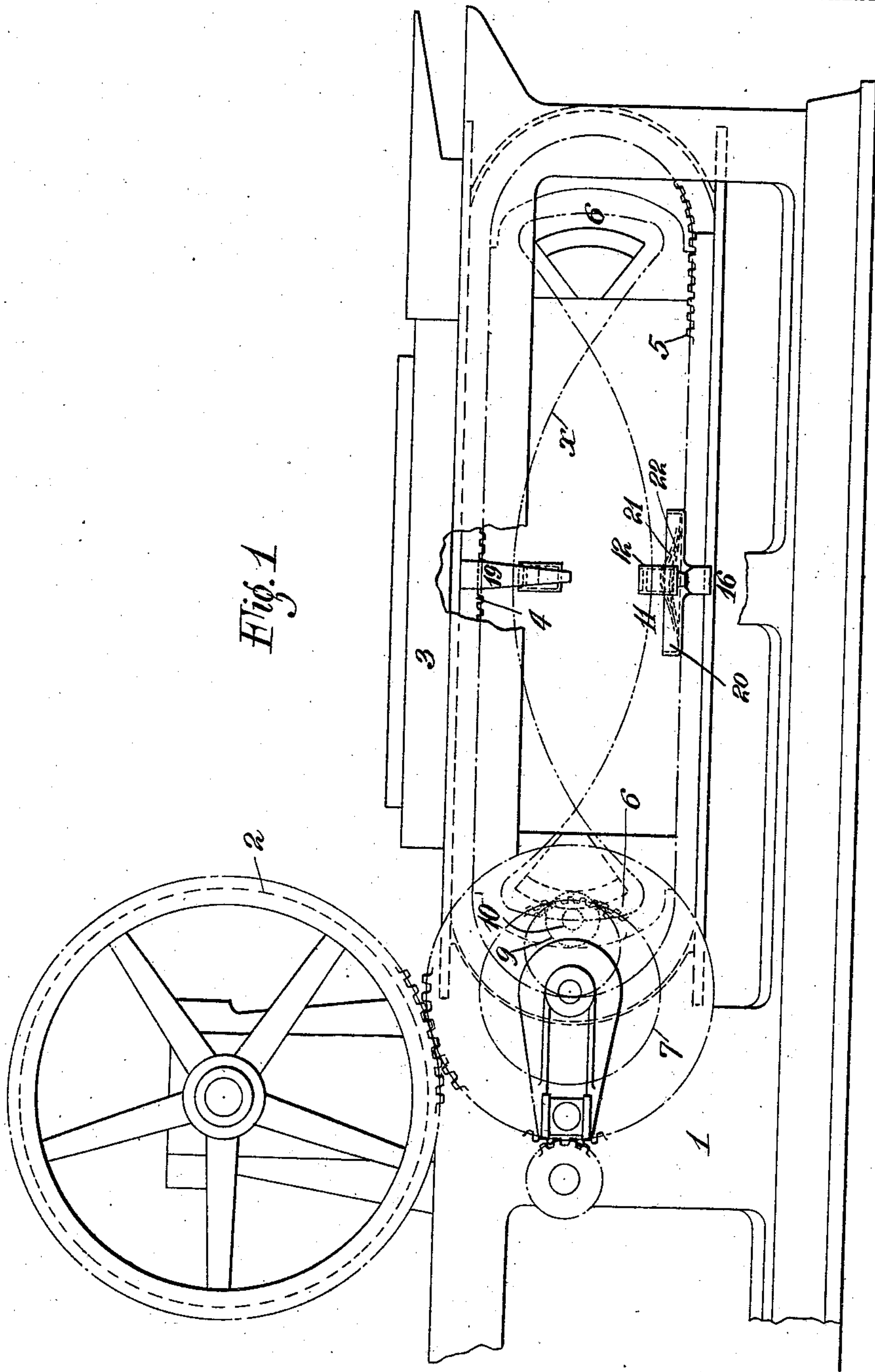


No. 846,867.

PATENTED MAR. 12, 1907.

