

No. 891,756.

PATENTED JUNE 23, 1908.

G. P. WHITE.
CONCRETE MIXER.

APPLICATION FILED SEPT. 17, 1906.

3 SHEETS—SHEET 1.

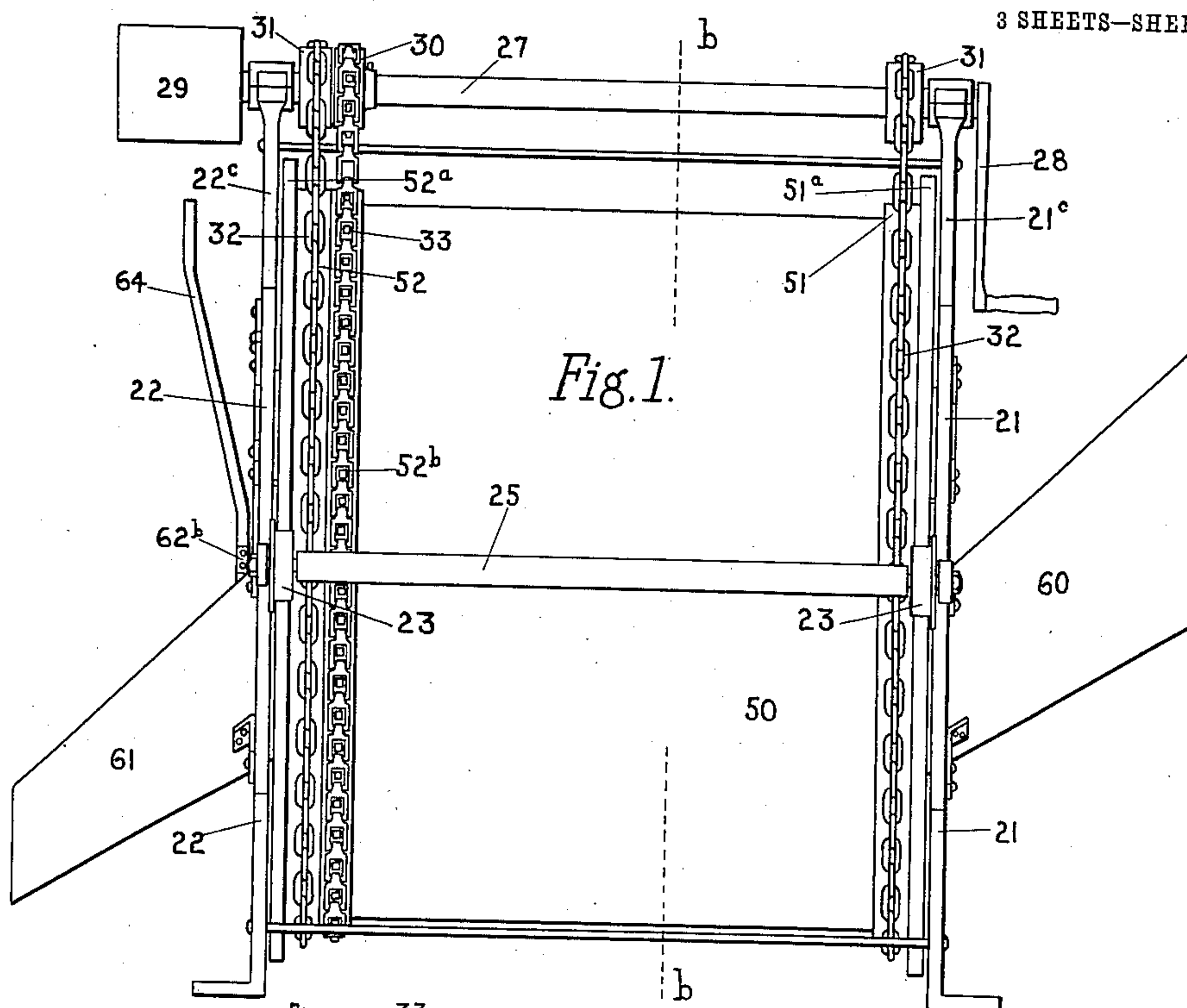


Fig. 1.

