines in Fig. 1, so that in either

position thereof the bundle discharged from the binder may be dropped endwise directly onto the trip-platform 30.

When a bundle is dropped onto the trip-
 5 platform 30, the said platform is depressed or forced downward and, acting on the primary trip-lever 31, forces the free end of the secondary trip-lever 33 out of contact with the free end of the driving-pawl 34, whereupon
 10 the driving-roller 34^a of said pawl engages the star-wheel 39 and imparts one complete rotation to the sprocket 35. One rotation of the sprocket 35 imparts a half-rotation to the sprocket 41, shaft 42, and crank 43, and such
 15 movement of said crank, acting on the relatively long crank 45 through the pitman 44, imparts something less than a half rotation or oscillation to the shaft 46. (See Figs. 2 and 5.)
 20 The said shaft 46 and its crank 45 are in this way oscillated first in one direction and then in the other, and each such oscillation, acting through the gears 46^a 47^a and on the vertical shaft 47, serves to carry the bundle packers or arms 48 from one extreme position to the other, as
 25 indicated by full and dotted lines in Fig. 1. Under the above reverse oscillating movements of the bundle-packing arms 48 the bundles will be forced or carried laterally from the trip-platform first in one direction and then in
 30 the other. When a bundle is swept from the tripping-platform by the packing-arms 48, the sections of said platform and the trip-levers 31 and 33 will be restored to normal positions by a compression-spring 49, (shown
 35 as applied between the lever 31 and a portion of the frame 20,) as shown in Fig. 12. The secondary trip-lever 33 being thus restored to normal position will of course intercept the driving-pawl 34 and trip the same out of ac-
 40 tion upon the completion of the rotation of the sprocket 35, which carries the same. To further insure this action, the horizontal oscillating shaft 46 is provided with a tappet or lug 50, (see Fig. 9,) which engages the free
 45 end of the primary pitman-lever 31 and positively forces upward the engaged end of said lever at the proper times under both directions of movement of said shaft.

The bundles swept or discharged from the
 50 tripping-platform by the packing-arms 48 are delivered onto a so-called "dumping-platform." (Best shown in Figs. 1, 3, 6, 7, 8, 9, and 10.) This dumping-platform is made up of two parts, and each part is made up of two
 55 hinged leaves 51 and 52, that are adapted to drop to discharge the bundles of the shock accumulated thereon. The leaves 51, as well as the leaves 52, are made up each of two hinged sections. The inner leaves 51 are loosely piv-
 60 oted or hinged on rock-shafts 53, that are suitably journaled in the supplemental frame 20 and project rearward therefrom, as best shown in Figs. 1 and 6. The rearwardly-projecting ends of the rock-shafts 53 are bent
 65 upon themselves and then brought forward

to form bail-like dividers 53^a. Said rock-shafts 53 are further provided with laterally-projecting lugs 53^b, (see particularly Figs. 6 and 7,) which engage the inner leaves 51, as hereinafter described.

The outer leaves 52 are rigidly attached to projecting arms 54^a of rock-shafts 54, which, like the rock-shafts 53, are suitably journaled in the supplemental frame 20 and project rearward therefrom, as best shown in Figs. 75
 5, 6, and 7, but also in Fig. 1. Bail-like side guides 55 are secured to the rearwardly-projecting ends of the two outside shafts 54. The hinged free edged sections of the dump-
 80 ing-platform wings 52 are connected to portions of the supplemental frame 20 by elastic or spring link connections 55^a. (See Figs. 3 and 7.) These spring connections 55^a cause the hinged sections of said wings to fold, as indicated in said Figs. 3 and 7, and thus to clear
 85 both the ground and the bundles which are dropped to form the shock. The four platform supporting and operating shafts 53 and 54 are connected for reverse rocking movements in pairs by means best shown in Figs. 1, 5, and
 90 11, wherein the numeral 56 indicates short counter-shafts suitably mounted in the supplemental frame 20. These counter-shafts at their inner ends are coupled to the rock-shafts 53 by mitered gears 57, and at their
 95 outer ends they are coupled to the rock-shafts 54 by miter-gears 58. A pair of intermeshing gears 59, one on each shaft 53, connect the said shafts for reverse rocking move-
 100 ments.