W. SCOTT.
LUBRICATING DEVICE.
APPLICATION FILED JUNE 23, 1906.

2 SHEETS—SHEET 1.



Witnesses
Joan Honigsberg
Anna Wassmann

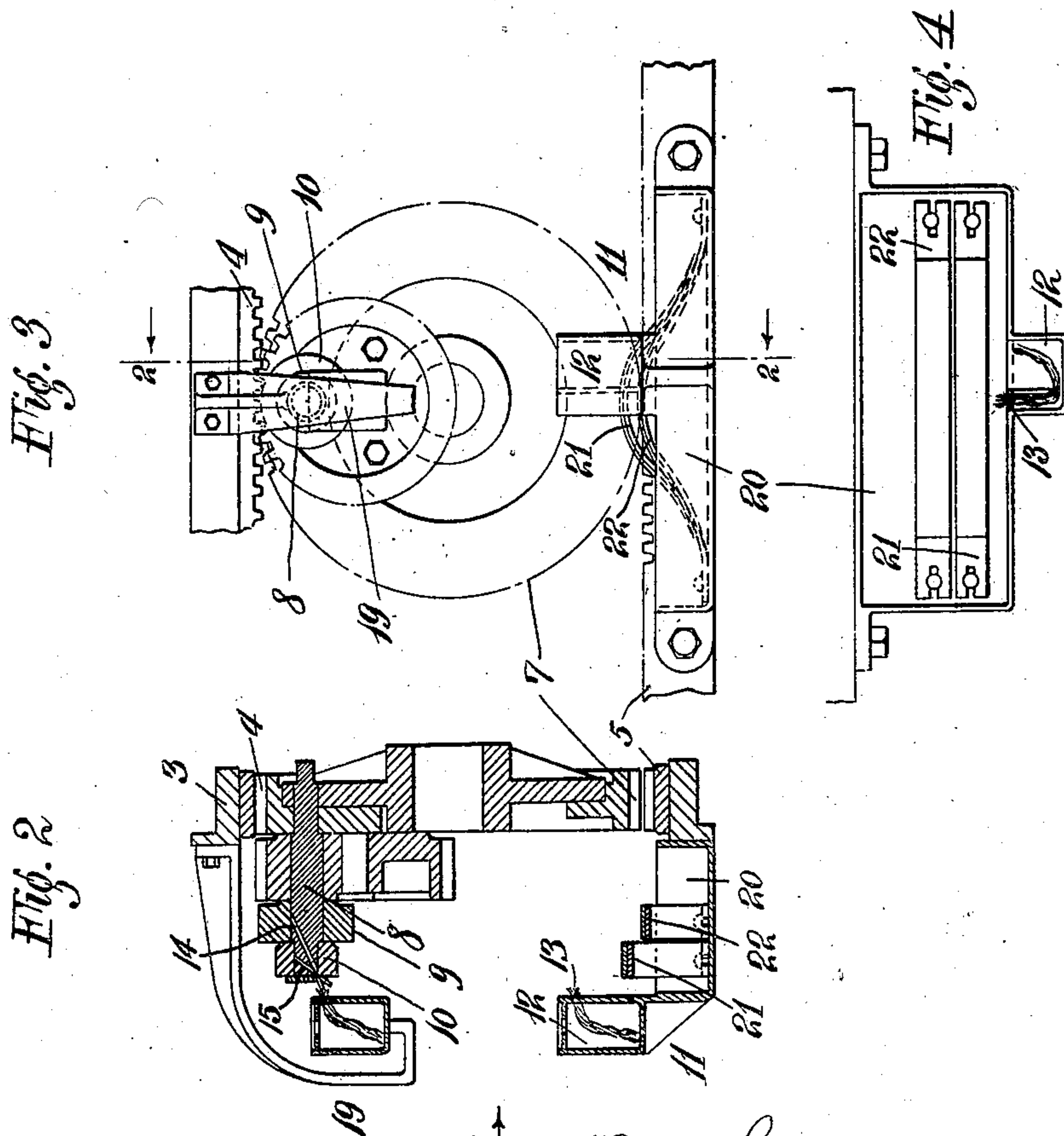
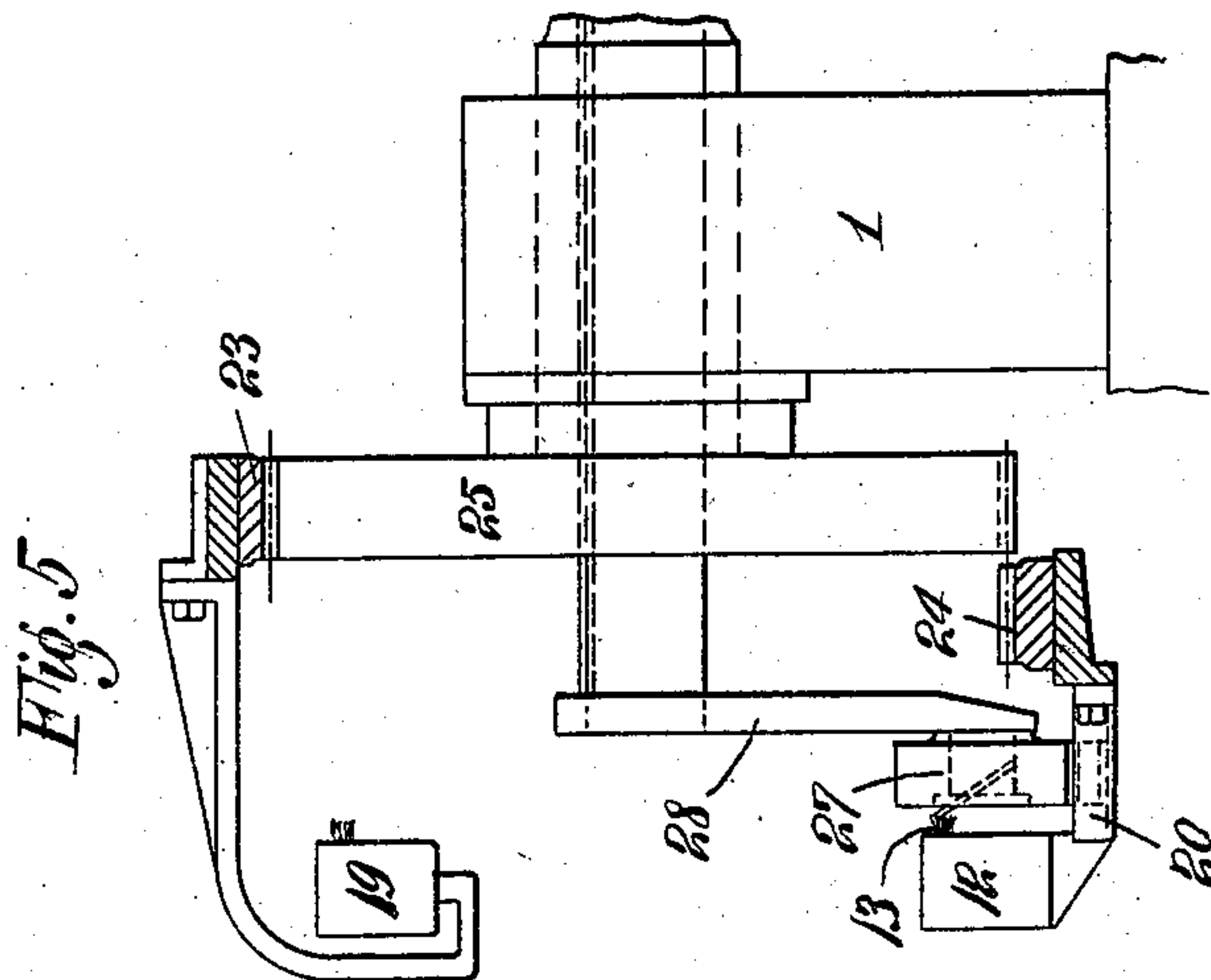
Walter Scott Inventor
By his Attorneys
J. Ken Spaulding

