

No. 631,217.

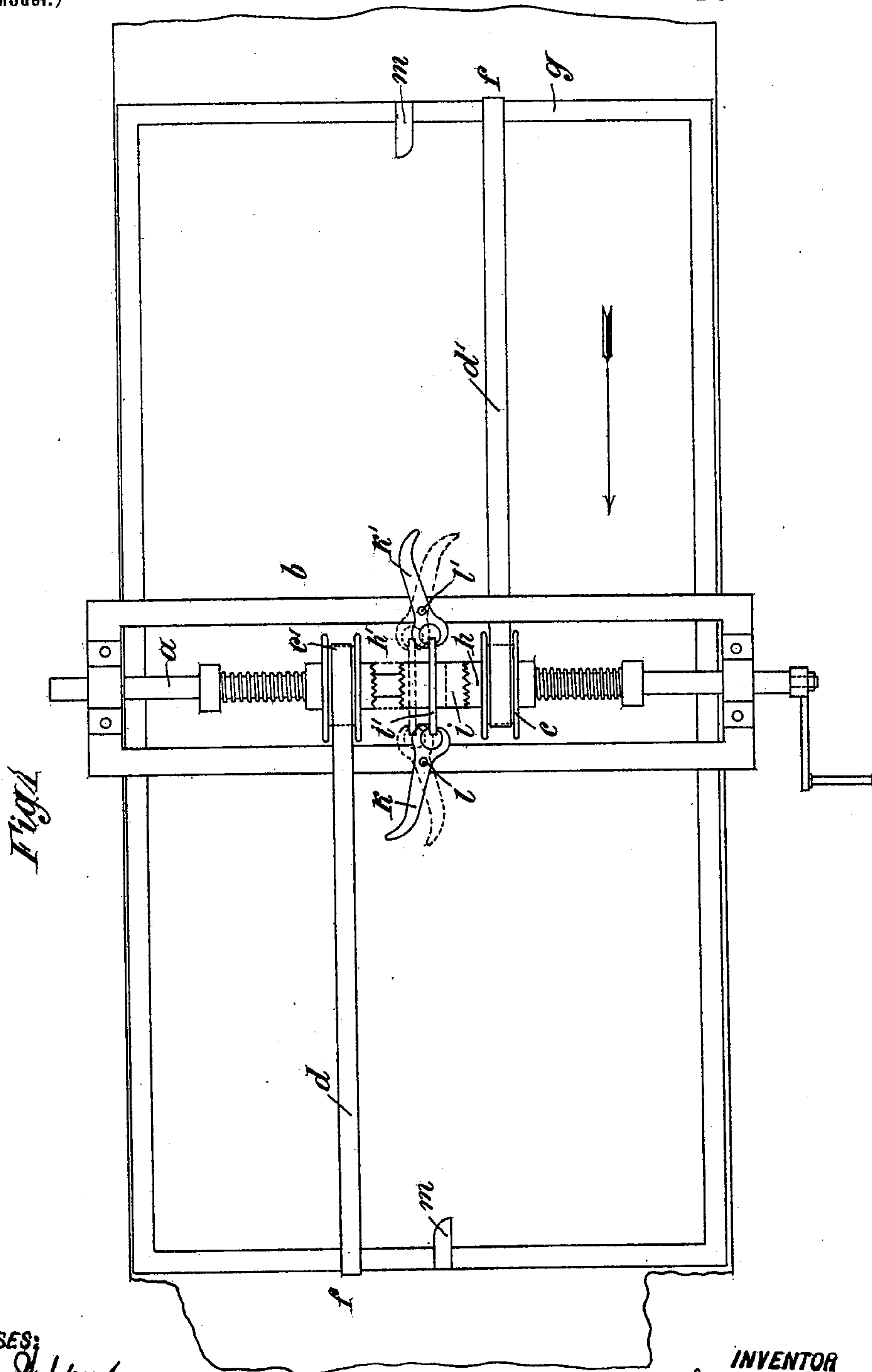
Patented Aug. 15, 1899.

C. KRUMING.
REVERSING MECHANISM.

(Application filed Apr. 18, 1899.)

(No Model.)


2 Sheets—Sheet 1.



WITNESSES:
Isabella Haldron.

Admunt

INVENTOR
Christoph Huming
~~AT D~~

BY 

ATTORNEYS

No. 631,217.

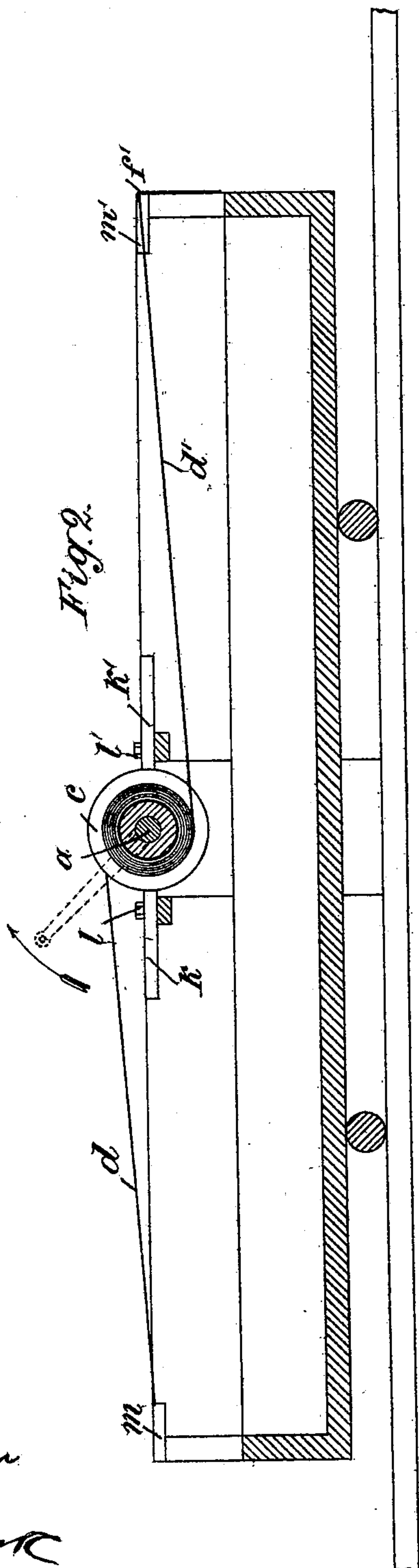
Patented Aug. 15, 1899.

