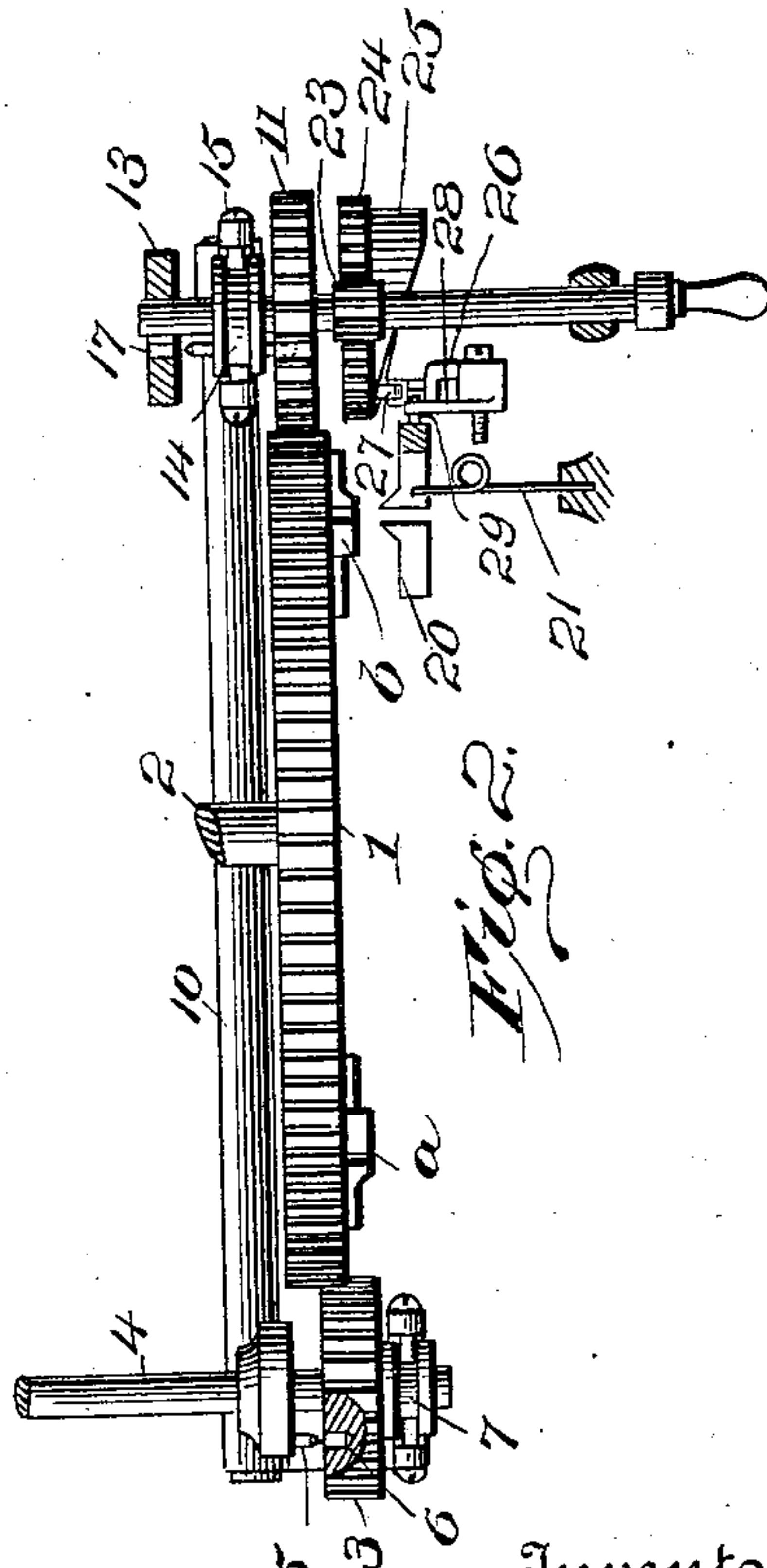