Rigidly supported from the supplemental frame 20 just in front of the tripping-platform 30 is a curved vertically-disposed plate 60. A horizontally-extended curved angle-
 105 iron bar 61 connects the upper portion of the plate 60 to the upper ends of vertical pivot posts or standards 62, which posts are rigidly secured at their lower ends to the said frame 20.

Hinged to each vertical edge of the plate 60
 110 is a pair of approximately wedge-shaped bundle-detainers 63, which, as shown, are yieldingly pressed inward to positions indicated in Fig. 1 by means of torsional springs 63^a, (see Fig. 8,) which springs are shown as applied
 115 to the hinges of the said members 63.

As the bundles are swept off from the tripping-platform by the bundle-packing arms 48 the said bundle-detainers 63 will yield to permit the bundles to freely pass, and as the
 120 bundles reach the dumping-platform they pass beyond said bundle-detainers, and the latter then spring back into their normal positions, (shown in Fig. 1,) and hold the said bundles on the dumping-platform against re-
 125 turn movement with the said arms 48. The so-called "bundle-detainers" 63 are so spaced apart vertically that the packing-arms 48 may freely pass between the same. (See Figs. 3 and 8.)
 130

To each pivot-post 62 is pivoted an upper and a lower grapple-arm 64 and 65, respectively, and to the upper arms 64 are pivoted inwardly-extended grapple-levers 64^a.

5 Mounted in suitable bearings on the supplemental frame 20 and extending from front toward the rear of the machine, one on each side of the tripping-platform and the dumping-platform, is a rock-shaft 66. The rock-
10 shafts 66 at their rear ends are provided with segmental heads 67 and radial arms 68. The heads 67 have laterally-projecting swiveled studs 67^a and 67^b, and the arms 68 are provided with similar swiveled studs 68^a. Op-
15 erating-rods 69, 70, and 71 are pivotally connected, respectively, to the grapple-arms 64, their grapple-levers 64^a, and to the lower grapple-arms 65. The rods 69, 70, and 71, respectively, work loosely through the swiveled studs 67^a, 67^b, and 68^a and are respec-
20 tively subject to coiled springs 69^a, 70^a, and 71^a. Normally the said parts stand as shown in Figs. 1 and 15. Secured to the forward ends of the rock-shafts 66 are segmental bevel-
25 gears 72. (See Figs. 1, 2, 13, and 17.) Extending transversely of the machine and suitably mounted in bearings 73^a on the forward portion of the frame 20 is a long rock-shaft 73, having at its end bevel-pinions 73^b, that
30 mesh with the segmental bevel-gears 72 of the rock-shafts 66. The connections just described cause the rock-shafts 66 to move simultaneously in reverse directions. The left-hand segmental gear 72, as viewed in Fig. 2
35 and also shown in Figs. 1 and 12, is provided with a lock-lug 72^a, that is normally engaged and held by a lock-pawl 74, which, as shown, is pivoted on a bracket 20^a, that connects the supplemental frame 20 with the elevator 14.
40 A long and heavy coiled spring 75^b, which is attached to the segmental gear 72, as best shown in Fig. 2, tends to draw the said gears toward each other, such movement being normally prevented by the engagement of the
45 said pawl 74 with said lug 72^a. A trip connection 74^a extends from the free end of the lock-pawl 74 to a suitable point, preferably to a point within the reach of the driver of the harvester.
50 On the left-hand rock-shaft 66, as viewed in Figs. 1, 2, 12, and 13, is loosely mounted a large spur-gear 75, that meshes with a spur-pinion 76, loosely mounted on the constantly-running shaft 36. The gear 75 on one face
55 carries a segmental bevel-gear 75^a, that extends through an arc of one hundred and eighty degrees. These segmental gears 72 are never thrown out of mesh with the pinions 73^b; but the segmental gears 75^a engage said pinions in-
60 termittently under successive rotations of the gears 75. The spur-pinion 76, like the sprocket 35, carries a spring-pressed pivoted driving-dog 77, that carries a driving-roller 77^a. Said driving-roller is adapted to be engaged with a
65 star-wheel 78, carried at the extreme forward

