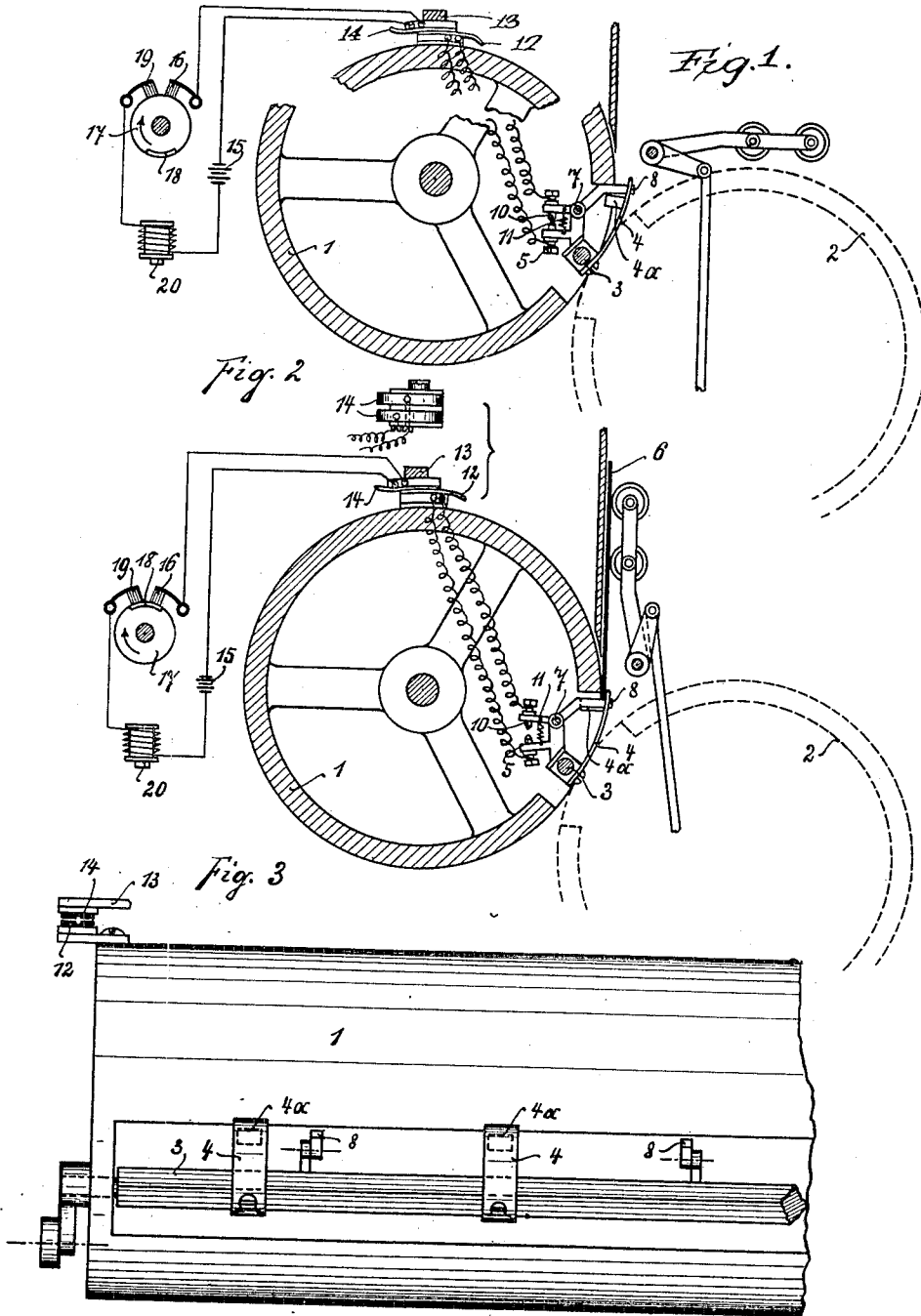


L. VON SAZENHOFEN.
STOP MOTION DEVICE.
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1,120,547.

Patented Dec. 8, 1914.



Witnesses:
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UNITED STATES PATENT OFFICE.

LUDWIG VON SAZENHOFEN, OF NUREMBERG, GERMANY.

STOP-MOTION DEVICE.

1,120,517.

Specification of Letters Patent.

Patented Dec. 8, 1914.

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To all whom it may concern:

Be it known that I, LUDWIG VON SAZENHOFEN, a subject of the Emperor of Germany, residing at Nuremberg, Bavaria, Germany, have invented certain new and useful improvements in Stop-Motion Devices, of which the following is a specification.