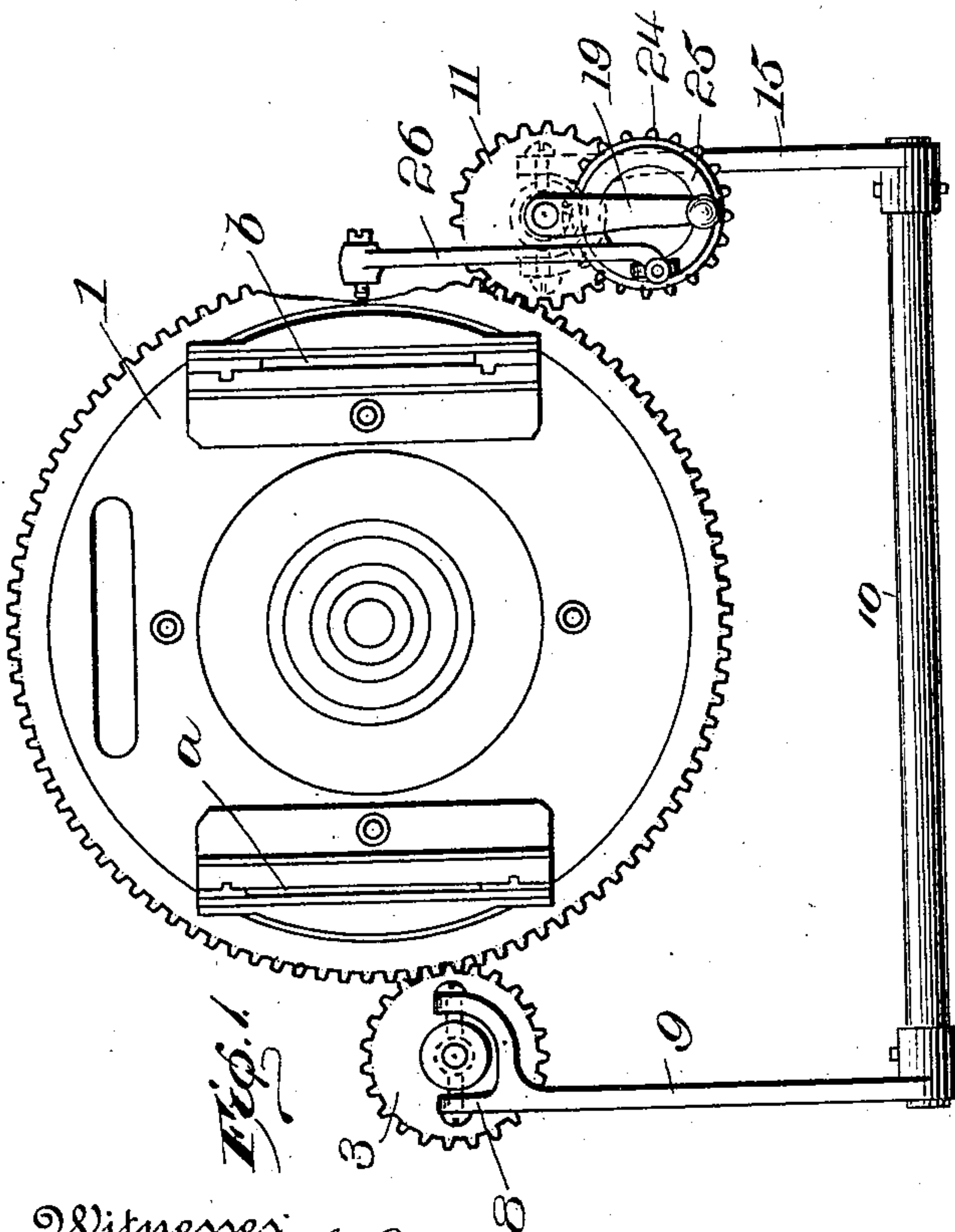
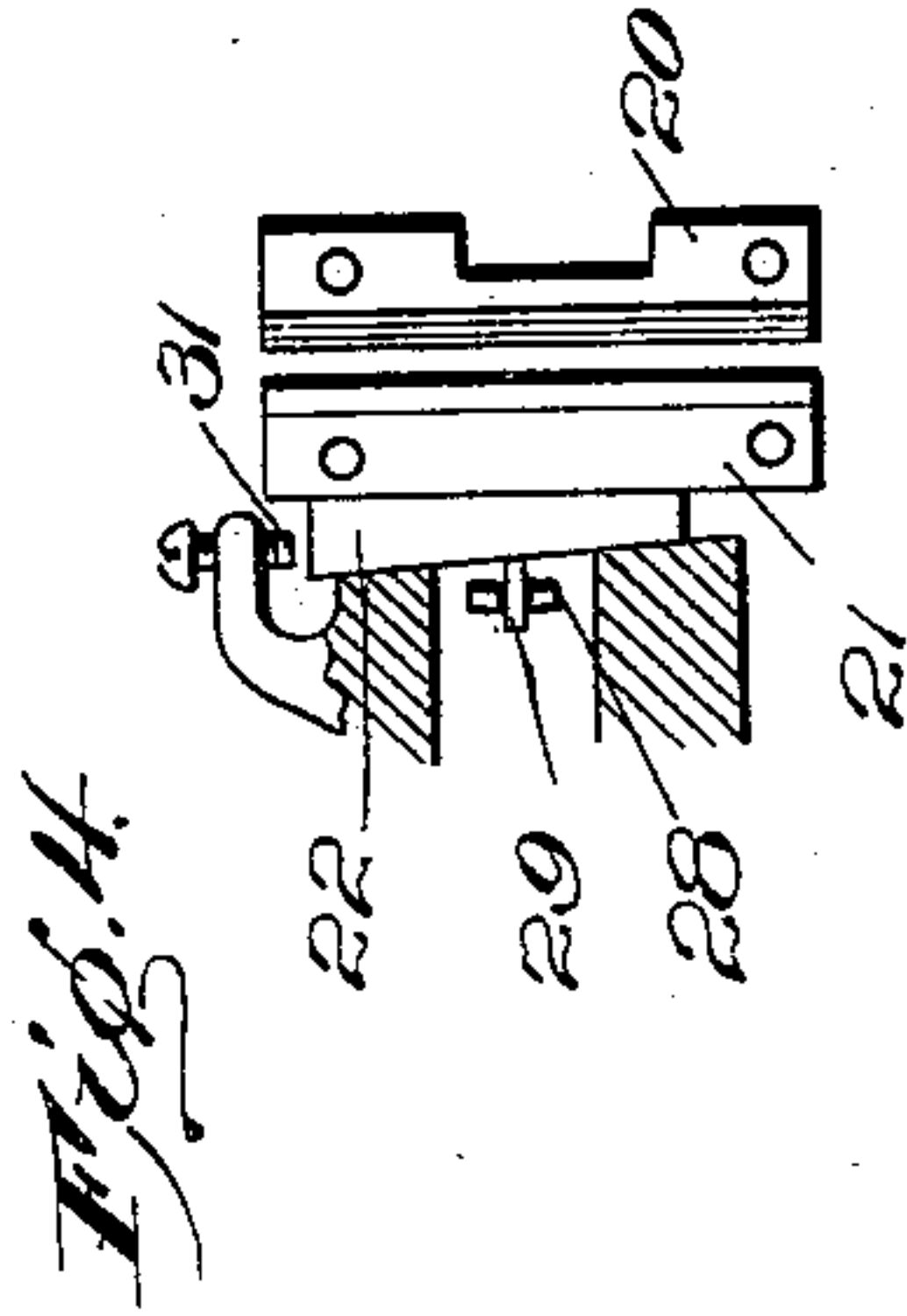
