fischertechnik im Unterricht

Statik

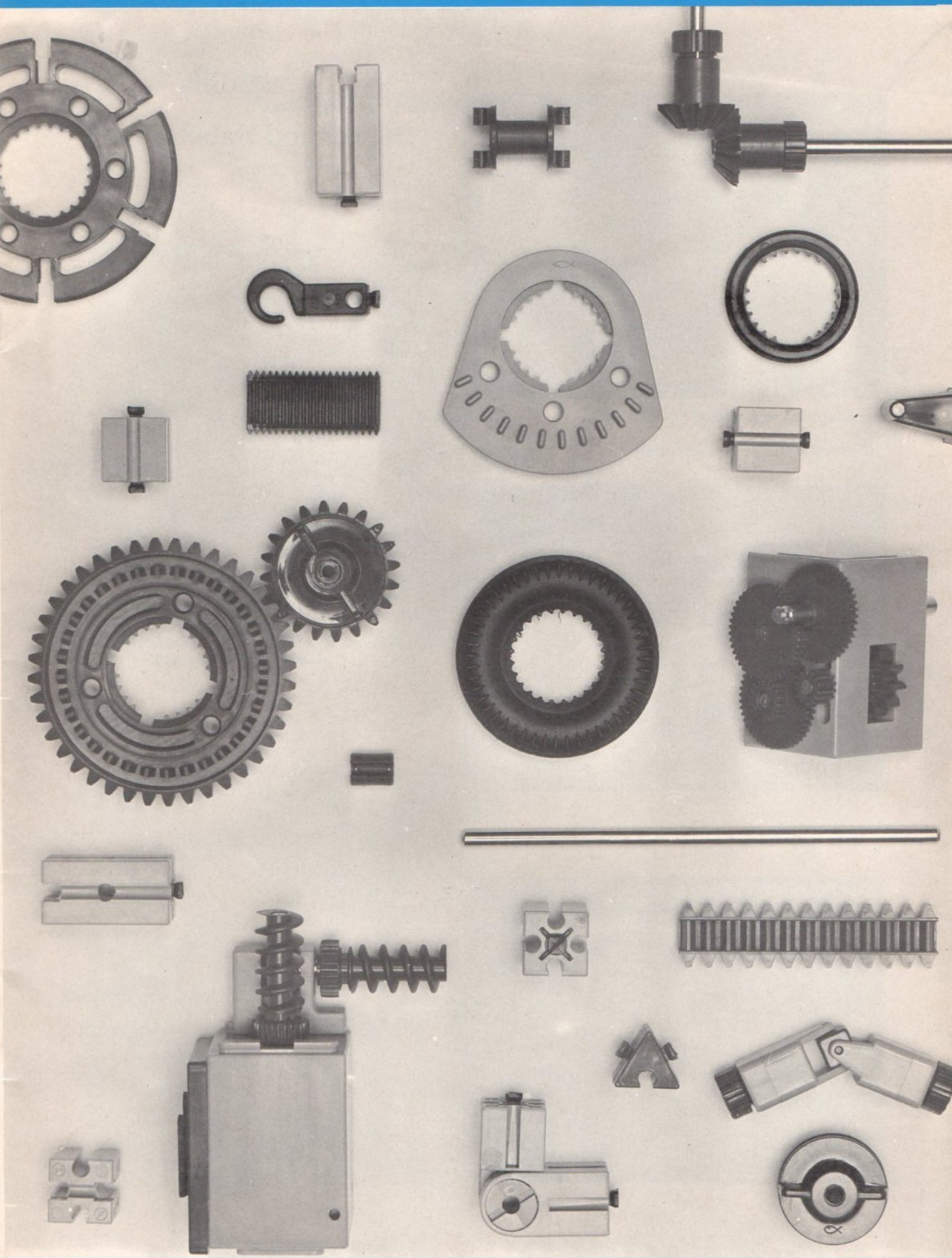
Kinematik

Maschinenelemente

Elektrotechnik

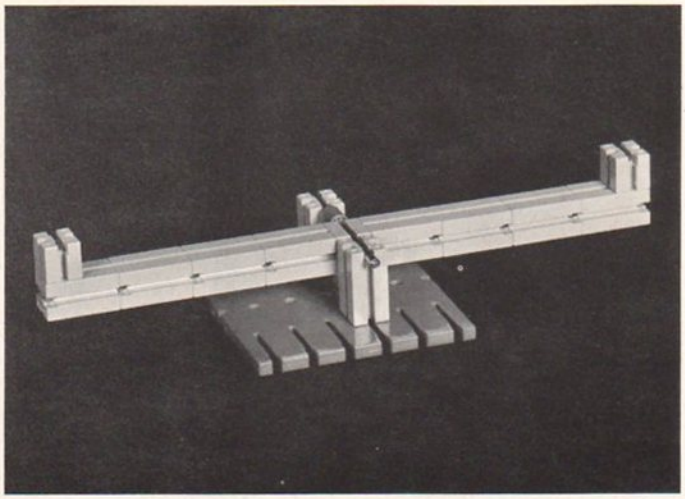
Elektromechanik

Steuerung

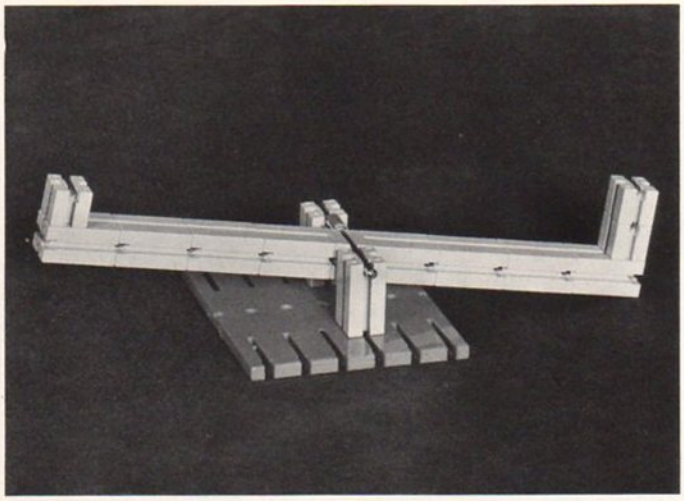


Statik

Hebel und Hebelsystem

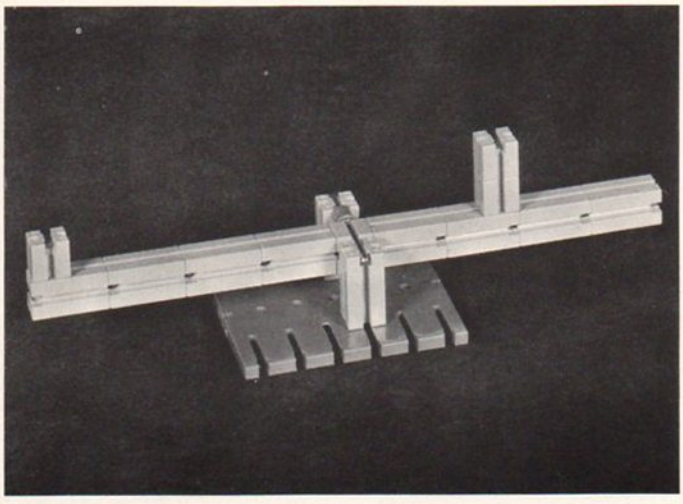


Schaukel im Gleichgewicht



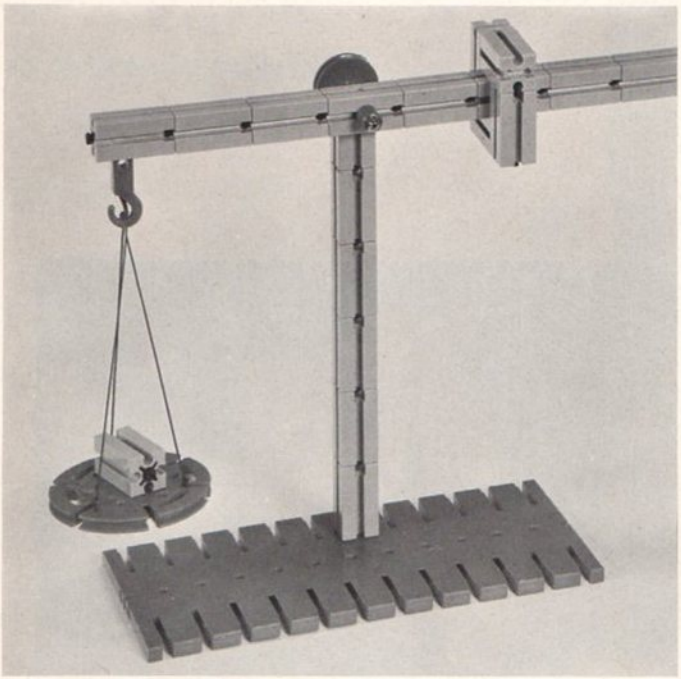
Eine Seite doppelt belastet

Gleichgewicht ist gestört

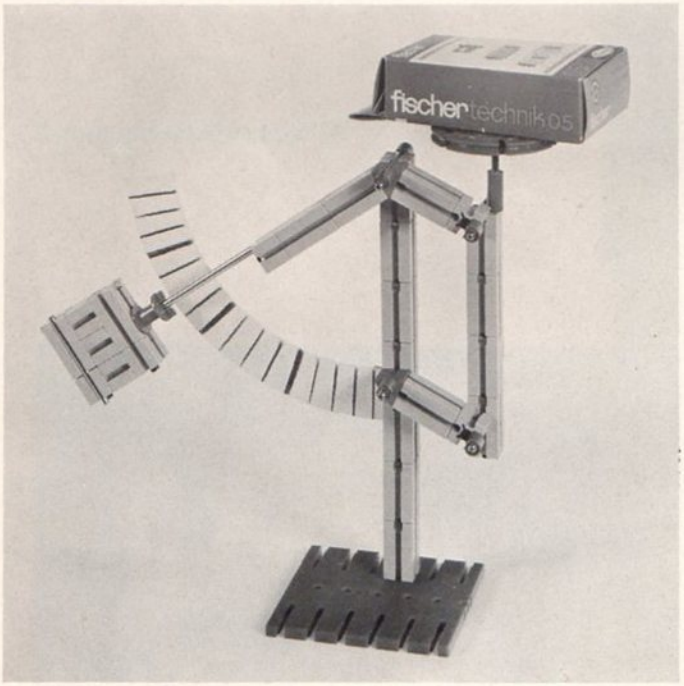


Durch Verschieben des größeren Gewichts ist das Gleichgewicht wiederhergestellt

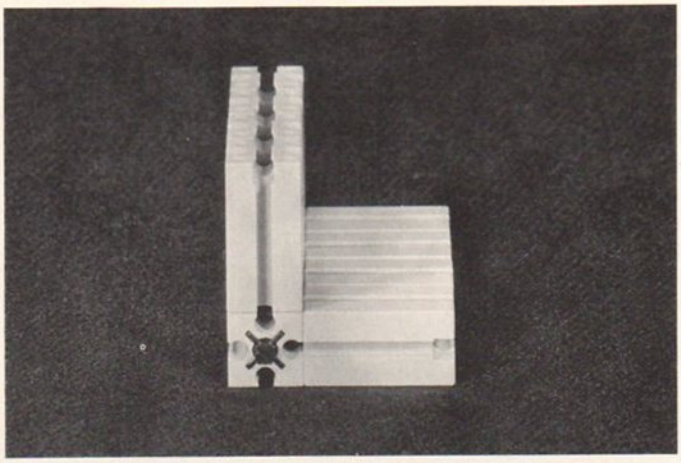
Praktische Anwendung des Hebels



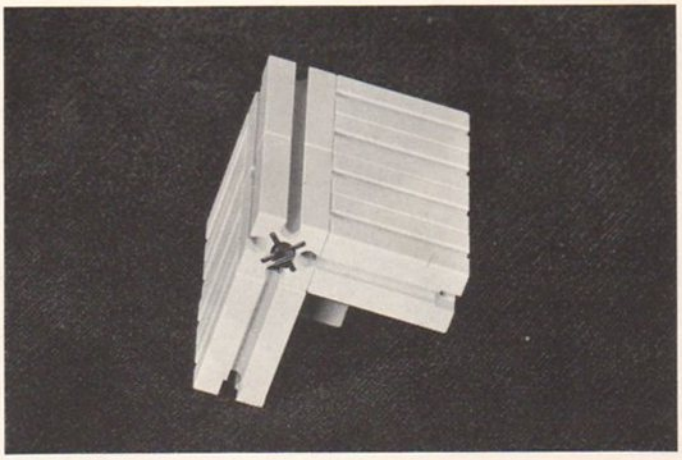
Durch Verschieben des Laufgewichts wird das Gleichgewicht hergestellt