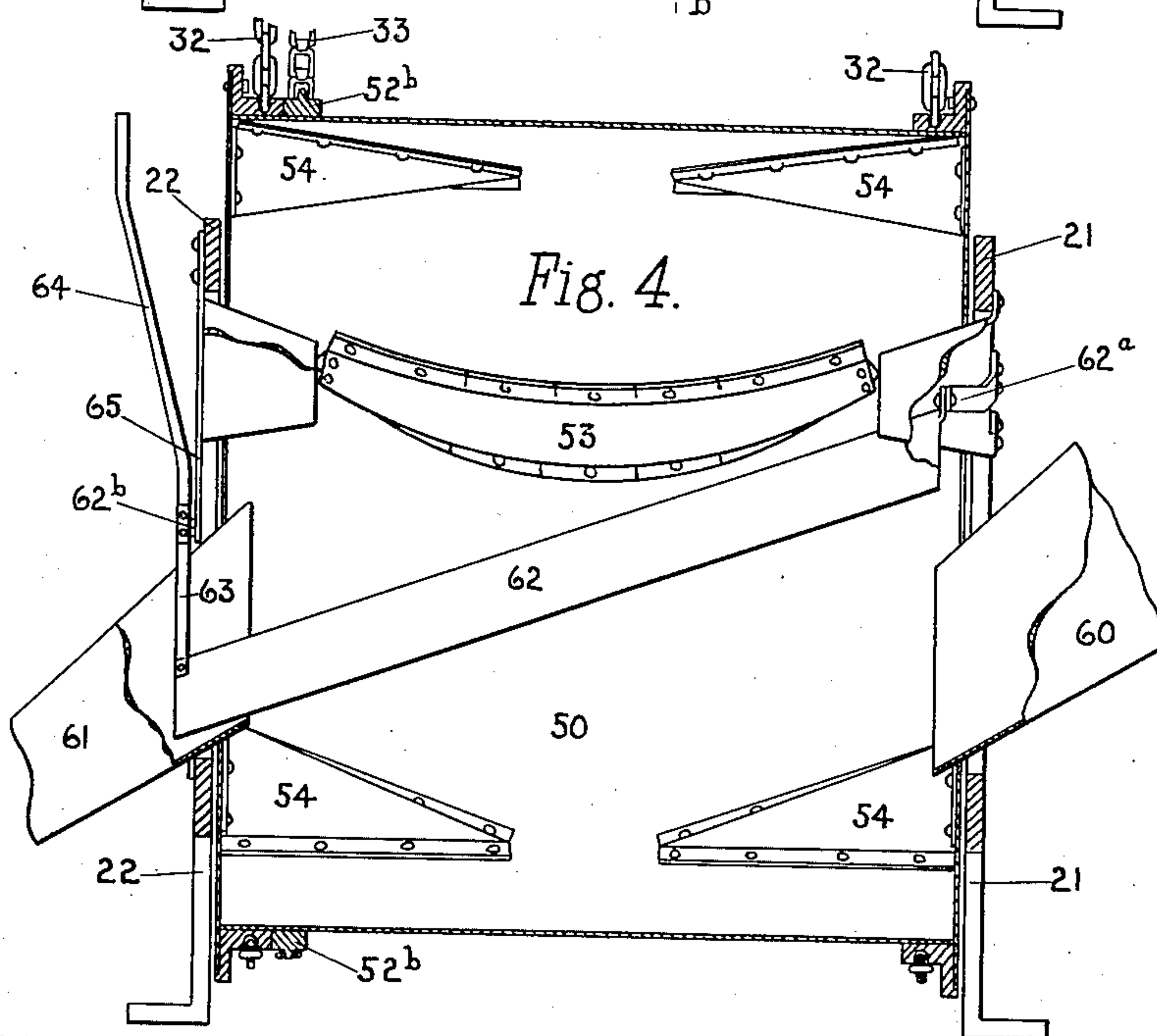


Fig. 4.

WITNESSES:
Evelyn D. Calvert
Colin W. Landin.

INVENTOR.
George Patience White.