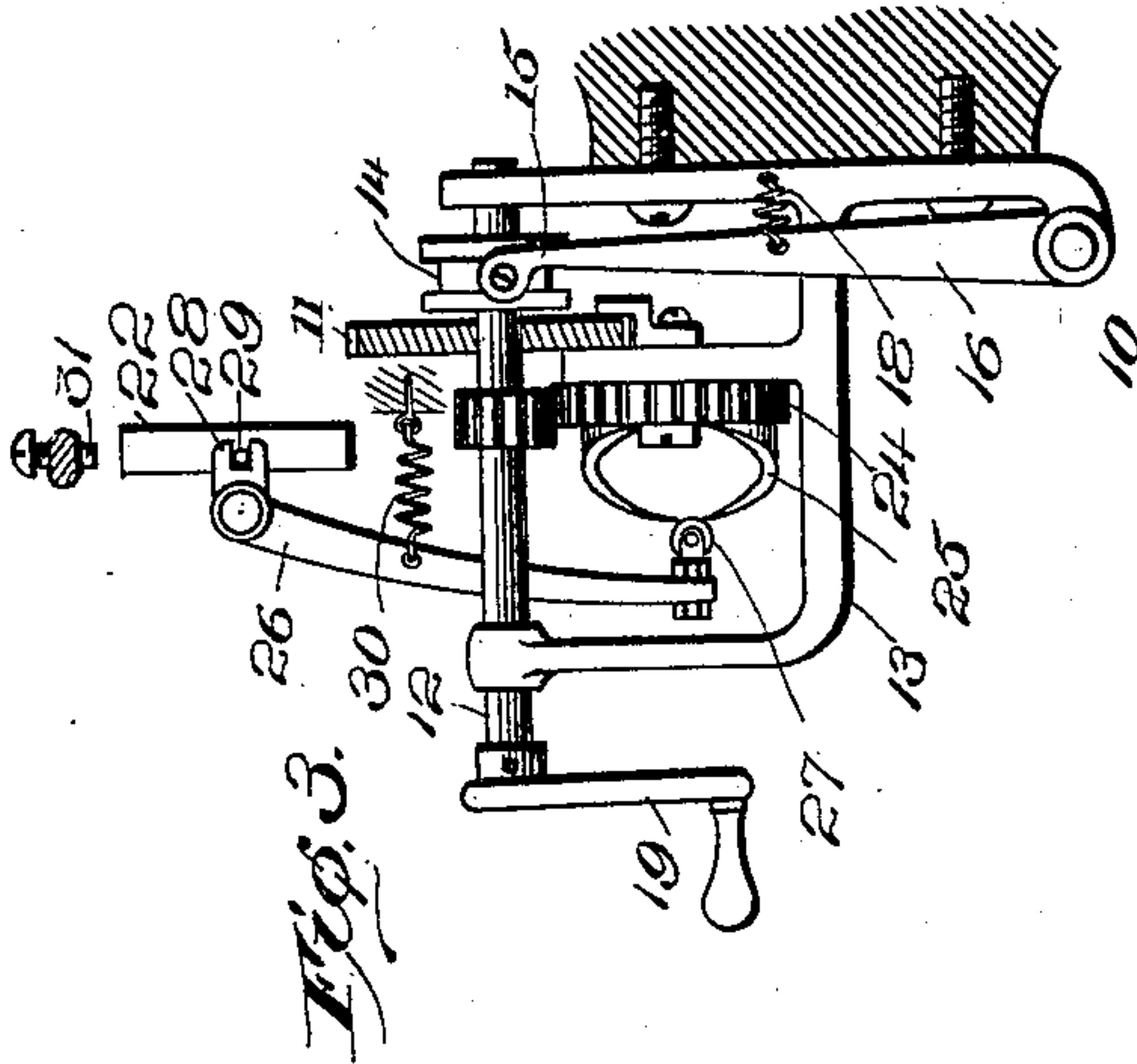