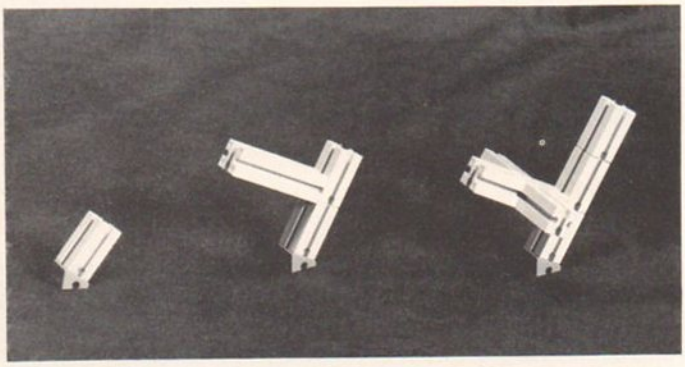


Hebelsystem mit abgewinkelten Hebelarmen

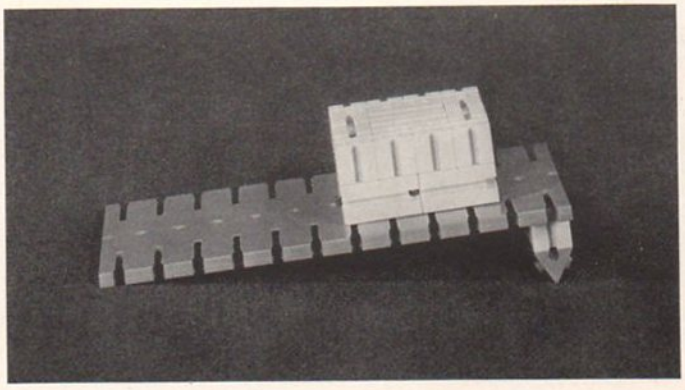


Schwerpunkt





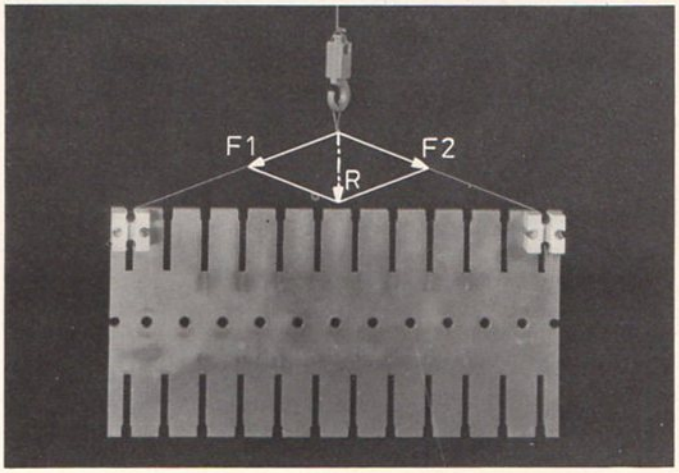
Schwerpunktverlagerung



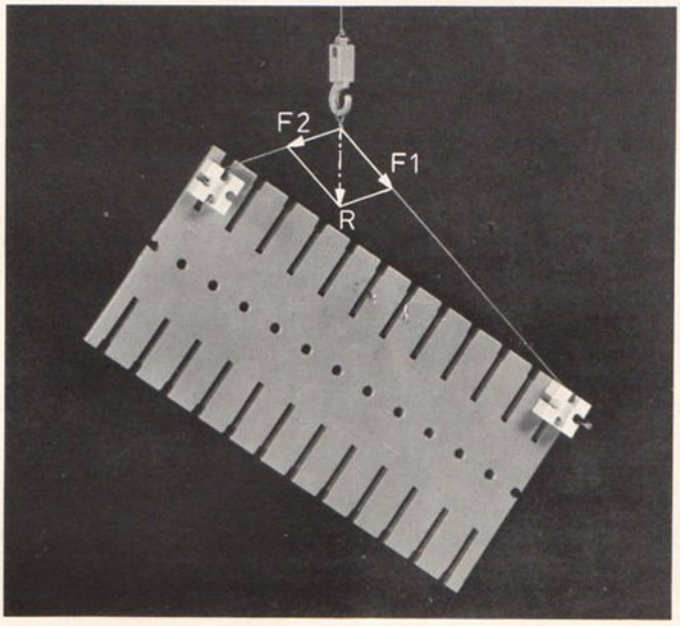
Schiefe Ebene

Darstellung zusammengesetzter Kräfte

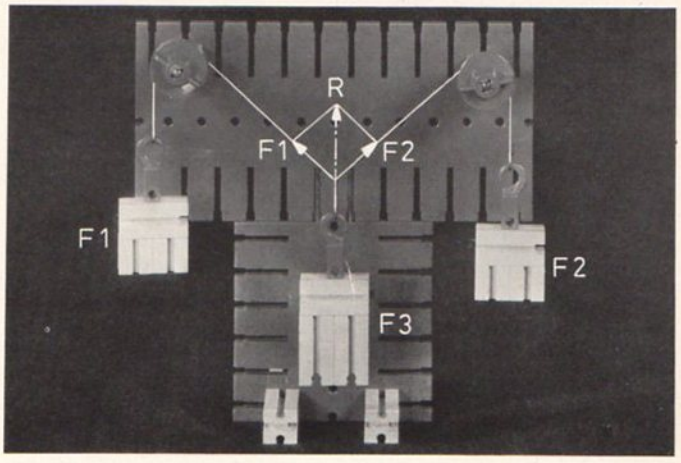
F1 und F2 sind gleich groß

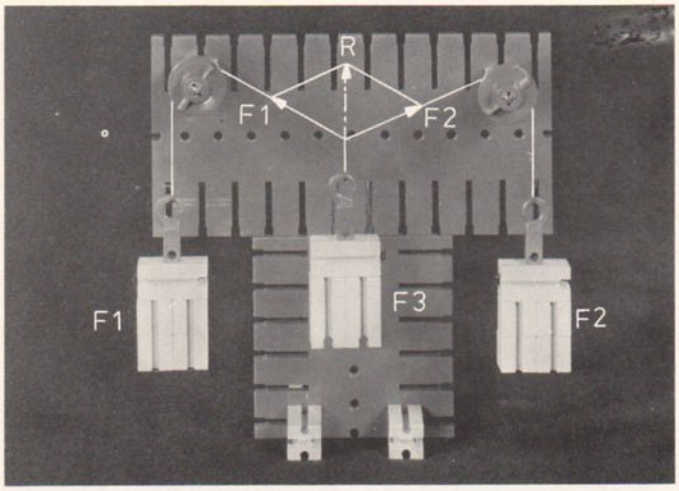


F1 ist größer als F2

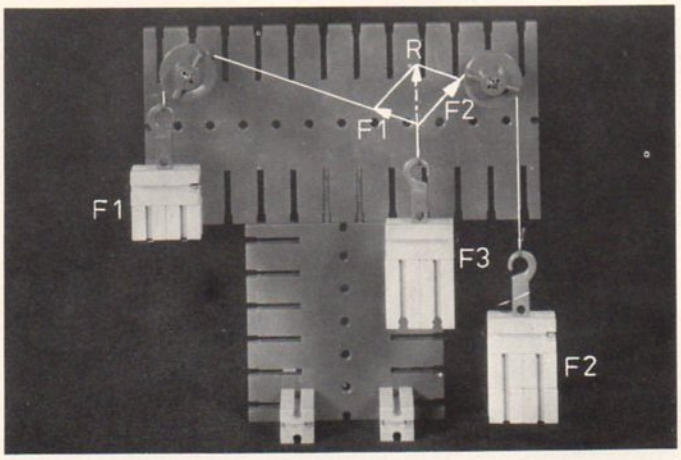