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2 SHEETS—SHEET 2.



Witnesses
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UNITED STATES PATENT OFFICE.

WALTER SCOTT, OF PLAINFIELD, NEW JERSEY.

LUBRICATING DEVICE.

No. 846,867.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed June 23, 1905. Serial No. 266,579.

To all whom it may concern:

Be it known that I, WALTER SCOTT, a citizen of the United States of America, and a resident of Plainfield, county of Union, State of New Jersey, have invented certain new and useful Improvements in Lubricating Devices, of which the following is a specification.

The present invention relates generally to lubricating devices, and has more particularly reference to means for lubricating the reversing-roll and spindle of a bed and cylinder printing-machine as well as the surface of the reversing-roll itself. The problem of properly lubricating this reversing-roll is a most important one, as will be understood from the following: A machine of the character described is usually provided with a rotating impression-cylinder, a reciprocating bed having an upper and a lower rack, and a gear adapted to alternately engage with the two racks to impart the proper reciprocation to the bed. Suitable means, as end slots on the bed and a roll or square block moving with the gear, are also provided for reversing the motion of the bed at the end of the stroke in either direction. This reciprocating bed, which is very heavy, makes a number of reciprocations per minute. In fact, in highly developed types the speed is considerable. Owing to the impossibility of adjusting the air-cushions which aid in retarding the motion of the bed at each end of the stroke to a nicety, considerable strain is frequently placed upon the spindle, as it practically receives all the thrust of the bed on the reversal. It will therefore readily be seen that abundant lubrication is necessary upon the spindle carrying this reversing-roll, as well as upon the surface of the reversing-roll itself or upon the members, as shoes, which constitute the end slots. Adding to these considerations the fact that these parts are located under the machine, where it is difficult to reach them by hand for the purpose of lubrication and where there is little available space owing to the proximity of working parts, it will at once be clear that suitable means for properly lubricating the spindle and roll are very desirable.

The object of the invention is, therefore, the production of suitable means for automatically lubricating this spindle and reversing-roll in a simple and efficient manner, and to this end the invention comprises the features of construction and combinations of parts, as will more fully hereinafter appear.

In the accompanying drawings the invention has been embodied in a suitable form, showing also a modification; but changes of construction may of course be made without departing from the spirit of the invention.

In the said drawings, Figure 1 is a side elevation of a portion of a printing-machine of the character described, with parts broken away, embodying the invention. Fig. 2 is a vertical sectional view on line 2 2 of Fig. 3, showing the gear which engages with the racks and adjacent parts. Fig. 3 is a detail view looking in the direction of the arrow 3 of Fig. 2. Fig. 4 is a plan view of the source of supply of lubricant. Fig. 5 is a detail view showing a modification.

Similar numerals of reference indicate corresponding parts in the different views.

1 indicates a suitable framework mounting the parts comprising the machine.

2 is the impression-cylinder, and 3 is the reciprocating bed, the latter provided with an upper and a lower rack 4 and 5 and provided, further, with suitable end slots, as 6. These slots may be of any suitable construction and may be composed of shoes, rollers, bearings, or other members of a similar nature well known in the art. Adapted to engage alternately with the said racks is a rotatable gear 7, whose axis is fixed, except for a slight up-and-down movement in the present instance, to engage and disengage with the racks of the bed in a well-known manner. Moving with said gear is a spindle 8, carrying one or more friction-rolls 9 and 10 or a square block or other members adapted to cooperate with the end slots or with the members composing the same. This roll or rolls or other member by bearing against the members composing the end slots reverses the motion of the bed in the usual way. As will be seen from an inspection of Fig. 1, this roll or other member on the spindle moving with the gear describes the path with relation to the reciprocating bed, (shown by the plotted curve marked *x*.) This will give an idea of how difficult it is to properly lubricate these parts. In order to properly lubricate this spindle, there is mounted a source of supply 11 on the bed, which preferably takes the form of an oil-cup 12, having a wick 13 projecting out therefrom, with which one or more ducts 14 and 15 in the spindle are adapted to coincide at stated intervals. In the present instance the relation of the parts is such that the gear makes three revolutions

to each reciprocation of the bed or to each complete movement in both directions of the said bed. As will be noticed, the source of supply is located at that point 16 of the bed nearest to the path of the friction-roll and spindle while the said roll is out of engagement with the slots. It will thus be seen that these ducts coincide once to every three revolutions with the said source of supply or once to each complete movement of the bed, or, if the parts were differently arranged, say once to every four revolutions. It will of course be understood that a similar source of supply might be located on the upper side of the bed, as indicated by 19, whereby the spindle would be lubricated automatically twice to every complete movement of the bed or twice to every three revolutions of the gear.

