

M. SOBLIK.
PNEUMATIC PRINTING MECHANISM FOR TYPE WRITERS.
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1,079,447.

Patented Nov. 25, 1913.

FIG. 1.

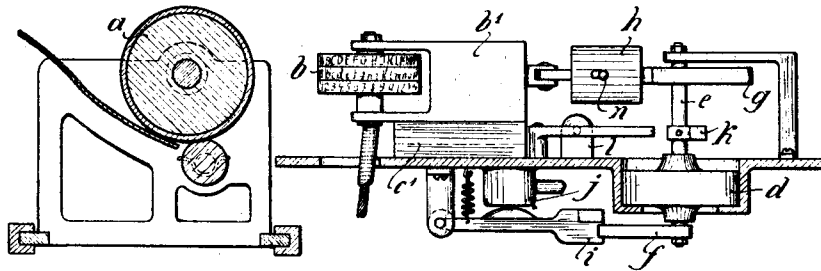


FIG. 2.

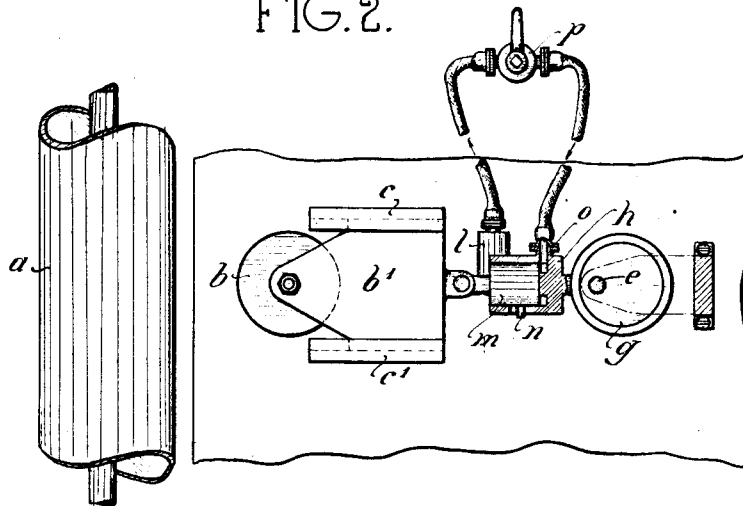
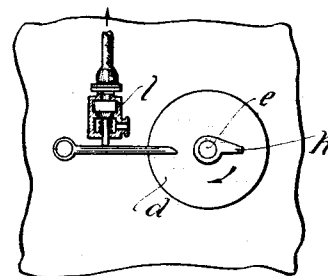


FIG. 3.



Witnesses:
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PNEUMATIC PRINTING MECHANISM FOR TYPE-WRITERS.

1,079,447.

Specification of Letters Patent.

Patented Nov. 25, 1913.

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To all whom it may concern:

Be it known that I, MAX SOBLIK, consulting engineer, a subject of the German Emperor, residing at 2 Gartenstrasse, Dresden-Klotzsche, Kingdom of Saxony, Germany, have invented certain new and useful Improvements in Pneumatic Printing Mechanisms for Type-Writers, of which the following is a specification.

10 Pneumatic typewriters, in which the types are slidably fitted in a typewheel and are ejected by means of compressed air, produce less noise in writing than other typewriters, as the types and their guides are very light and the distance which they have to travel until they reach the paper, can be made very small. These typewriters, however, have the disadvantage, that the short travel of the types impairs the visibility of the writing, because in this case the typewheel must be close to the platen. With the increasing length of the travel of the types until they reach the paper also the noise produced by the impact will increase.

25 The present invention has the object to obviate this difficulty by means of a pneumatic printing mechanism, which will print the types in an absolutely silent manner while leaving the writing fully visible, even when carbon copies are to be made.

In the accompanying drawing a constructional form of the invention is exemplified.

Figure 1 is a side elevation of the printing mechanism, with the left side of the guide rail broken away. Fig. 2 is a plan view, partly in section. Fig. 3 is detail of the printing mechanism showing a device for making carbon copies.

In the drawing *a* is the platen, on which, in known manner, a soft covering can be fitted when no carbon copies are to be made. The type wheel *b* to which the types are rigidly fitted, is arranged to slide with its carriage *b*¹ in the guide rails *c*, *c*¹.

45 *d* is a pneumatic motor which works almost noiselessly even at 50 revolutions in the second, as the noise of the impact of the abutment on shaft *e* is small. The eccentric *g* on the shaft *e* will therefore reciprocate the carriage *b*¹ carrying the typewheel *b* in one fiftieth of a second. The intermediate member *h* of the eccentric connecting

rod is made of such a length that the soft covering on the platen or the paper respectively is slightly touched by the types. The printing of the types will therefore be absolutely noiseless and remain visible owing to the sufficiently long stroke of the eccentric.

The motor *d* is stopped in its rotation by the abutment *f* meeting the fork *i*. Only when this fork *i* is depressed by means of the diaphragm *j* under action of a pneumatic impulse, and thereby moved out of the path of the abutment *f*, the motor can complete its revolution. Such pneumatic impulse is sent to the diaphragm *j* each time the typewheel is engaged in a printing position; as this arrangement is immaterial with regard to the present invention, a more detailed description may be here dispensed with. The impact of the abutment against the fork *i* will cause a very slight noise only, as the fork *i* is made in form of a flat spring which allows a certain resilience under the impact and will weaken the noise thereof.

Several carbon copies can only be made on a hard platen. Therefore the soft covering of the platen is removed for this purpose. Now, if the thickness of this covering were not compensated by a sufficient number of sheets of paper, it might occur, that the eccentric connecting rod proves too short and the types do not reach the paper on the platen at all. For the purpose of avoiding the necessity of having to readjust the length of the connecting rod each time carbon copies are to be made, and of insuring a strong impact between the type and the paper, each time the highest point of the eccentric is opposite to the platen, the intermediate member *h* has been provided, which is pneumatically extensible by aid of a nose *k* on the shaft *e* and a valve *l*. From Fig. 2 it may be seen, that this intermediate member *h* is practically a pneumatic press. The travel of the piston *m* is limited by a pin *n*. The compressed air enters into the barrel at *o*, the said barrel communicating with the air supply through a flexible tube containing a valve *p*. The valve *p* communicates by means of a tube with the valve *l*. The nose *k* may be so adjusted, that at the moment when the eccentric starts its return

stroke, the valve *l* will be opened, and a short pneumatic impulse is sent against the piston *m* whereby the latter is moved forward and exerts a pressure sufficient to
5 print the types on the paper. When carbon copies are to be made, the valve *p* must therefore be opened.

The hereinbefore described printing mechanism will work absolutely noiselessly,
10 even when carbon copies are being made, as the latter are not produced by a violent blow of the types against the paper, but by a pressure.

I claim:

15 1. In a typewriter, a platen, a typewheel, an eccentric, means for rotating the same, means for operatively connecting said eccentric to the typewheel whereby the latter is reciprocated toward and away from the
20 platen, and pneumatically controlled means

for increasing the length of said connecting means.

2. In a typewriter, a typewheel, an eccentric, and means for operatively connecting the eccentric to the typewheel, said connect- 25 ing means including a pneumatic press for increasing the length thereof.

3. In a typewriter, a slide, a typewheel journaled therein, an eccentric, and means for operatively connecting the eccentric to 30 the slide, said connecting means including a pneumatic press for increasing the length thereof.

In testimony whereof I have hereunto set my hand in the presence of two witnesses. 35

MAX SOBLIK.

Witnesses:

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