F1 und F2 sind gleich groß R=F3

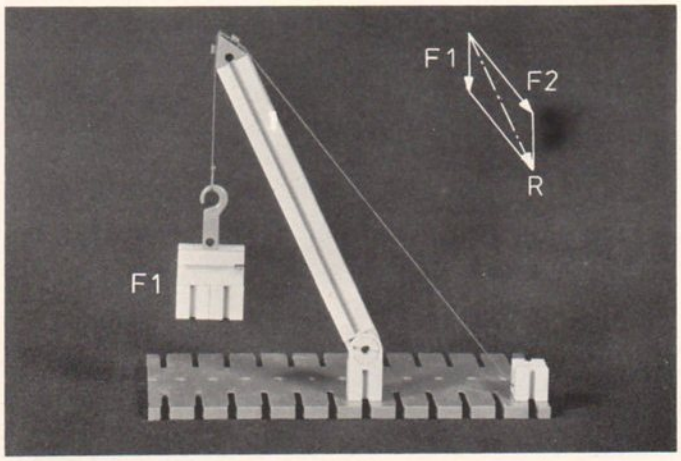




F1 und F2 werden vergrößert
Seil hängt weniger durch

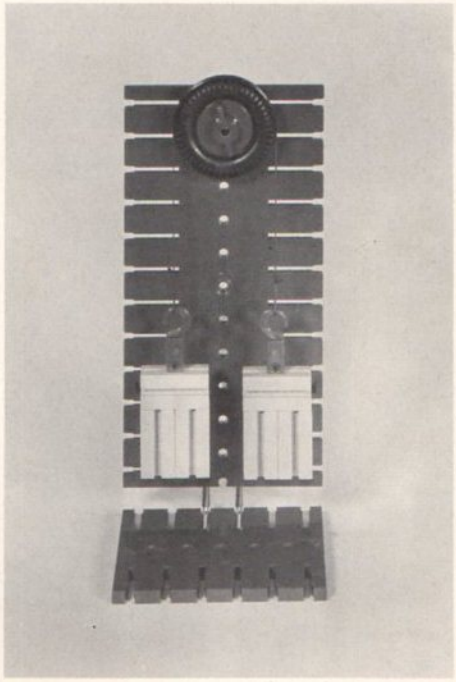


Nur F2 wird vergrößert
Gewicht F3 verlagert sich

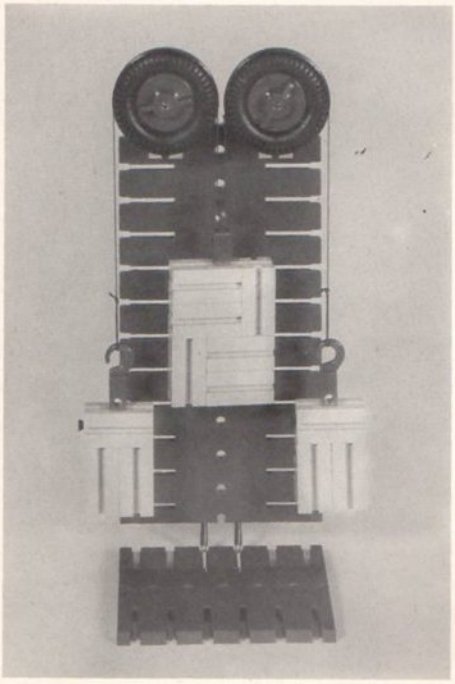


F2 ist größer als F1

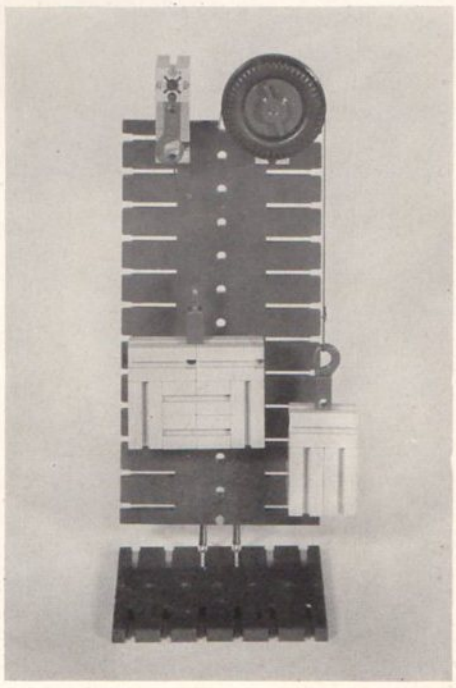
Übersetzung mittels Seilzügen



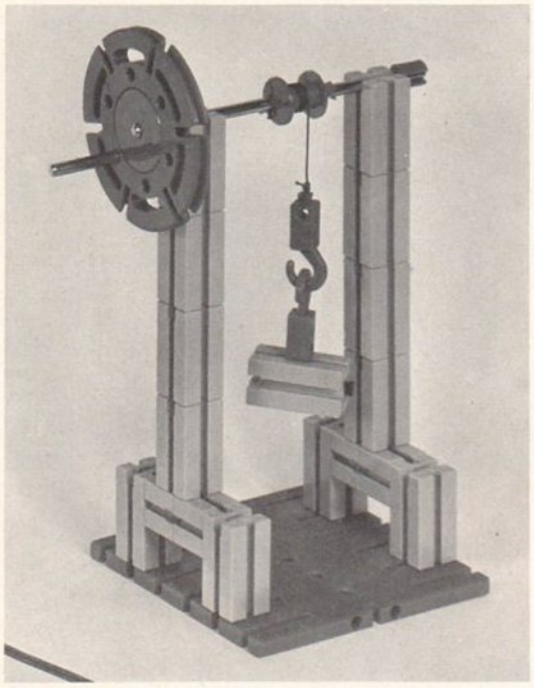
Durch zwei gleich große Gewichte an jedem Seilende wird Gleichgewicht hergestellt