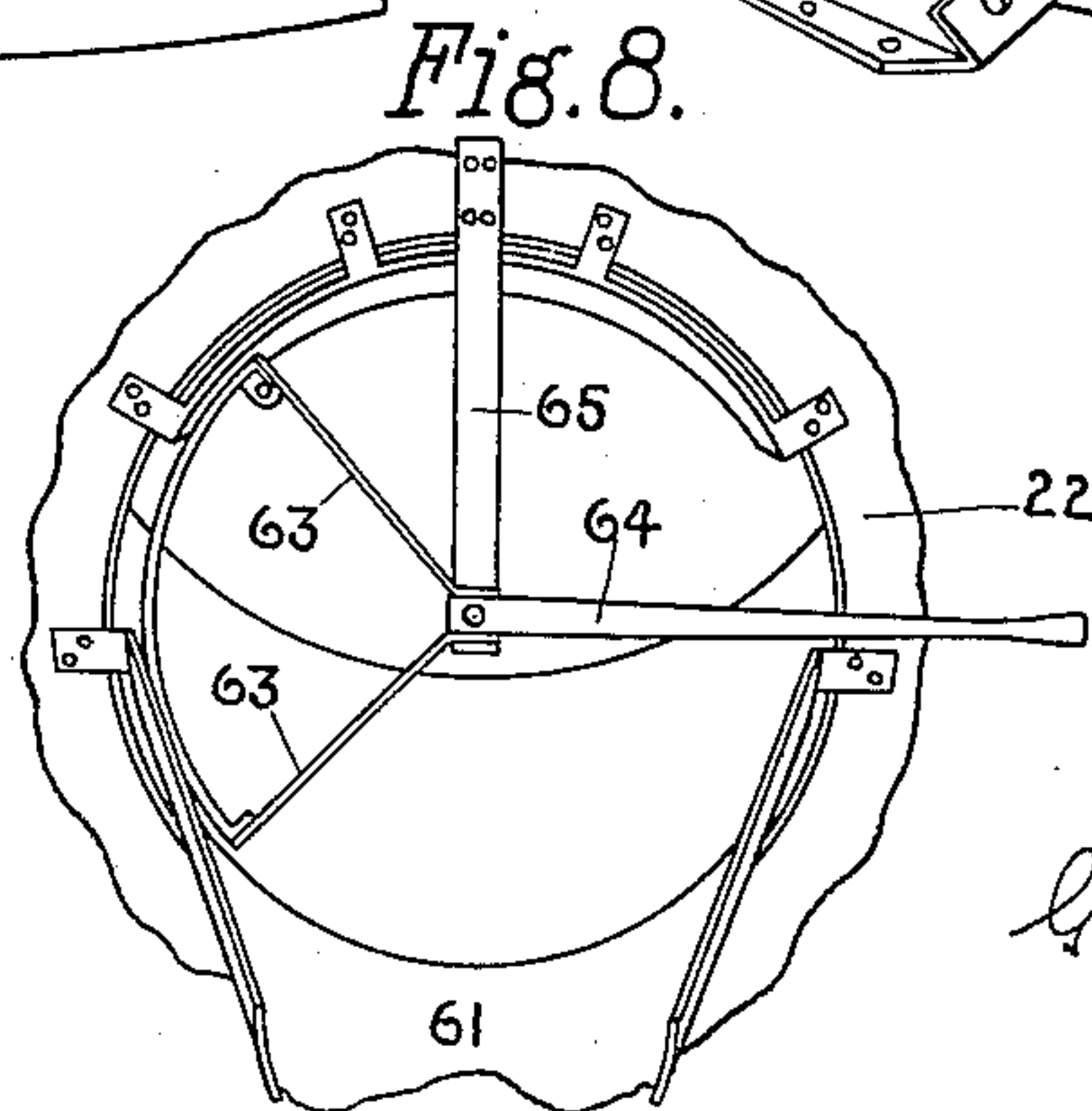