In addition to the foregoing it is desirable to properly lubricate the end slots or members composing the same or to lubricate the outer surface of the friction roll or rolls or other members carried by the spindle. To this end there is a trough 20 placed on the reciprocating bed adjacent to the other source of supply of lubricant, or it may form a part thereof, if desired. In this trough are located one or more springs, as 21 and 22, adapted to support pieces of wick or other material for conveying the oil or other lubricant out of the trough. It will be understood that when the friction roll or rolls come adjacent to the said trough that it will travel over the wick resting on the surface of the spring and in this manner will have frictional engagement with the said wick under tension, thereby causing a rotation around its own axis, so that the entire surface, or substantially so, is covered with the lubricant. It is apparent that the easiest way to lubricate the outer surface of this roll or rolls is to do so when they are out of engagement with the end slots, and the easiest way to lubricate the end slots is by applying the lubricant to the surface of the roll or rolls. It is of course also obvious that a duplicate of the trough may be located on the upper side of the bed in a manner similar to the second lubricating device for the spindle.

In Fig. 5 is shown a modification. In this view the parts composing the invention are substantially the same as those described in connection with the structure shown in Figs. 1, 2, 3, and 4. In this instance, however, the two racks 23 and 24 of the bed are located in different planes, and the gear 25 engaging therewith moves sidewise in and out of engagement with the said racks. In this instance the reversing-roll and spindle (indicated by 27) is carried on an arm 28, mounted on the same shaft as the gear 25, or it might be mounted directly on the gear and slide back and forth with the same.

What is claimed is—

1. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member to engage with the end slots, a source of supply of lubricant carried by the reciprocating bed, and means for lubricating the spindle aforesaid from the said source of supply.
2. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the end slots, a source of supply of lubricant carried by the reciprocating bed, and a duct in the spindle adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals.
3. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, and a plurality of ducts in the spindle adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals.
4. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, and a plurality of ducts in the spindle converging at a common point adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals.
5. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying two rolls, a source of supply of lubricant carried by the reciprocating bed, and a plurality of ducts in the spindle adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals.
6. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying two rolls, a source of supply of lubricant carried by the reciprocating bed, and a plurality of ducts in the said spindle converging at a common point adapted to coincide with the source of

supply of lubricant on the reciprocating bed at stated intervals.

7. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, and means for lubricating the said spindle from the said source of supply once to every complete movement of the reciprocating bed.

8. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, and a duct in the spindle adapted to coincide with the source of supply of lubricant on the reciprocating bed once to every complete movement of the reciprocating bed.

9. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, two sources of supply of lubricant carried by the reciprocating bed, and means for lubricating the spindle from the said sources of supply on the reciprocating bed at stated intervals.

10. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, two sources of supply of lubricant carried by the reciprocating bed, and a duct in the spindle adapted to alternately coincide with the said sources of supply.

11. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, and means for lubricating said spindle once to every three revolutions of the gear.

12. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, and a duct in the spindle adapted to coincide with the said source of

supply once to every three revolutions of the gear.

13. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member to engage with the said slots, a source of supply of lubricant, means for automatically lubricating the spindle aforesaid from the said source of supply, and means for lubricating the surface of the roll simultaneously therewith.

14. The combination with a reciprocating bed having two racks, and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the end slots, a source of supply of lubricant, a duct in the spindle adapted to coincide with the source of supply of lubricant at stated intervals, and means for lubricating the surface of the roll simultaneously therewith.

15. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant, a plurality of ducts in the spindle adapted to coincide with the source of supply of lubricant at stated intervals, and means for lubricating the surface of the roll simultaneously therewith.

16. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member to engage with the end slots, a source of supply of lubricant carried by the reciprocating bed, means for lubricating the spindle aforesaid from the said source of supply, and means for lubricating the surface of the roll simultaneously therewith.

17. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the end slots, a source of supply of lubricant carried by the reciprocating bed, a duct in the spindle adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals, and means for lubricating the surface of the roll simultaneously therewith.

18. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a

source of supply of lubricant carried by the reciprocating-bed, a plurality of ducts in the spindle adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals, and means for lubricating the surface of the roll simultaneously therewith.

19. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying two rolls, a source of supply of lubricant carried by the reciprocating bed, a plurality of ducts in the spindle adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals, and means for lubricating the surfaces of the rolls simultaneously therewith.

20. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying two rolls, a source of supply of lubricant carried by the reciprocating bed, a plurality of ducts in the said spindle converging at a common point adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals, and means for lubricating the surfaces of the rolls simultaneously therewith.

21. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant, means for lubricating the said spindle from the said source of supply once to every complete movement of the reciprocating bed, and means for lubricating the surface of the roll simultaneously therewith.

22. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, means for lubricating the said spindle from the said source of supply once to every complete movement of the reciprocating bed, and means for lubricating the surface of the roll simultaneously therewith.

23. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, a duct in the spin-

dle adapted to coincide with the source of supply of lubricant on the reciprocating bed once to every complete movement of the reciprocating bed, and means for lubricating the surface of the roll simultaneously therewith.

24. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, two sources of supply of lubricant carried by the reciprocating bed, means for lubricating the spindle from the said sources of supply on the reciprocating bed at stated intervals, and means for lubricating the surface of the roll simultaneously therewith.

25. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, two sources of supply of lubricant carried by the reciprocating bed, a duct in the spindle adapted to alternately coincide with the said sources of supply, and means for lubricating the surface of the roll simultaneously therewith.

26. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, means for lubricating said spindle once to every three revolutions of the gear, and means for lubricating the surface of the roll simultaneously therewith.

27. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, a duct in the spindle adapted to coincide with the said source of supply once to every three revolutions of the gear, and means for lubricating the surface of the roll simultaneously therewith.

28. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a roll moving with said gear adapted to engage with the slots, and means for lubricating the surfaces of the said roll having frictional contact under tension with the same so as to lubricate a considerable portion of the surface thereof.

29. The combination with a reciprocating

bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, two frictional rolls moving with said gear adapted to engage with the slots, and means for lubricating the surfaces of said rolls having frictional contact under tension with the same so as to lubricate a considerable portion of the surface thereof.

30. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage with said racks to reciprocate the bed, a friction-roll moving with said gear, a trough mounted on the bed for the reception of the lubricant, a wick supported by a spring located in said trough against which the friction-roll is adapted to come in contact when it passes the point at which the trough is located.

31. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a roll or other member moving with said gear adapted to engage with the slots, and means located on the reciprocating bed for automatically lubricating the surface of the roll.

32. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a roll moving with said gear adapted to engage with the slots, and means located on the reciprocating bed for automatically lubricating the surface of the said roll while it is out of engagement with the said slots.

33. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage with said racks to reciprocate the bed, two friction-rolls moving with said gear and adapted to engage with the end slots, and means located on the reciprocating bed for automatically lubricating the surfaces of said rolls.

34. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage with said racks to reciprocate the bed, two friction-rolls moving with said gear and adapted to engage with the end slots, and means located on the reciprocating bed for automatically lubricating the surfaces of said rolls while they are out of engagement with the said slots.

35. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a roll moving with said gear adapted to engage with the slots, and means located on the reciprocating bed for lubricating the surfaces of the said

roll having frictional contact under tension with the same so as to lubricate a considerable portion of the surface thereof.

36. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, two friction-rolls moving with said gear adapted to engage with the slots, and means located on the reciprocating bed for lubricating the surfaces of said rolls having frictional contact under tension with the same so as to lubricate a considerable portion of the surface thereof.

37. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a roll moving with said gear adapted to engage with said slots, and means located on the reciprocating bed for lubricating the said slots by applying a lubricant to the roll.

38. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, two friction-rolls moving with said gear adapted to engage with said slots, and means located on the reciprocating bed for lubricating the said slots by applying a lubricant to the rolls.

39. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a roll moving with said gear adapted to engage with said slots, and means located on the reciprocating bed for lubricating the said slots by applying a lubricant to the roll once to each complete movement of the bed.

40. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, two friction-rolls moving with said gear adapted to engage with said slots, and means located on the reciprocating bed for lubricating the said slots by applying a lubricant to the rolls once to each complete movement of the bed.

41. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a roll moving with said gear adapted to engage with said slots, and means located on the reciprocating bed for lubricating the said slots by applying a lubricant to the roll once to every three revolutions of the gear.

Signed at New York city this 20th day of June, 1905.

WALTER SCOTT.

Witnesses:

GEO. A. HOFFMAN
A. W. BEEKEN.