Gleichgewicht ist hergestellt, wenn die beiden Gewichte an den Seilenden zusammen so groß sind wie die Last in der Mitte

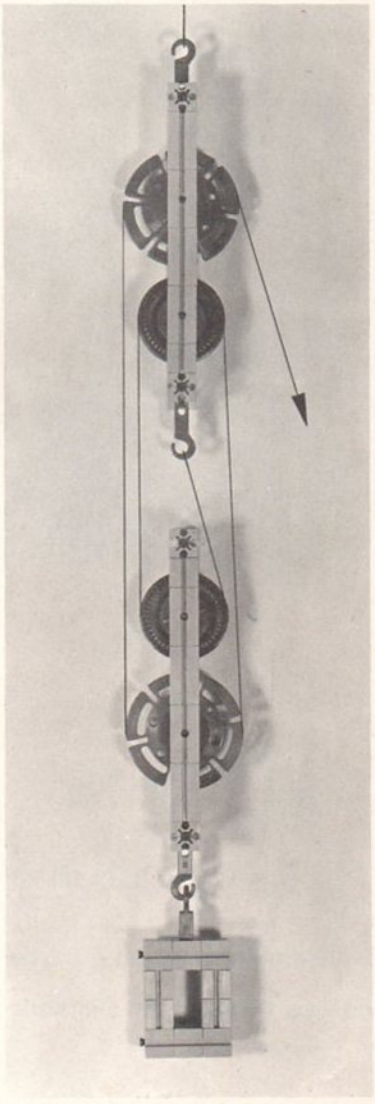


Bei Gleichgewicht ist die Last doppelt so groß wie das Gewicht am Seilende



Wellrad

Handkurbel und Seilrolle auf einer Achse

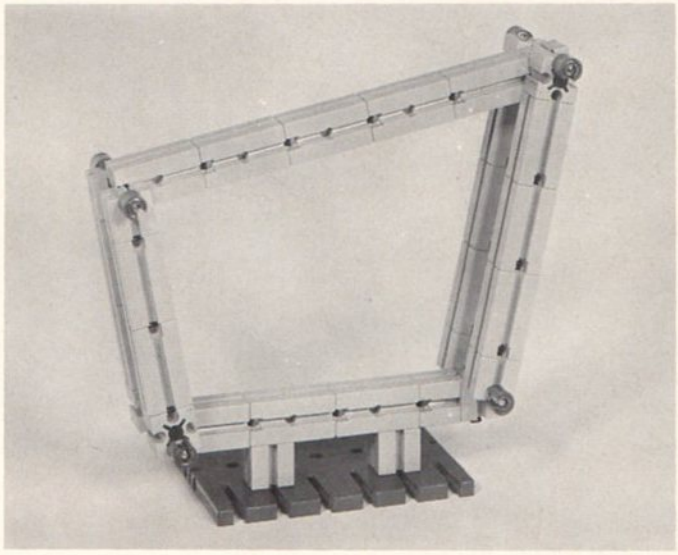


Flaschenzug

Es kommen 4 Rollen zur Wirkung. Um ein Gleichgewicht herzustellen, benötigt man also 1/4 der Kraft von der Last am Haken

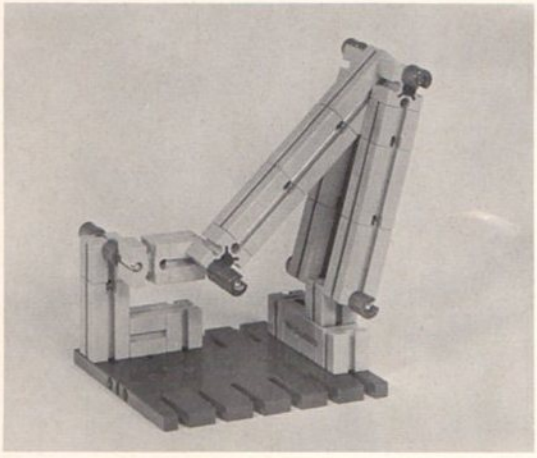
Kinematik

Getriebelehre: Grundlage aller Getriebe ist die Viergelenkkette.

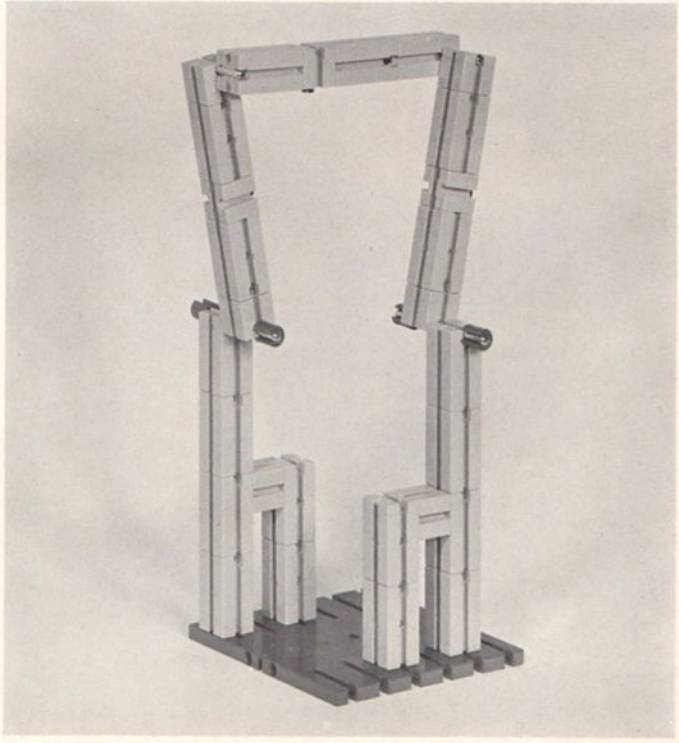


Vier Glieder sind durch Drehgelenk verbunden.

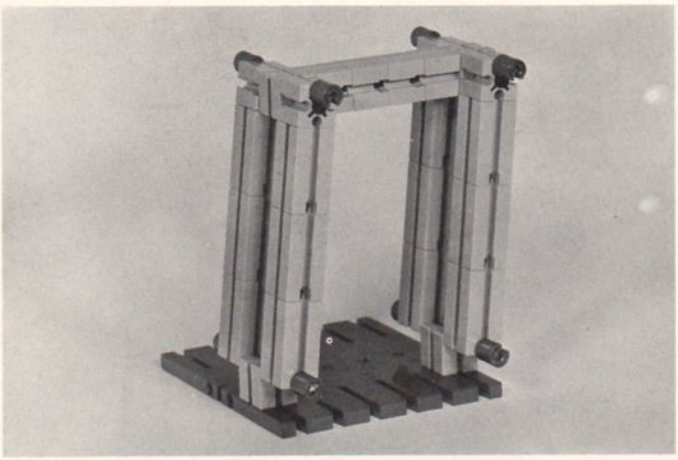
Man leitet davon ab:



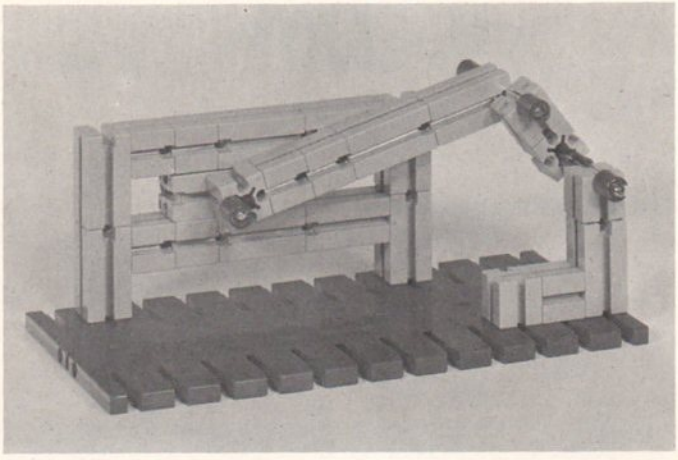
1. Die Kurbelschwinge



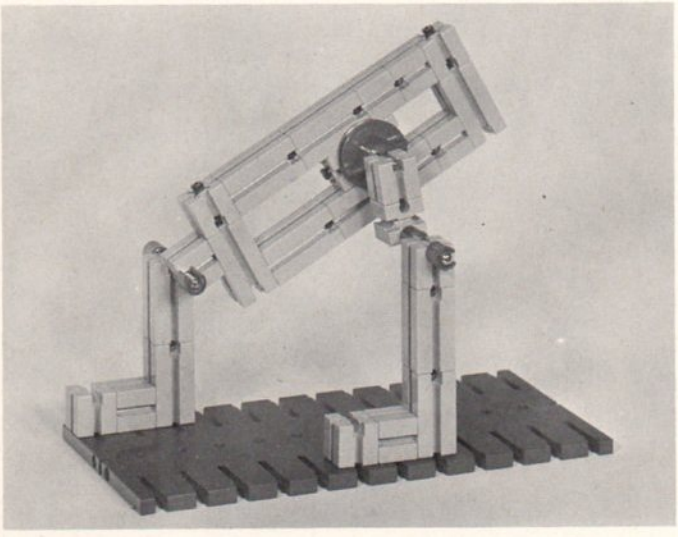
2. Die Doppelkurbel



3. Die Doppelschwinge

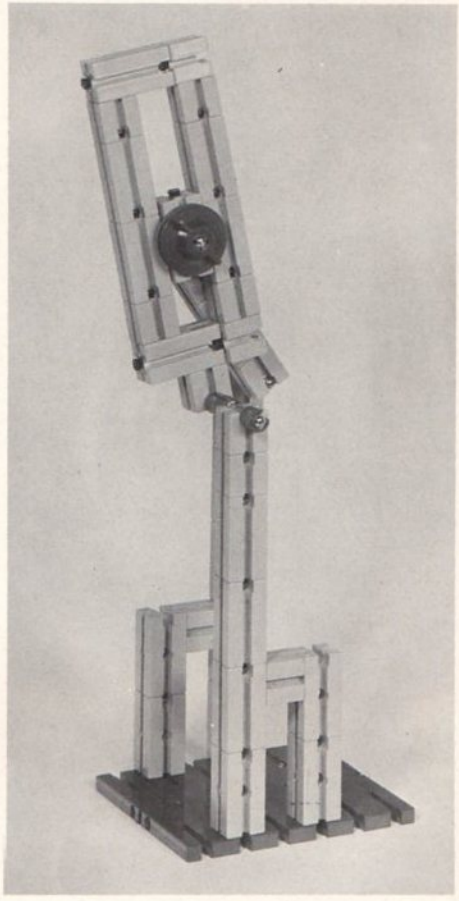


4. Die umlaufende Schubkurbel

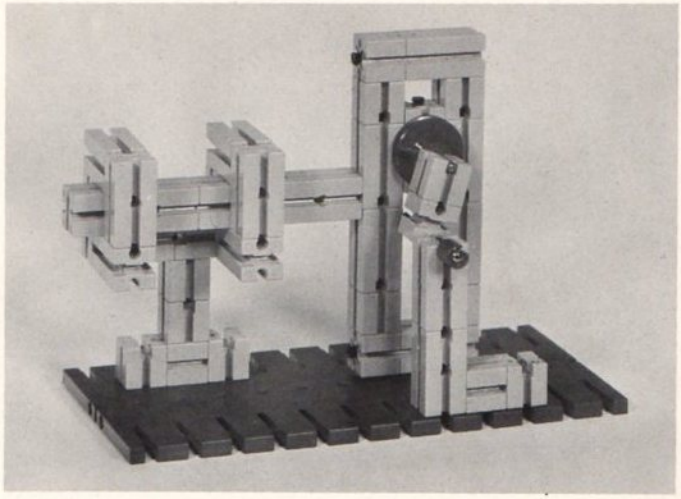


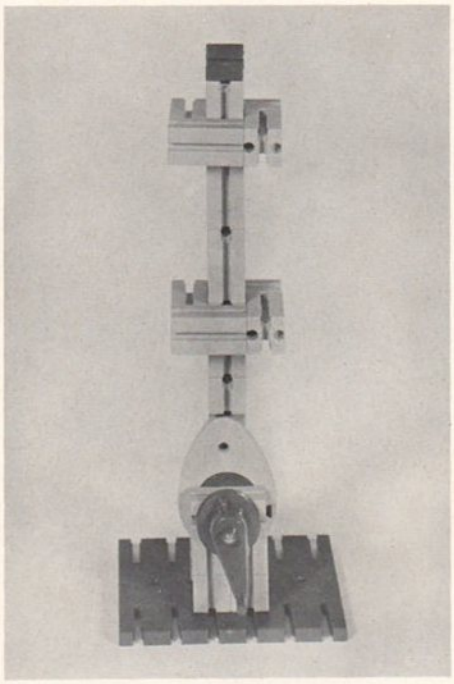
5. Die schwingende Kurbelschleife

6. Die umlaufende Kurbelschleife

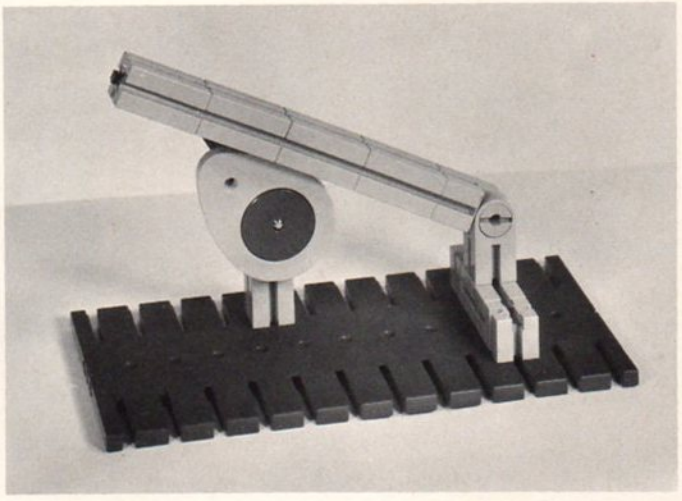


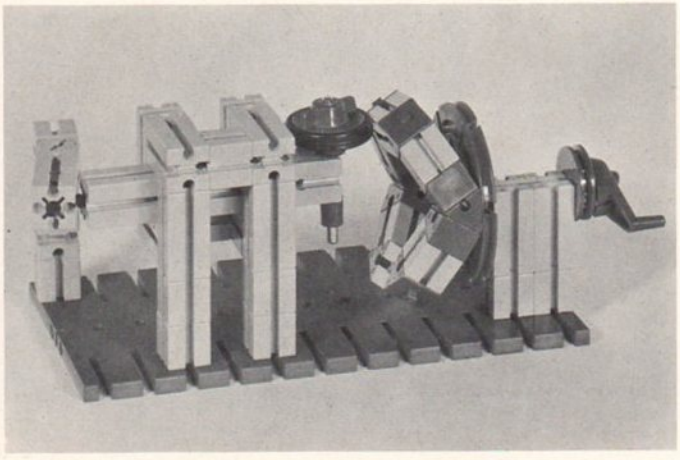
7. Die Kreuzschleife





Ebene Kurvengetriebe



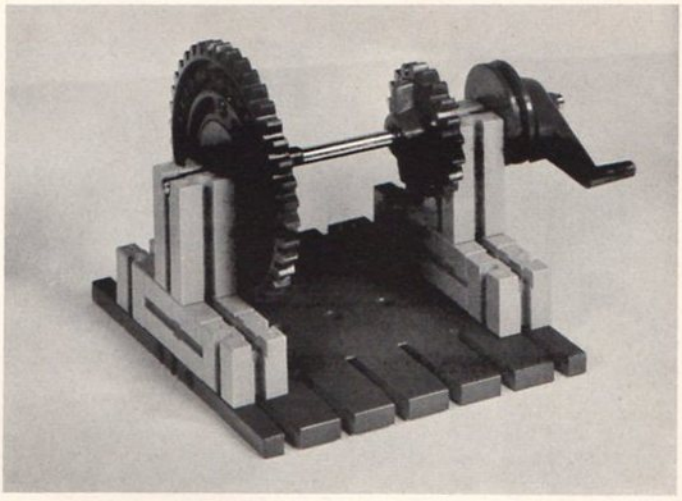


Räumliches Kurvengetriebe

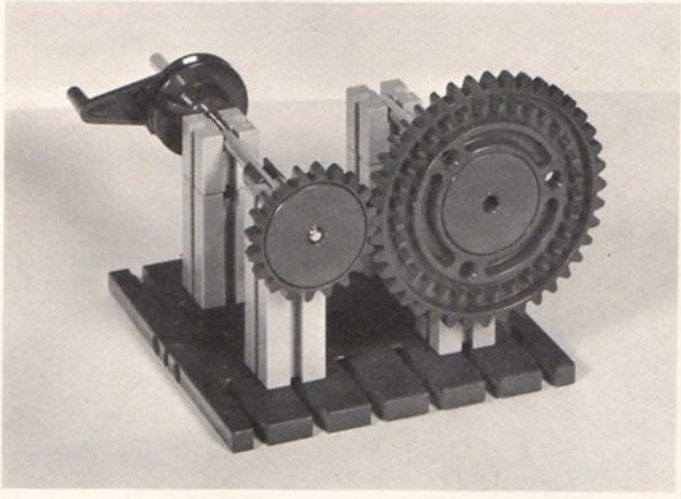
Maschinenelemente

Übertragung einer Drehung mit einer Welle.