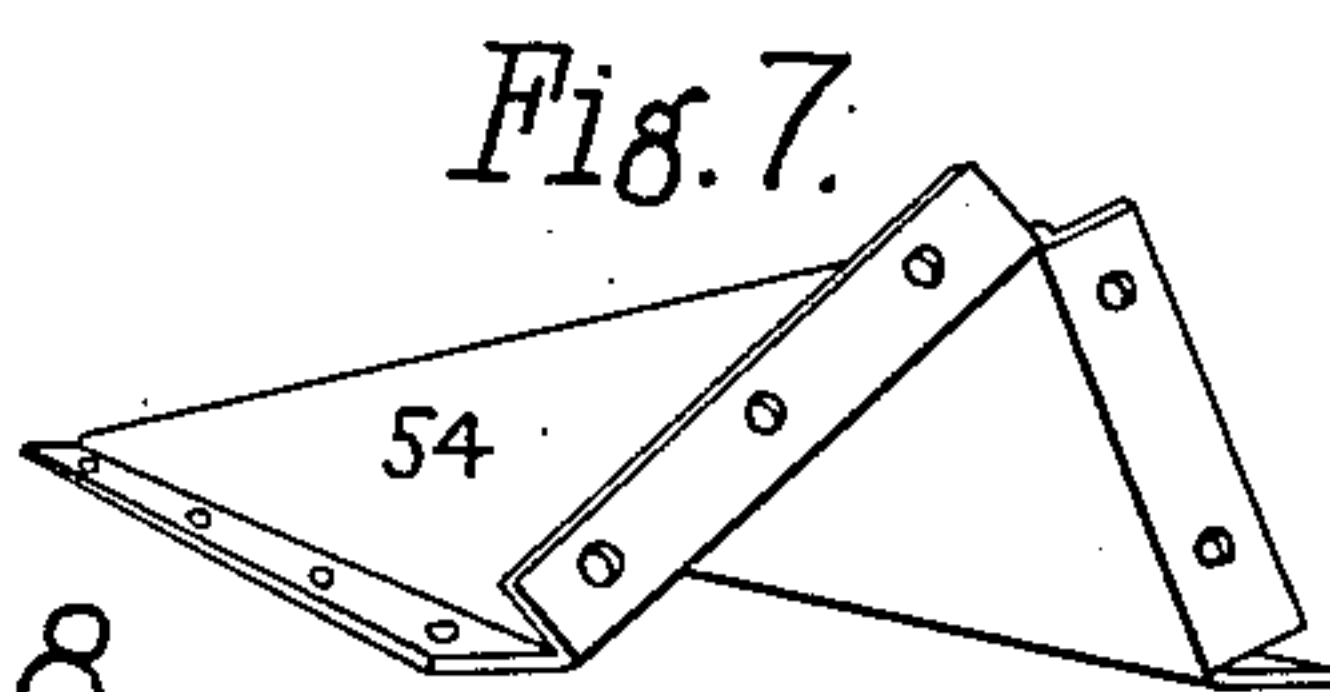
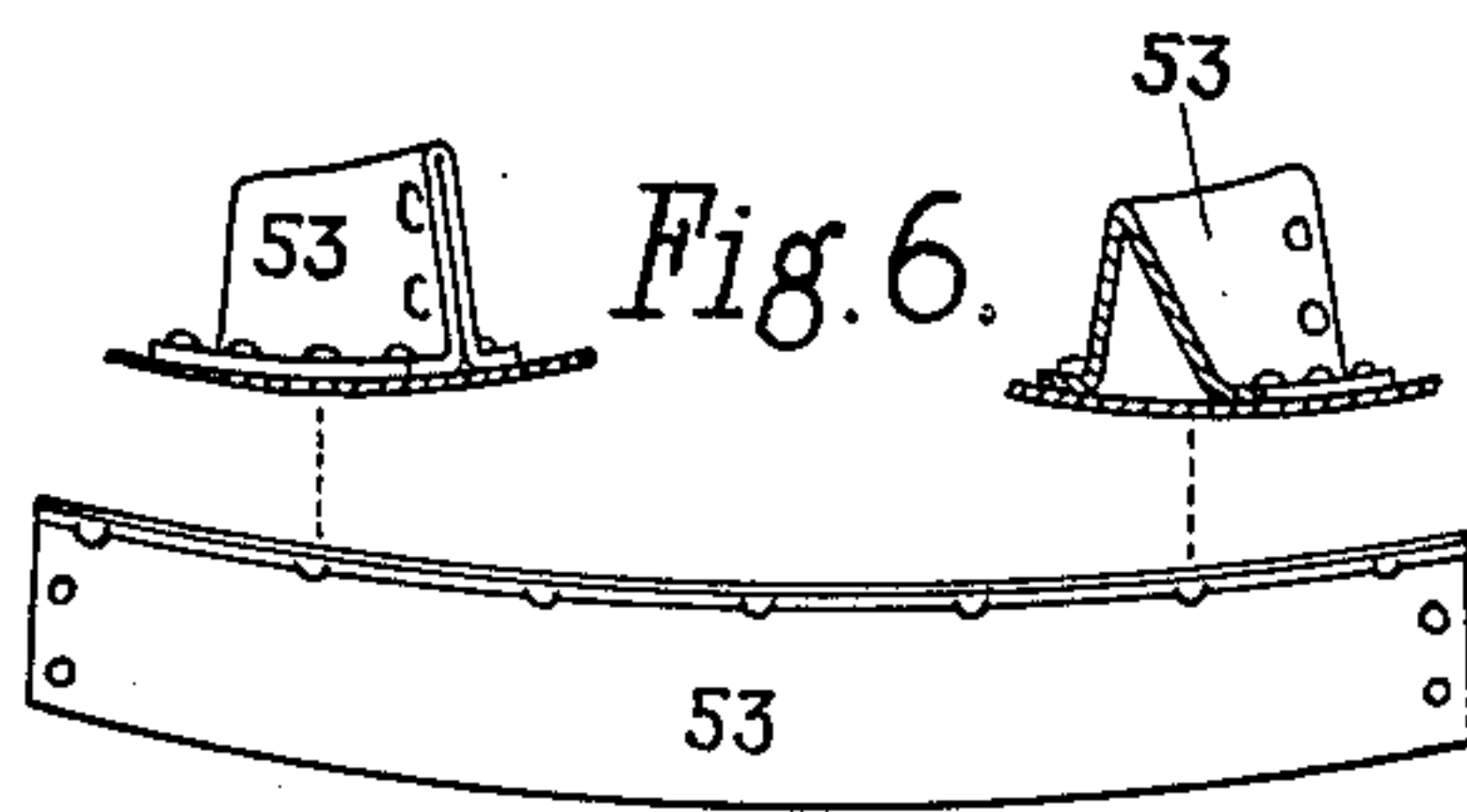