No. 725,861.

PATENTED APR. 21, 1903.

C. MUEHLEISEN.
LINOTYPE MACHINE.
APPLICATION FILED NOV. 12, 1902.

NO MODEL.



Witnesses:
J. M. Fowler
C. W. Clement

Inventor
Carl Muehlisen
by *J. Watson*
Attorney

UNITED STATES PATENT OFFICE.

CARL MUEHLEISEN, OF BERLIN, GERMANY.

LINOTYPE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 725,861, dated April 21, 1903.

Application filed November 12, 1902. Serial No. 130,990. (No model.)

To all whom it may concern:

Be it known that I, CARL MUEHLEISEN, a citizen of the United States, residing at Berlin, Germany, have invented certain new and useful Improvements in Linotype-Machines, of which the following is a specification.

In the use of the linotype-machine it is often desirable to be able to quickly change from one size of mold to another in order to cast slugs of different thicknesses. Thus in setting up advertising matter and ordinary reading matter the head-lines are usually of one font and the body of the advertisement or article of a different font or size of type.

By means of the present invention two or more molds of different sizes are provided, together with means for instantly changing from one size of mold to the other. The slug-trimming knives are arranged to change with the mold and adapt themselves automatically to the thickness of slug to be cast.

In the accompanying drawings, Figure 1 is a front view of the mold-wheel of a linotype-machine to which the present invention is applied. Fig. 2 is a plan view of the parts shown in Fig. 1. Fig. 3 is a right-end view, and Fig. 4 is a detail of the trimming-knives.

It has heretofore been proposed to supply a mold-wheel with two molds of different sizes; but it has been necessary to loosen the pinion which drives the mold-wheel, turn the mold-wheel through half a revolution, and then reclamp it in order to reverse the position of the mold. It has also been proposed to operate the mold-wheel by means of a pitman or link in lieu of a pinion and to connect such pitman or link detachably with the mold-wheel. In such case, however, it has been necessary to loosen the nut or other device which holds the mold-wheel in place upon its axis in order that the pitman might be separated from it. With such devices as appear to have been used it has been impracticable to shift from one mold to another without serious interruption to the work of the compositor and without requiring him to use wrenches or other tools for disconnecting the mold-wheel.