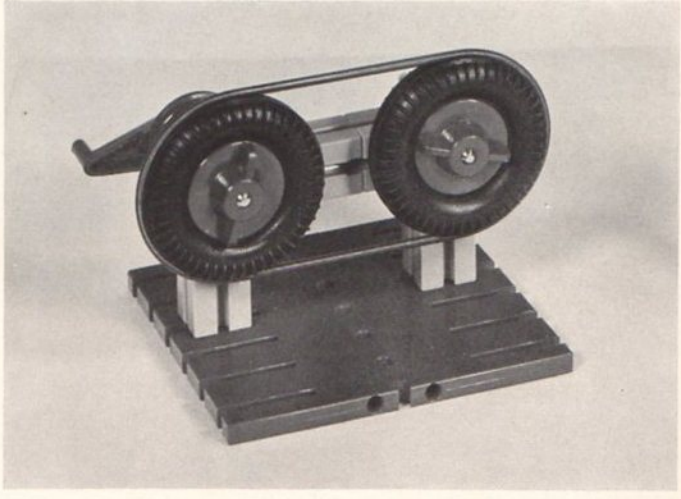
1. Welle

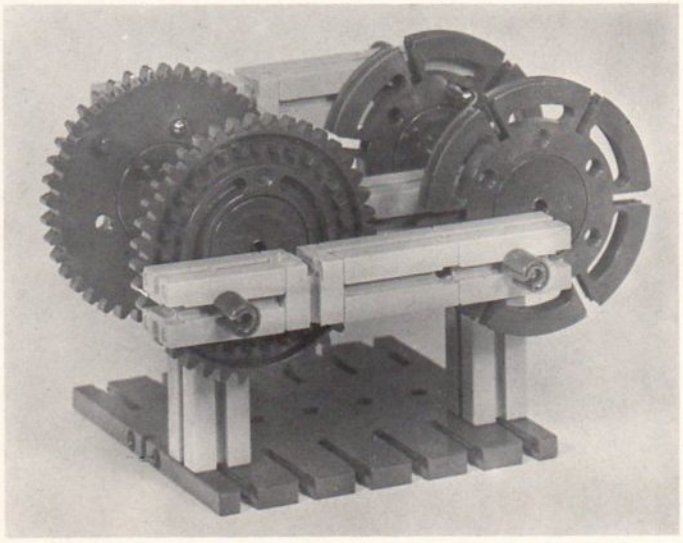


2. mit Räderpaar

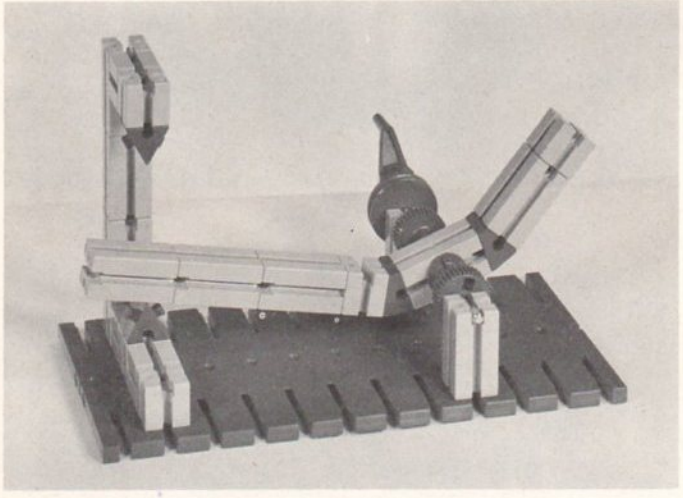


3. mit umlaufendem Zugmittel

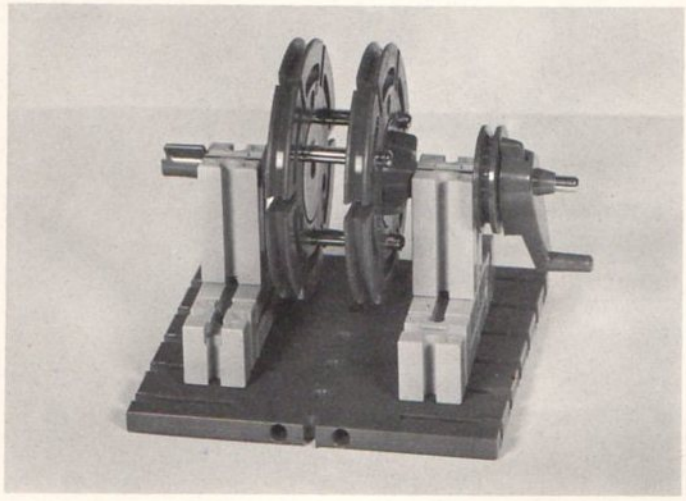




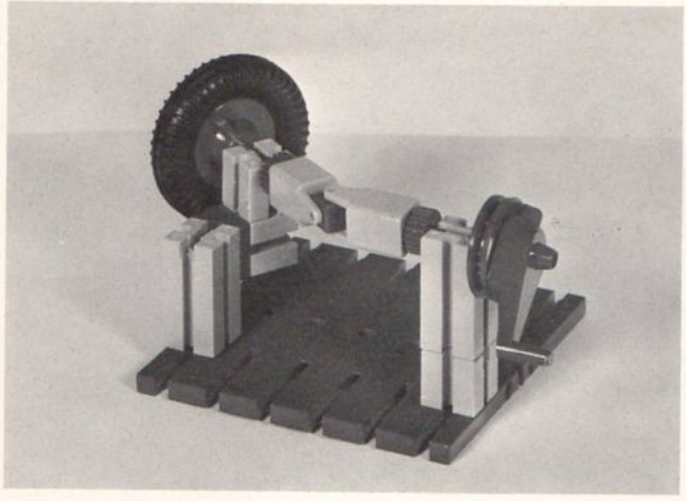
4. mit Kurbelschwinge



5. mit einem winkelbegrenzten Hebel

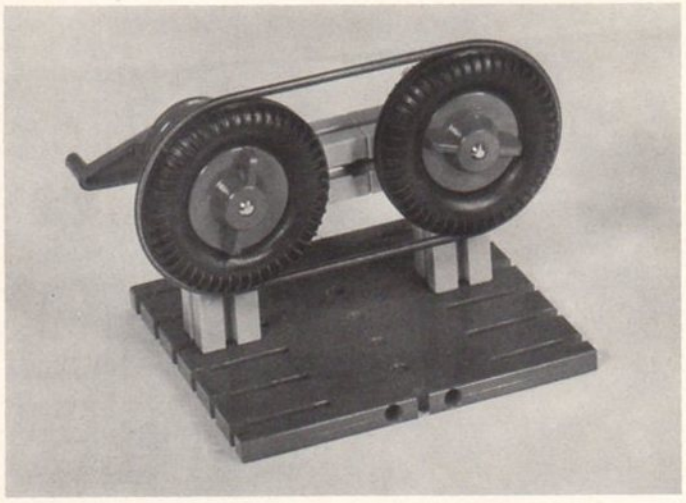


6. mit einer starren Kupplung

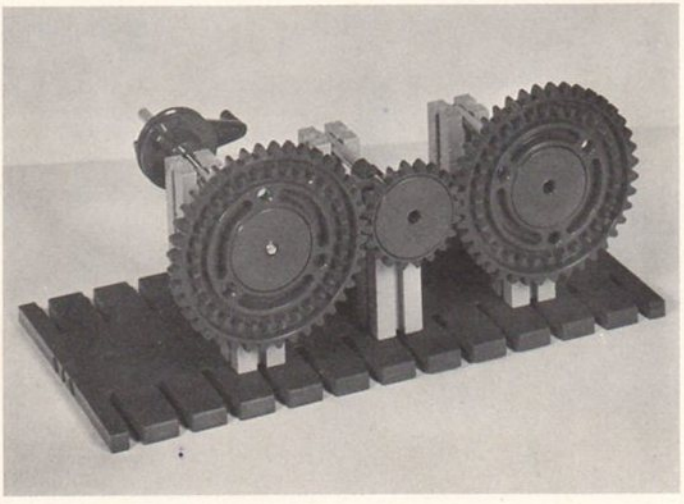


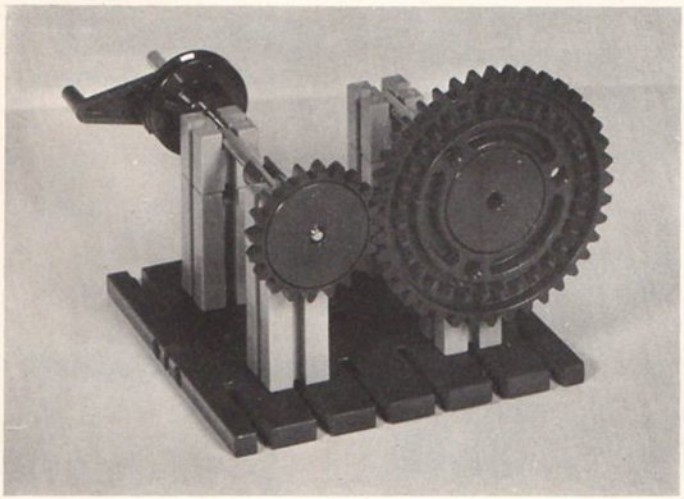
7. mit einem winkelbeweglichen Gelenk

Richtungsänderung von Drehbewegungen:



Drehachsen
parallel verschoben -
Drehrichtung gleichbleibend

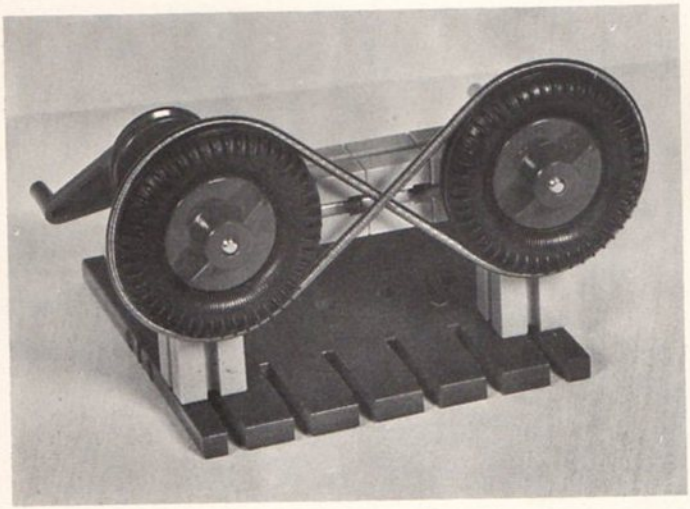


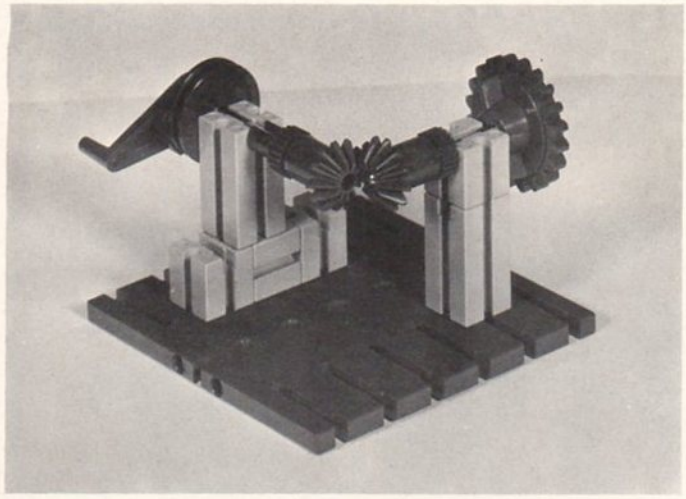


Drehachsen

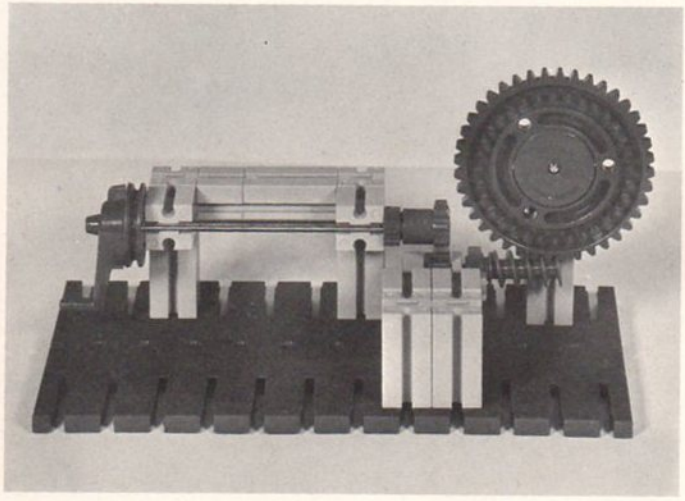
parallel verschoben -

Drehrichtung umkehrend

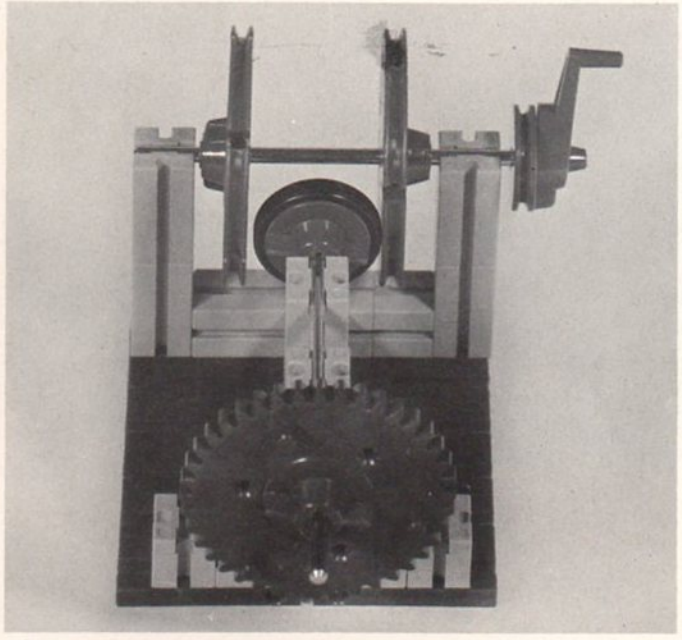




Drehachse abgewinkelt -
Drehrichtung umkehrend

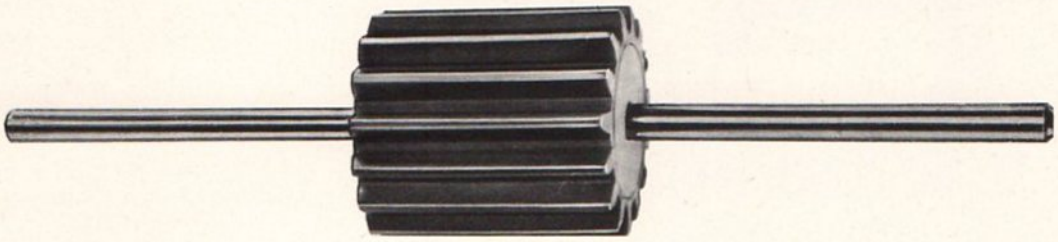


Drehachse gekreuzt -
Drehrichtung gleichbleibend
(wählbar)