The object of the present invention is a device for automatically stopping the operation of sheet metal printing machines as described in my Patent No. 1,089,274, from which this case has been divided out, when the metal sheets are incorrectly fed into the machine. As in the known device of this kind applicant uses stops which are conductively connected with a source of electricity in such a manner that the operation of the machine is automatically stopped if the work piece is not in contact with all of said stops. The stop motion device according to the present invention differs from the known devices of this kind by the fact, that the stops are arranged within the printing cylinder in juxtaposition to the front marks thereof and are connected by means of contacts with a stopping mechanism on the outside of the cylinder of well known construction, in such a manner that the stops, when closing the circuit, extend slightly above said front marks and positively actuate the stopping mechanism of the machine in case the metal sheets are not resting perfectly correct upon said marks.

Another advantage obtained by the device according to the present invention is to be seen in the fact that the front marks are arranged upon the same shaft and operate therefore simultaneously.

In the accompanying drawing: Figures 1 and 2 are cross-sections through the device in different positions. Fig. 3 is a front elevation of the same.

The machine with which the device is to be used, comprises as customary two revolving cylinders 1 and 2, the former of which grips the automatically fed metal sheet 6 by means of the grippers 4 provided with front marks 4^a and secured to the rocking spindle 3 and pulls the sheets 6 between both cylinders.

In order to automatically stop the machine if one of the sheets should not be correctly fed into the cylinder, the following safety device is provided: On the spindle

3 carrying the grippers 4 with their front marks 4^a, is secured a contact 5 on the end of which the stop or abutment 8 is pivotally mounted by means of the spindle 7, said abutment carrying a second contact 10. Both contacts are caused to approach each other by a spring 11. On the cylinder 1 is secured a brush contact 12 which is temporarily brought into contact with the brush contact 14 secured to the frame of the machine 13. By this means it is possible during a certain period of the revolution of the cylinder to electrically connect and disconnect the stop device from time to time. The brush contact 14 could also be a brush ring in which case the electrical connection would be a permanent one. When the sheet 6 is placed in position, the stop 8 is depressed against the action of the spring 11 until the sheet is fully and evenly resting upon the front marks 4^a so that the contacts 5 and 10 are caused to move apart. If, however, the sheets 6 were to assume an incorrect position, for instance an oblique one, so that only one or none of the stops 8 is depressed, then the two contacts 5 and 10 remain closed thus causing the stopping of the machine.

From a source of supply 15, the electric current passes over the stationary contact 14 to the contact 12, thence to the contact screw 10 over the point of break to the contact screw 5, and thence back over the contacts 12 and 14 to the sliding brush 16 and by way of the contact 18 secured to the revolving disk 17, to the brush 19, and thence to the releasing magnet 20 and back to the source of current 15. If a releasing armature is arranged in front of the magnet 20, then the machine will be brought to a standstill by this means, if the circuit is not broken by the contact screws 5 and 10, the circuit is not broken when the stops 8 are not depressed owing to the sheets assuming an incorrect position as it does not truly rest upon the front marks 4^a.

The cylinder 1 performs a full revolution while the revolving disk executes one-half revolution. The cylinder 1 after assuming its original position, rests until the revolving disk 17 executes its half revolution. During this time the printing carriage is thrown backward so that during its following return movement, it can print upon the next sheet. Therefore the contacts 5 and 10 are always cooperating with the contact 18 in such a manner that the circuit is only

closed when the cylinder is in position to grip the sheet 6 so that the machine is stopped, if the sheet 6 does not open the circuit by depressing the stop 8. The device as described can also be used with equal advantage in paper printing presses.

I claim:

1. Stopping device for printing machines comprising in combination, a printing cylinder, front marks upon said cylinder, stops within said cylinder in juxtaposition to the front marks thereof, a connection for the shafts of said stops and front marks and means for electrically connecting said stops with the stopping mechanism of the machine.

2. Stopping device for printing machines comprising in combination, a printing cylinder, grippers upon said cylinder, front marks upon said grippers, a rocking spindle to which said grippers are secured, stops within said cylinder in juxtaposition to the front marks thereof, shafts for said stops and for said front marks, said stops adapted to be depressed by a sheet when evenly resting upon said front marks, a connection for the shafts of said stops and front marks, and contacts upon said spindle and said

shaft over which normally a circuit is closed, adapted to be operated for breaking said circuit by a correctly introduced sheet to be printed upon and for actuating the stopping mechanism of the machine if said circuit is not broken by an incorrectly introduced sheet.

3. In a printing machine a stopping device of the character described comprising in combination with the printing cylinder, stops within said cylinder, a shaft for said stops, a second shaft, grippers and front marks upon said shaft and a bearing for said stops upon said first named shaft forming a contact for a normally closed circuit adapted to be operated upon the correct introduction of a sheet to be printed upon evenly depressing said stop and resting upon said front marks for breaking said circuit and means for actuating the stopping mechanism of the machine if said sheet is incorrectly introduced and said circuit is not broken.

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

LUDWIG VON SAZENHOFEN.

Witnesses:

A. HEERLEN,
H. KREHM.