end of the constantly-running shaft 36, as best shown in Figs. 2, 12, and 13. A trip-lever 79, which, as shown, is subject to a spring 80 and is pivoted to a bracket 81 on the frame extension 20^a, is provided at its depending
70 free end with a trip-lug 79^a, that normally engages the free end of the driving-pawl 77 and holds its roller 77^a out of engagement with the star-wheel 78, so that the pinion 76 and parts driven therefrom will normally stand
75 still. The spring 80 tends to throw the trip-lever 79 out of its normal position, (shown in Fig. 12;) but the said lever is normally held in such position by the engagement with the lower end thereof of a sleeve 82, carried by a
80 stud on the left-hand bevel-gear 72 and to which, as shown, one end of the long coiled spring 75^b is attached. The rock-shafts 54 are further provided with sprockets 83, while the rock-shafts 66 are further provided with
85 sprockets 84. Suitably mounted on the supplemental frame 20, extending from front toward the rear of the machine, one on each side of the shock-holding devices, is a counter-shaft 85, having a sprocket 85^a, over which
90 and the coöperating sprockets 83 and 84 runs a sprocket-chain 86, as best shown in Figs. 1 and 2. The sprockets 85^a are loose on the shafts 85, and the hubs thereof carry driving-pawls 87, that coöperate with the internal
95 ratchet-teeth of hubs 88, which are pinned or otherwise rigidly secured on the respective shafts 85. (See Figs. 18 and 19.) On the rear ends of the shafts 85 (see Figs. 1, 2, and
100 3) are short cranks 89, that are connected by links 90 to the upper members of the grapple-arms 64, such connections being made by ball-and-socket joints or other joints permitting the free swinging movement of said arms.
105 It must be here stated that these grapple-arms 64 are free for limited vertical sliding movements on the pivot-posts 62 and are normally yieldingly held upward, as shown in Figs. 2 and 3, by means of strong coiled springs 91,
110 which springs are shown as attached at their forward ends to the angle-iron rib or bar 61 and provided at their rear ends with flexible extensions 91^a, that run over guide-sheaves 92 on the upper ends of the pivot-posts 62 and are attached to the said arms 64.
115

93 is an upright dividing-plate, which is rigidly secured at one end to the bearing-sleeve 47^b.

94 indicates the pole of the harvester.

95 indicates a spring-pressed pawl (see Figs. 1 and 17) that normally holds the gear 75 against backward rotary movements. On the rock-shafts 53 are lugs 96, which when the dumping-platform is dropped engage the trip-
120 platform 30 and prevent the same from tripping at this time, as shown in Fig. 9.
125

When the bundles have been accumulated on the dumping-platform in the required number to form the proper shock, the operator pulls on the connection 74^a and raises the lock-
130

dog 74 out of engagement with the lug 72^a of the left-hand segment-gear 72. This being done, the spring 75^b imparts movements to the two gears 72 by drawing the same toward each other. Such movements of the gears 72 carry the sleeve 82 of the left-hand gear out of engagement with the free end of the trip-lever 79, whereupon the spring 80 throws the said lever toward the right with respect to Fig. 12 and releases its lug 79^a from the free end of the driving-dog 77. The said driving-dog being thus released is under the action of its spring thrown outward, so that its roller 77^a will be engaged by the star-wheel 78, thus coupling the pinion 76 to the running-shaft 36 and starting the gear 75 into action. The spring 75^b will rotate the shafts 66 and gears 72 about one hundred and eighty degrees, which is sufficient to drop the sections of the dumping-platform and deposit the shocks of bundles on the ground. The rocking movements thus imparted to the rock-shafts 66 by the spring 75 will, through the chains 86, oscillate the sprockets 83 and their shafts 54 through an arc of approximately one hundred and eighty degrees and will further oscillate the sprockets 85^a through more than one hundred and eighty degrees. Again, the above-described oscillating movements of the shafts 66, acting on the rods 69, 70, and 71, will draw outward and away from the shock the lower grapple-arms 65 and will press more tightly onto the shock the upper grapple-arms 64 and their levers 64^a, which movements are illustrated in Fig. 6. The oscillation of the sprockets 85^a will drive the shafts 85 forward, thereby throwing the cranks 89 downward and carrying the same beyond dead-centers opposite from those illustrated in Figs. 2 and 3. Such movements of the said cranks draw downward the upper grapple-arms 64 and their levers 64^a, so that they keep contact with the bundles of the shock while it is being lowered onto the ground. Just in advance of this movement, however, the sections of the dumping-platform have been dropped first into positions indicated in Fig. 7 and then into positions indicated in Fig. 3 under the oscillation imparted in the manner just described to the rock-shafts 54. When the cranks 89 have been moved downward beyond their dead-centers, the springs 91, acting on the grapple-arms 64, draw the same upward with a quick movement, which is permitted by the pawl-and-ratchet device shown in detail in Figs. 18 and 19 and already clearly described. In other words, the cranks 89, having passed their lower dead-centers, are under the action of said springs caused to jump ahead, as it were, of the driving-sprocket 85^a and return to normal positions by movements in a constant direction.