C. KRUMING.
REVERSING MECHANISM.

(Application filed Apr. 18, 1899.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES:
Isabella Waldron

Attest

INVENTOR

Christoph Kruming

BY

Richardson

ATTORNEYS

UNITED STATES PATENT OFFICE.

CHRISTOPH KRUMING, OF GRIWA-SEMGALLEN, RUSSIA, ASSIGNOR TO HUGO HERMANN MEYER, OF RIGA, RUSSIA.

REVERSING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 631,217, dated August 15, 1899.

Application filed April 18, 1899. Serial No. 713,478. (No model.)

To all whom it may concern:

Be it known that I, CHRISTOPH KRUMING, a subject of the Emperor of Russia, residing at Griwa-Semgallen, in the Empire of Russia, have invented certain new and useful Improvements in Reversing Mechanism, (for which I have applied for a patent in Russia and which application is dated October 19, 1898,) of which the following is a specification.

The invention is illustrated in the accompanying drawings.

Figure 1 is a plan view, and Fig. 2 a front view, of the invention as it is applied, by way of example, to a calender for imparting to the weighted work-board a reciprocating motion.

The new gear for alternately changing the direction of motion consists of a shaft *a* extending through the whole width of the machine and supported on both ends in a frame *b*. Between the two bearings there are arranged upon the shaft *a* two belt-pulleys *c* and *c'*, loosely turning upon the said shaft. To these pulleys are fastened the ends of belts *d* and *d'*, respectively, while the two other ends are attached at *f* and *f'* to the mangling-board *g* of the calender. Between the two pulleys *c* and *c'*, which carry on the sides facing each other a toothed coupling *h* and *h'*, respectively, there is arranged the shifter *i*, displaceable upon the shaft *a*, in the longitudinal direction of the latter, by means of a key and key-groove, but not susceptible to revolve. The shifter *i* is provided on both ends with toothed couplings, which can be thrown into gear with the couplings *h* and *h'*, according as the shifter is moved in one or the other direction. In the middle the shifter carries a disk *i'*, engaging into the two forks *k* and *k'*, pivoted on vertical studs *l* and *l'*, respectively, provided on the frame *b*. On the side of the points of attachment *f* and *f'* of the belts *d* and *d'* there are fixed striking-tappets *m* and *m'* for the forks *k* and *k'*.

The gear works as follows: If the shaft *a* is put in revolution by means of a crank by hand or by means of a belt-pulley from a motor—say in the direction indicated by the arrow in Fig.

2—and the shifter *i* is thrown at the same time into gear with the coupling *h*, the disk *c* will revolve with the shaft *a*. The belt *d* is rolled up upon the disk *c*, moving thus the mangling-board in the direction indicated by the arrow in Fig. 1 until the lever of the fork *k'* strikes against the tappet *m'*, whereby the fork *k'* is pivoted on the stud *l'*, so that the shifter *i* is disengaged from the coupling *h* and thrown into gear with the coupling *h'*. In continuing to turn the shaft *a* in the same direction the disk *c* will turn with the shaft and roll up the belt *d*, and in consequence the mangling-board *g* will move in the reverse direction. The mangling-board will be moved until the fork *k* strikes against the tappet *m*, whereby the shifter *i* is disengaged again from the coupling *h'* and thrown into gear with the coupling *h*, and so on. The shaft *a* being continually revolved in this way in the same direction the shifter will alternately be displaced and thrown into gear with the couplings *h* and *h'*, whereby always the direction of motion of the mangling-board will be reversed.

It is evident that the belts *d* and *d'* may be substituted by chains or ropes. In this case the pulleys or disks *c* and *c'* are of a form corresponding to that of the chain or rope.

The gear above described may be used in all machines where a uniform reciprocating motion is to be imparted to the work-board or to a similar part of the machine—say in planing-machines, grinding-machines, and other similar apparatus.

I claim—

1. In combination in a reversing mechanism, a shaft *a* with means for turning it in one direction, loose pulleys *c c'*, on said shaft, straps extending from said pulleys in opposite directions, a shifter *i* splined to the shaft between the pulleys and movable longitudinally to engage the same, the disk *i'* on the shifter, the pivoted forks *k k'* embracing the disk *i'*, the tappets *m, m'*, and the part carrying said tappets to which the straps are attached, substantially as described.

2. In combination, in a reversing mechan-

ism, the shaft *a* with means for moving it in
one direction, the pulleys loose on the shaft,
the shifter between the pulleys splined on the
shaft, means for operating the shifter com-
prising the tappets *m, m*, and the part carry-
5 ing the tappets to which the straps are at-
tached, substantially as described.

In witness whereof I have hereunto signed
my name in the presence of two subscribing
witnesses.

CHRISTOPH KRUMING.

Witnesses:

WILDEMAR MENDE,
KARL EHLERS.