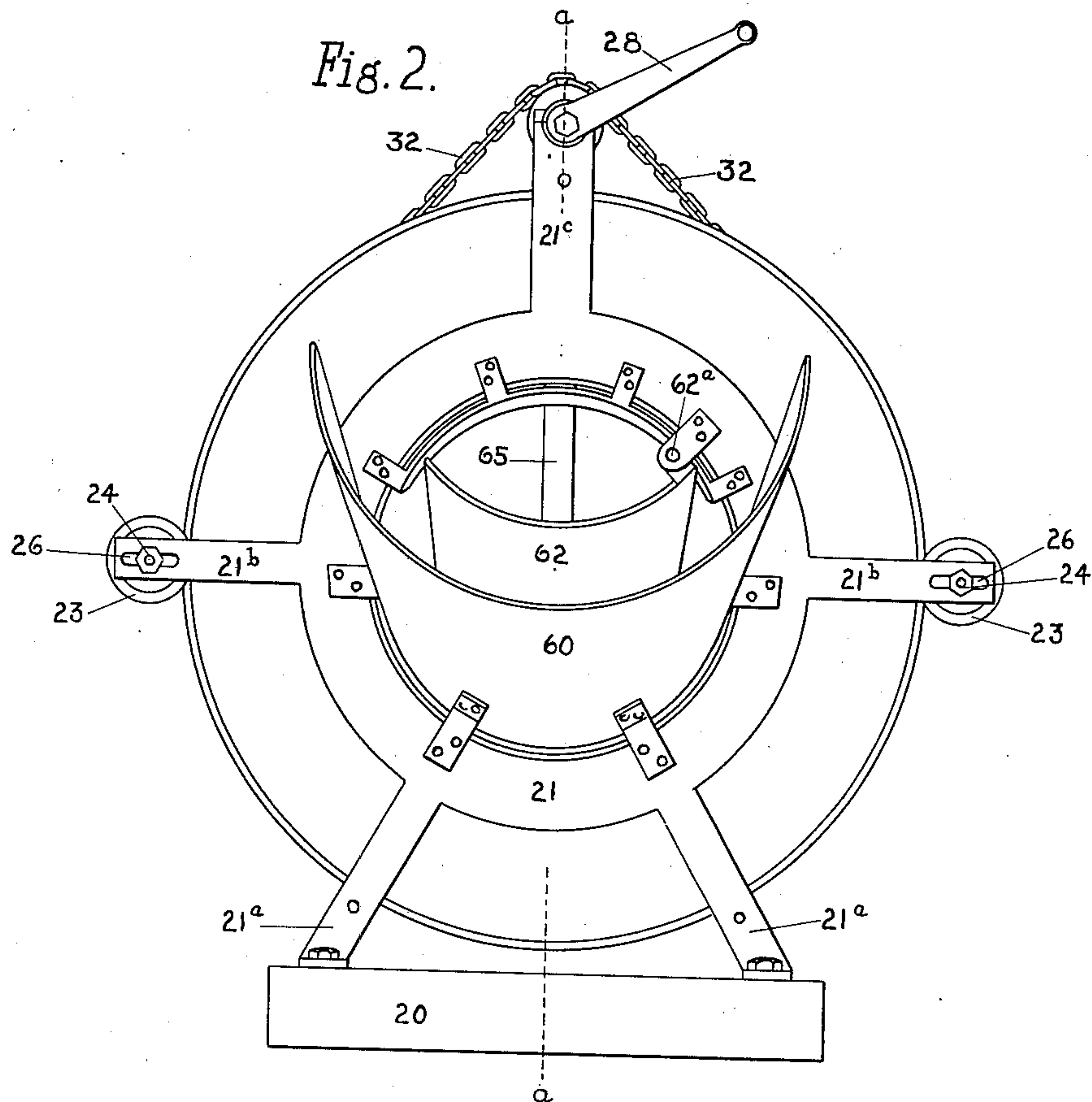
No. 891,756.