By means of the present invention the mold-wheel can be instantly moved to place any of its molds in operative relation to the metal-injecting mechanism, and at the same time

the trimming-knives are automatically adjusted to conform to the operative mold.

Referring to the drawings, 1 indicates the mold-wheel, having, as shown, two molds *a b*. The mold-wheel is mounted on a shaft 2, and it is driven by a pinion 3 on shaft 4. Pinion 3 is normally connected to the shaft 4 by means of a clutch comprising a pin 5 on said shaft which enters a socket in the pinion 6. Connected to the pinion 6 is a grooved ring or collar 7, which is engaged by a yoke 8 on an arm 9 of rock-shaft 10. By rocking the shaft the pinion 3 is thrown into and out of engagement with its shaft 4. At another point the mold-wheel 1 is engaged by a pinion 11, which is loosely mounted on a shaft 12, mounted in bracket 13. Fixed to the shaft 12 is a grooved collar 14, which is engaged by a yoke 15 on an arm 16, fast on rock-shaft 10. The collar 14 carries on its forward side a clutch-pin which is adapted to engage a socket in the pinion 11 and on its rear side a similar pin adapted to engage an opening in a part of the bracket 13. A spring 18 is preferably provided to normally hold the pinion 3 in engagement with its shaft 4 and the collar 14 and shaft 12 in engagement with the bracket 13, thus locking the shaft 12, and engaging the mold-wheel with its driving-shaft 4. The shaft 12 is preferably provided with a hand-crank 19.

The operation of shifting the mold-wheel to change the molds is as follows: The hand-crank 19 is pulled forward, thus rocking the shaft 10, disengaging the pinion 3 from shaft 4, and engaging the shaft 12 with pinion 11. When the parts are constructed in the proportions shown in the drawings, two complete turns of shaft 12 will rotate the mold-wheel through a half-revolution, bringing mold *b* into the previous position of mold *a*. The hand-crank is then released, and the spring 18 restores the parts to normal position. The mold-wheel might be provided with three or more molds, in which case the proportions of the parts would require some change. If four molds equally spaced were used, one turn of the shaft 12 would change from one mold to the next.

Means are provided for automatically adjusting the trimming-knives to suit any par-

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 ticular mold which is brought to operative position. As shown in Figs. 2, 3, and 4, 20 indicates the usual fixed knife, and 21 the usual adjustable trimming-knife, of the knife-
 5 block. The knife 21 is adjusted by means of a wedge 22, which wedge is connected with and adjusted from the shaft 12 by means of pinion 23 on said shaft, gear 24, cam 25 on
 10 said gear, and a lever 26, having a roller 27 running on said cam and an arm 28 engaging a pin 29 on the wedge 22. A spring 30 is provided for holding the lever to the cam. A stop 31 may also be provided, as shown in Fig. 4, to limit the movement of the wedge.
 15 This is not essential, however, as the cam can be depended upon to adjust the knife for any desired thickness of slug.

The operation of the knife-adjusting device will be obvious from the foregoing description. The form of the cam will depend upon
 20 the number and sizes of the molds in the wheel.

In the following claims I shall designate the disconnecting devices 5 6 as a "clutch,"
 25 the understanding being that the term "clutch" covers any device which may be operated by a handle or lever connected with the machine and which will serve to free the mold-wheel from its operating mechanism, so
 30 that it may be turned to shift from one mold to another.

I am aware that it has been heretofore proposed to disconnect the mold-wheel from the machine to provide for shifting the same; but
 35 such disconnection has required the loosening of a nut or other permanent part of the machine by means of a wrench or other tool and the tightening of such part again to restore the mold-carrier to operative condition.

40 The term "clutch" as used herein is not intended to cover constructions in which parts of the machine are required to be loosened prior to disconnecting the mold-carrier from its operating means.

45 It will be evident that the principle of my invention may be embodied in many different forms, and it is therefore to be understood that the invention is not limited to the particular construction and arrangement of parts
 50 illustrated and described.

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

1. In a linotype-machine, the combination
 55 with a movable mold-carrier provided with a plurality of molds of different sizes and a power-operated means for moving said carrier, of a clutch by means of which solely said carrier and its driving means may be connect-
 60 ed and disconnected and manually-operated means for adjusting said mold-carrier while it is disconnected from its operating means.