Under the rocking movements transmitted to the platform rock-shafts 53 and 54 from the rock-shafts 66 the divider-bail 53^a and the

guide-bails 55 are moved toward each other, so as to force the lower ends of the bundles off from the drop-sections of the dumping-platform.

After the above-described discharging and dumping movements have taken place the segmental gear 75^a is moved into action on the left-hand pinion 73^b and by reversing the movement of the two pinions 73^b and its shaft 73 positively drives the two segmental gears 72 backward to normal positions, where they are again locked by the engagement of the lock-pawl 74 with the lug 72^a. As the left-hand segmental gear 72 is returned to normal position its sleeve 82 again forces the trip-lever 79 into position to intercept the driving-pawl 77 and again release the pinions 76 from the shaft 36, thus bringing the parts again to a dead stop, as indicated in Fig. 12.

It is of course evident that when the driving mechanism above described is returned to normal position the sections of the dumping-platform and the grapple-arms and other devices operating upon the shock of bundles will also be restored to normal positions.

It will be further understood that the machine described is capable of many modifications within the scope of the invention herein set forth and claimed.

What I claim, and desire to secure by Letters Patent of the United States of America, is as follows:

1. The combination with a harvester and binder of a tripping-platform for receiving the bundles from the binder, a dumping-platform comprising hinged sections receiving the bundles from said tripping-platform alternately-acting bundle-packing arms delivering the bundles first in one direction and then the other off from said tripping-platform onto said dumping-platform, and means for operating the said packing-arms and for tripping said dumping-platform controlled by said tripping-platform, substantially as described.

2. In a shocking device, the combination with a tripping-platform receiving the bundles from the binder, and a dumping-platform having hinged sections, of one or more packing-arms for delivering the bundles from said tripping-platform onto said dumping-platform, and yielding grapple-arms coöperating with said dumping-platform to hold the bundles in a shock, substantially as described.

3. In a shocking device, the combination with a tripping-platform receiving the bundles from the binder, and a dumping-platform having hinged sections, of one or more packing-arms for delivering the bundles from said tripping-platform onto said dumping-platform, means for operating said packing-arms, arranged to be tripped into action by said tripping-platform, upper and lower pairs of grapple-arms coöperating with said dumping-platform to hold the bundle in a shock, the upper pair of grapple-arms having a limited vertical

movement to lower the shock when the dumping-platform is dropped, and means for forcing the upper grapple-arms against the shock and for retracting the lower grapple-arms therefrom when said dumping-platform is dropped, substantially as described.

4. In a shocking device, the combination with a tripping-platform for receiving the bundles from the binder, of a dumping-platform made up of hinged sections, one or more packing-arms for delivering the bundles from said tripping-platform onto said dumping-platform, and overlapping spring-pressed bundle-intercepting arms operating on the bundles delivered onto said dumping-platform to hold the same upright and prevent them from tipping backward onto said tripping-platform.

5. In a shocking device, the combination with a dumping-platform upon which the bundles are accumulated to form a shock, of grapple-arms coöperating with said platform to hold the bundles in the form of a shock, and means for actuating said dumping-platform and said grapple-arms, comprising a pair of laterally-spaced rock-shafts, driving connections to the said parts operated thereby, be-

eled gears on said rock-shafts, an intermediate rock-shaft having pinions meshing with said beveled gears, a lock normally holding said beveled gears against movement, means for tripping said lock, a segmental bevel-gear intermittently engageable with one of the beveled pinions of said intermediate rock-shaft to restore the parts to normal positions, and means for driving said beveled gear and intermittently throwing the same into or out of action at the proper times, substantially as described.

6. A shocking device comprising a dumping-platform constructed to drop the shock in two sections, and a pair of pivoted dividers located centrally of said platform and having connections therewith arranged to move the dividers pivotally away from each other when said platform is dropped, to thereby spread apart the lower portions of the two parts of the shock, substantially as described.

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

OSWALD SCHNEIDER.

Witnesses:

E. H. KELIHER,

F. D. MERCHANT.