PATENTED JUNE 23, 1908.

G. P. WHITE.
CONCRETE MIXER.

APPLICATION FILED SEPT. 17, 1906.

3 SHEETS—SHEET 2.



WITNESSES:
Evelyn S. Calvert
Colin W. Landin

INVENTOR.
George Patchell White

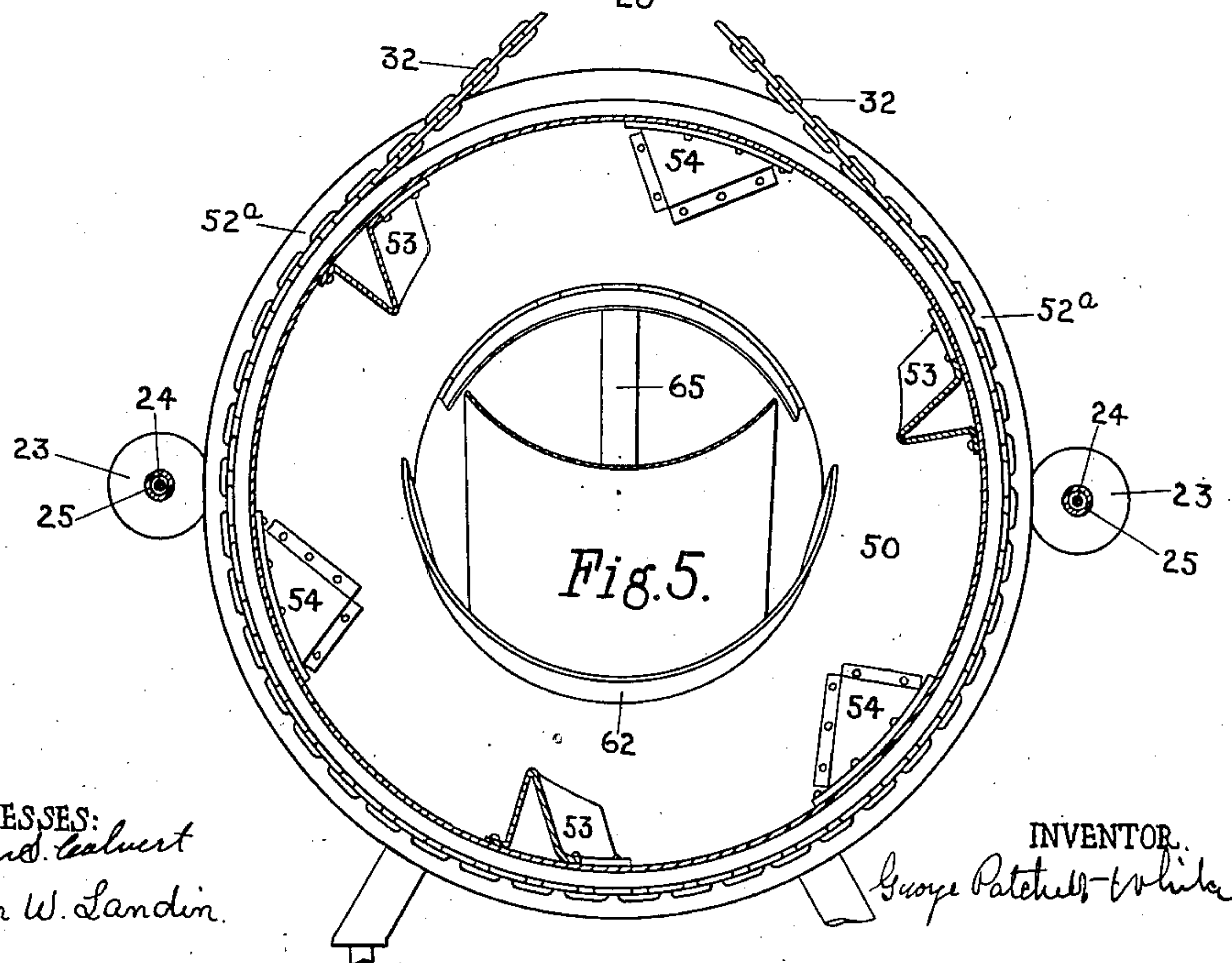
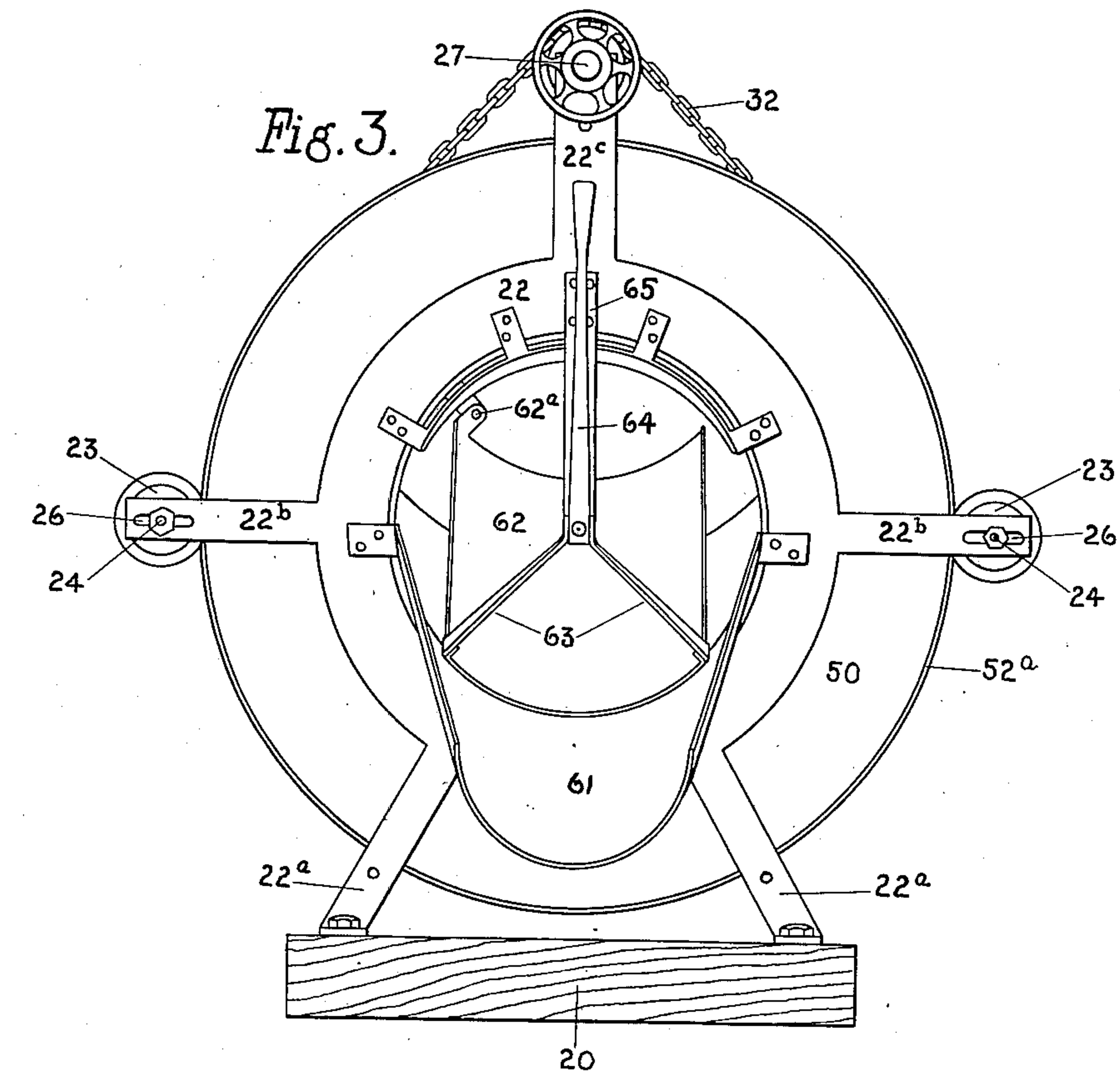
No. 891,756.

PATENTED JUNE 23, 1908.