2. In a linotype-machine, the combination
 65 with a rotatable mold-carrier provided with a plurality of molds of different sizes, of power-operated means for rotating said carrier, a clutch by means of which solely said carrier

and its rotating means may be connected and disconnected, whereby the mold-carrier may be quickly adjusted to bring any desired mold
 70 into operative relation with the metal-injecting mechanism, and means for adjusting the mold-carrier when disconnected.

3. In a linotype-machine, the combination
 75 with a rotatable mold-carrier provided with a plurality of molds of different sizes, of power-operated means for rotating said carrier and a clutch by means of which solely said carrier and its rotating means may be connected and disconnected, whereby the mold-carrier
 80 may be quickly adjusted to bring any desired mold into operative relation with the metal-injecting mechanism.

4. In a linotype-machine, the combination
 85 with a rotatable mold-carrier provided with a plurality of molds of different sizes, of power-operated means for rotating said carrier, a clutch for connecting and disconnecting said carrier and its rotating means, and a manu-
 90 ally-operated pinion for rotating said mold-carrier, when disconnected from its driving means, to bring any desired mold into operative relation with the metal-injecting mechanism.

5. In a linotype-machine, the combination
 95 with a rotatable mold-carrier, of a driving-pinion therefor, a normally idle manually-operated pinion also in engagement therewith, and means for simultaneously throwing the
 100 driving-pinion out of service and the manually-operated pinion into service for the purpose of adjusting the mold-wheel to bring any desired mold into operative relation with the metal-injecting mechanism.

6. In a linotype-machine, the combination
 105 with a rotatable mold-carrier provided with a plurality of molds of different sizes, of a driving-pinion and an adjusting-pinion both in engagement with the said mold-carrier, a clutch for each pinion adapted to render it either op-
 110 erative or inoperative, and means for moving said clutches simultaneously.

7. In a linotype-machine, the combination
 115 with a movable mold-carrier provided with a plurality of molds of different sizes, and with relatively adjustable trimming-knives for the slugs, of means for adjusting said carrier to bring any one of said molds into operative relation with the metal-injecting mechanism, and means for simultaneously adjusting the
 120 trimming-knives to correspond to the operative mold.

8. In a linotype-machine, the combination
 125 with a movable mold-carrier provided with a plurality of molds of different sizes, and with relatively adjustable trimming-knives for the slugs, of manually-operated means for adjusting said mold-carrier to bring any one of said molds into operative relation with the metal-injecting mechanism, and connections
 130 between said manually-operated means and the trimming-knives, whereby said knives are automatically adjusted to correspond with the opening of the operative mold.

9. In a linotype-machine, the combination with a mold-wheel having a plurality of molds of different sizes, and with relatively adjustable trimming-knives for the slugs, of manually-operated means for simultaneously adjusting the mold-wheel to bring any desired mold into operative relation with the metal-injecting mechanism and simultaneously adjusting the relative position of the trimming-knives, for the purpose set forth.

10. In a linotype-machine, the combination with a rotatable mold-carrier provided with a plurality of molds of different sizes, and with relatively adjustable trimming-knives for the slugs, of manually-operated adjusting means comprising a pinion for engaging the mold-carrier, and a cam for moving one of said knives.

11. In a linotype-machine, the combination with a rotatable mold-carrier, of a driving-pinion engaging said carrier, an adjusting-pinion engaging said carrier, clutches for throwing said pinions into and out of service, and a rock-shaft and arms connecting said clutches, said parts being arranged to throw the pinions into service alternately.

12. In a linotype-machine, the combination with a rotatable mold-carrier provided with a plurality of molds of different sizes, of a normally idle pinion engaging said carrier, and a handle adapted both to throw said pinion into and out of service and to turn it to effect the adjustment of the mold-carrier.

13. In a linotype-machine, the combination with a rotatable mold-carrier, of a driving-pinion therefor, a spring-operated clutch normally connecting said pinion with power-operated mechanism, and a handle for throwing said clutch out of operation.

14. In a linotype-machine, the combination with a rotatable mold-carrier, of a driving-pinion, an adjusting-pinion, clutches for throwing said pinions into and out of service, a rock-shaft, and arms on said rock-shaft engaging said clutches respectively.

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

CARL MUEHLEISEN.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.