G. P. WHITE.
CONCRETE MIXER.

APPLICATION FILED SEPT. 17, 1906.

3 SHEETS—SHEET 3.



WITNESSES:
Evelyn D. Calvert
Colin W. Landin.

INVENTOR.
George Patchell-White

UNITED STATES PATENT OFFICE.

GEORGE PATCHETT WHITE, OF WALLACE, IDAHO.

CONCRETE-MIXER.

No. 891,756.

Specification of Letters Patent.

Patented June 23, 1908.

Application filed September 17, 1906. Serial No. 335,019.

To all whom it may concern:

Be it known that I, GEORGE PATCHETT WHITE, a citizen of the United States, residing at Wallace, in the county of Shoshone and State of Idaho, have invented certain new and useful Improvements in Concrete-Mixers, of which the following is a specification.

My invention relates to a concrete-mixer adapted to be used for mixing concrete or other plastic materials wherein it is desired to thoroughly mix an ingredient with other materials.

The objects of my invention are to provide a concrete-mixer which will embody all of the efficiency of mixers heretofore invented and possess additional efficacy without utilizing the complicated parts usually found in mixers; one in which simplicity and elimination of friction predominate, thus requiring a minimum amount of power for operation; one in which the mixing is done within a drum and the removal of the material therefrom is accomplished by means independent of the revolutions of the drum, thus enabling the operator to remove the material after it is thoroughly mixed; also one which can be easily operated; and also one which can be constructed in a simple and durable manner at a very low cost.

The construction of my mixer is such that it can be fed by any suitable means, that is, by a suitable power conveyer adapted to convey the materials to the inlet or feed side of the mixer, or it can be efficiently fed by means of the use of a wheelbarrow or any suitable hand means for placing or dumping the material into the mixer.

It will be made manifest that the foregoing objects and uses of my new invention are as stated, by consulting the drawings forming a part of this specification, in which—

Figure 1 is a side elevation of my invention. Fig. 2 is an elevation of the inlet or feed end thereof. Fig. 3 is an elevation of the outlet end of my new mixer. Fig. 4 is a longitudinal sectional view along line *a—**a* of Fig. 2. Fig. 5 is a cross section through the drum along line *b—b* of Fig. 1. Fig. 6 is a detailed view, partly sectional, of one of the elevating buckets used within the drum. Fig. 7 is an enlarged view of one of the deflectors. Fig. 8 is a fragmental view of one end of the drum.

In more fully referring to the drawings, wherein the same reference numerals and letters indicate corresponding parts throughout all of the figures, 20 represents sills or base plates which can be constructed of wood or any suitable material.

21 and 22 designate circular rims which are provided with legs or supports 21^a and 22^a, by means of which the rims 21 and 22 are supported upon the sills or base plates 20. These circular rims 21 and 22 have horizontal arms 21^b and 22^b, extending from the sides thereof. Secured to these horizontal arms 21^b and 22^b are flanged roller-bearings 23 which rotate upon a journal-rod 24. They are kept apart by means of their flanges. A metallic tube 25 encircles the rod 24, as illustrated in Figs. 1 and 2, and provides additional bearing means. These roller-bearings are made adjustable horizontally by means of elongated slots 26 provided in the horizontal arms 21^b and 22^b. Vertical arms 21^c and 22^c extend upwardly from the circular rims 21 and 22, preferably on a line with the diametrical axis of the rims. Journaled into the upper ends of these vertical arms is a shaft 27, to which may be attached a crank 28 or a pulley 29. Keyed or splined to the shaft 27 is a sprocket-wheel 30. There may be one of these sprocket-wheels at each end of the shaft 27 within the frame formed by the circular rims 21 and 22 and the vertical arms 21^c and 22^c.

31 indicates chain pulleys which are revolvable on the shaft 27, or they may be keyed or splined thereto; one of these chain pulleys may be integral with the sprocket-wheel 30. It is possible that in some forms of my invention I may construct it and dispense with the sprocket-wheel 30 and utilize two sprocket-wheels in lieu of the chain pulleys 31. Operating on the chain pulleys 31 are chains 32.

33 designates a sprocket-chain adapted to operate over the sprocket-wheel 30.

50 indicates the mixing drum of my invention; it being constructed with circular openings in the ends. It is preferably constructed of sheet steel or sheet metal of any character and is provided at the ends with rims 51 and 52. These rims have flanges 51^a and 52^a. These flanges operate against the roller bearings 23 and the flanges on the roller bearings operate outside of the flanges 51^a and 52^a and it is by means of the roller bearings and the flanges thereon that the drum is held in the desired position as the roller bearings re-

ceive the side thrust and end thrust of the drum when it rotates.

The sprocket rim 52^b, having sprockets adapted to mesh with the sprocket-chain 33, may be formed integral with the rim 52, or it may be a separate rim, as shown in Fig. 4.

It is comprehensible that the drum is revoluble and that it is suspended from the shaft 27 by means of the chains 32. It is revolved by means of the sprocket-chain 33 operating in conjunction with the sprocket-wheel 30, the sprocket-rim 52^b, the shaft 27, and the crank 28 or pulley 29.

Within the drum 50 I place a plurality of central elevating buckets 53. These elevating buckets are curved, as shown in Fig. 4. I also provide within the drum a plurality of deflectors adapted to be secured adjacent to the ends thereof, as illustrated in Fig. 4. These deflectors 54 deflect the material to be mixed toward the central part of the drum from whence it is elevated and diffused by means of the buckets 53.

60 represents a feed hopper which is secured to the circular rim in any suitable manner. It is adapted to facilitate feeding the material to be mixed into the drum of the mixer.

61 represents the outlet chute, adapted to be secured to the circular rim 22 and extend into the circular opening in the end of the drum, as shown in Fig. 4. The discharge chute 62 is pivoted to the rims 21 and 22 at points designated by 62^a and 62^b. It will be observed by consulting Figs. 2, 3 and 4 that the point of pivot 62^a is at the upper corner of the discharge chute and that the chute is inclined, that is, it reclines from the point of pivot 62^a, and the lower end thereof extends into the outlet chute 61, as illustrated in Figs. 3 and 4. The lower end of the chute is attached to a yoke 63 which extends to the point of pivot 62^b, as illustrated in Figs. 3 and 4. To the yoke 63 is attached a lever 64. The yoke is pivoted, at the point designated by 62^b, to an arm 65, which is depended from the circular rim 22 to which it is attached. It will be observed that the discharge chute 62 is pivoted directly at the upper end designated by 62^a and that the lower end is appended from the point of pivot 62^b by means of the yoke 63. This provision is an essential feature of my invention, as it provides means for placing the discharge chute in an inoperative position as shown in Fig. 8. This construction is of utility as it makes my new mixer more efficient in that the material can be left within the drum until it is thoroughly mixed, when the discharge chute can be placed in the operative position and the material removed therefrom as the elevating-buckets drop the material into the discharge chute, from whence it is discharged into the outlet chute 61.

The foregoing will suffice to explain the

general structure of my invention. I do not, however, confine myself to the construction herein described and illustrated in the drawings, but reserve the right to make such alterations, modifications, and variations as properly come within the scope of the invention without departing from the spirit of the protection prayed.

What I claim is—

1. A concrete mixer comprising a revoluble drum, a support for said drum, means within said drum for diffusing the material upon rotation of the drum, and a discharge chute extending into said drum and pivotally connected at its opposite ends to the support so as to permit it to be swung either into position to receive material carried upward by the drum or into an inoperative position within the drum at one side thereof.

2. A concrete mixer comprising a revoluble drum having an opening in one end thereof, a driving shaft, a support for said driving shaft, means for suspending said drum from said driving shaft and for imparting a revolving movement to the drum, elevating buckets projecting inwardly from said drum intermediate the ends thereof, a plurality of deflectors arranged within each end of the drum for deflecting the material from the ends of the drum toward the center thereof upon rotation of the drum, and a discharge chute mounted on said support and projecting through said opening into the drum.

3. A concrete mixer comprising a revoluble drum, a driving shaft, a support for said driving shaft, means for suspending said drum from said driving shaft and for producing rotation of the drum when the driving shaft is revolved, friction rollers for taking the end thrust of said drum, elevating buckets projecting inwardly from the drum intermediate the ends thereof, a plurality of deflectors located within each end of the drum and arranged to deflect the material from the ends of the drum toward the center thereof upon rotation of the drum, said drum having an opening in one end, and a discharge chute mounted on said support and projecting through said opening into the drum.

4. A concrete mixer comprising a revoluble drum, a driving shaft, a support for said driving shaft, means for suspending said drum from said driving shaft and for producing rotation of the drum when the driving shaft is revolved, friction rollers mounted on said support for taking the end thrust of said drum, elevating buckets projecting inwardly from the drum intermediate the ends thereof, a plurality of deflectors located within each end of the drum and arranged to deflect the material from the ends of the drum toward the center thereof upon rotation of the drum, said drum having an opening in one end, a discharge chute mounted on said support and

projecting through said opening into the drum, said discharge chute being pivotally supported so as to permit it to be swung into a position to receive material elevated by the drum or to be swung laterally into an inoperative position at one side of the drum.

5 5. A concrete mixer comprising a revoluble drum open at the ends, a support for said drum, elevating buckets arranged intermediate the ends of the drum and projecting inwardly therefrom, a plurality of deflectors arranged within each end of the drum for deflecting material from the ends toward the center of the drum, and a discharge chute
10 extending through said drum and pivotally mounted on said support at opposite ends of the drum so as to permit the chute to be swung into position to receive material carried upward by the drum or to be swung into
15 an inoperative position within the drum at one side thereof.

6. A concrete mixer comprising a revoluble drum open at the ends, a support for said drum, elevating buckets arranged intermediate the ends of the drum and projecting inwardly therefrom, a plurality of deflectors arranged within each end of the drum for deflecting material from the ends toward the center of the drum, a chute arranged within
25 said drum and projecting through one end thereof, a pivotal connection between the latter end of the chute and the support at a point near one side of the drum, and a yoke pivotally mounted on the support at the opposite end of the drum for supporting the
30 other end of the chute.

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

GEORGE PATCHETT WHITE.

Witnesses:

EVELYN S. CALVERT,
J. A. FERGUSON