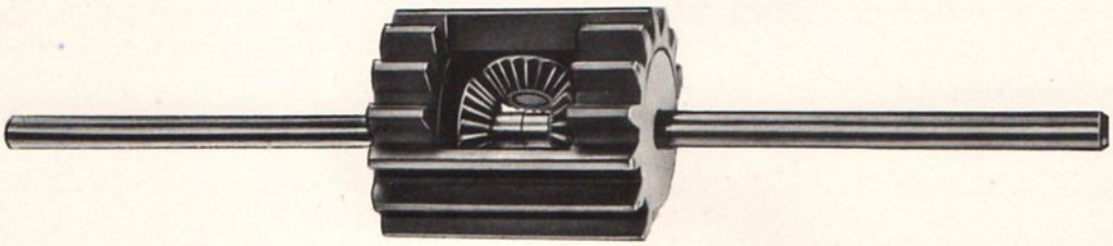


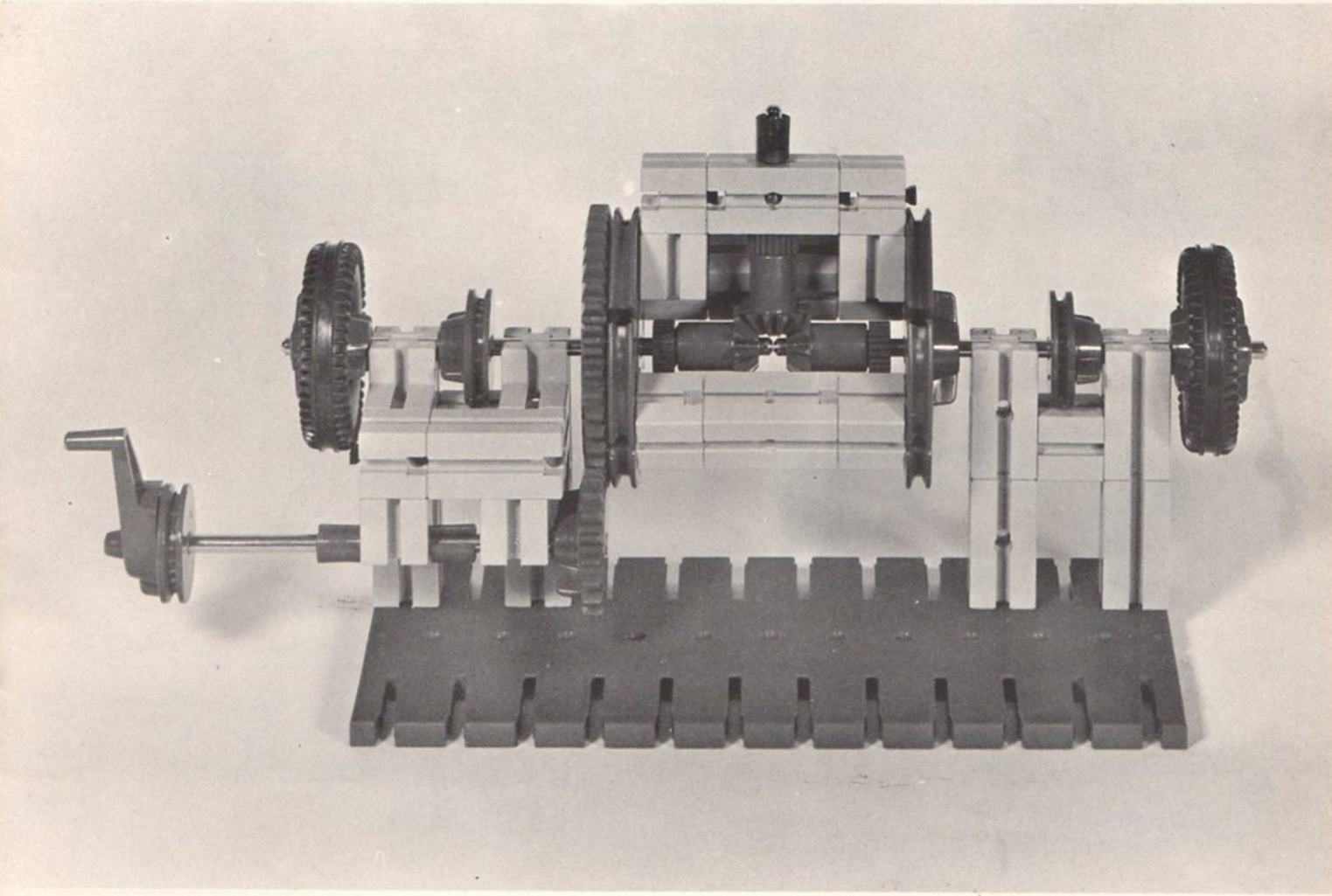
Drehachse gleichbleibend
Drehrichtung umkehrend

Differentialgetriebe



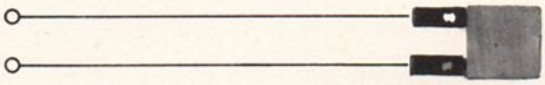
mot 6



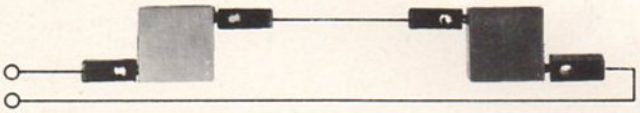


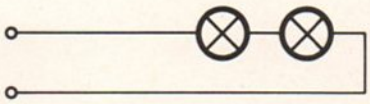
Elektrotechnik

Schaltungen

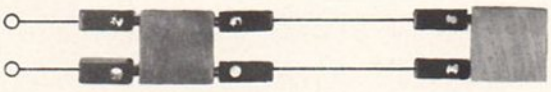


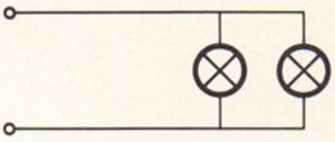
Einfacher Stromkreis



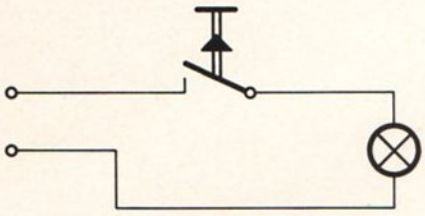


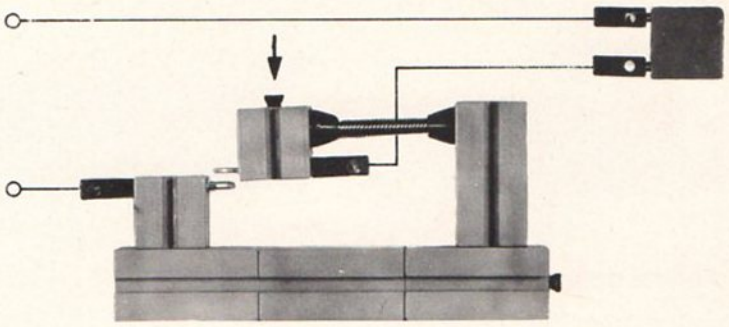
Hintereinander-Schaltung



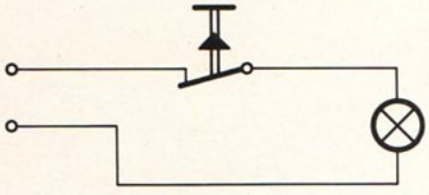


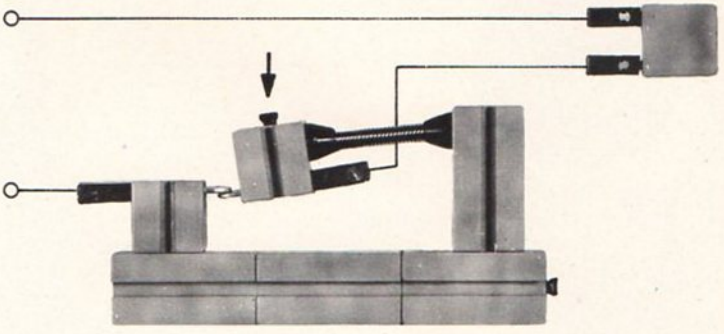
Parallel-Schaltung



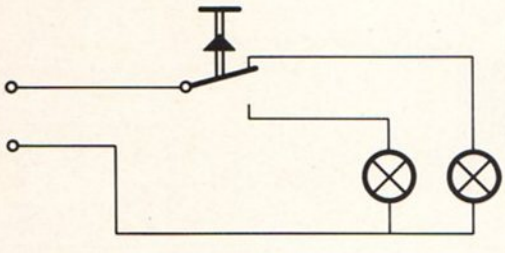


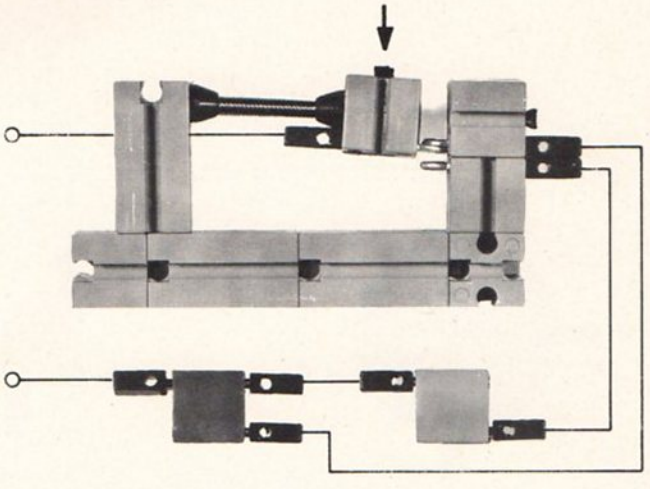
Einschalt-Taster



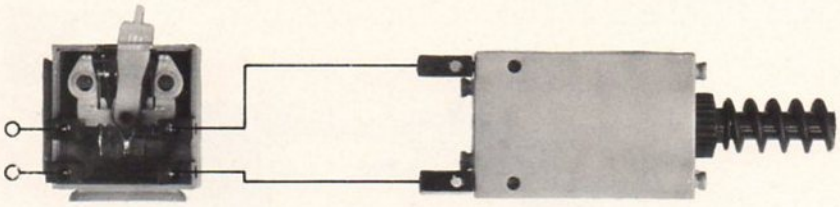


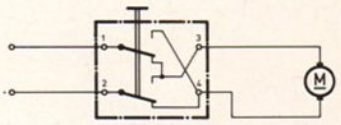
Ausschalt-Taster



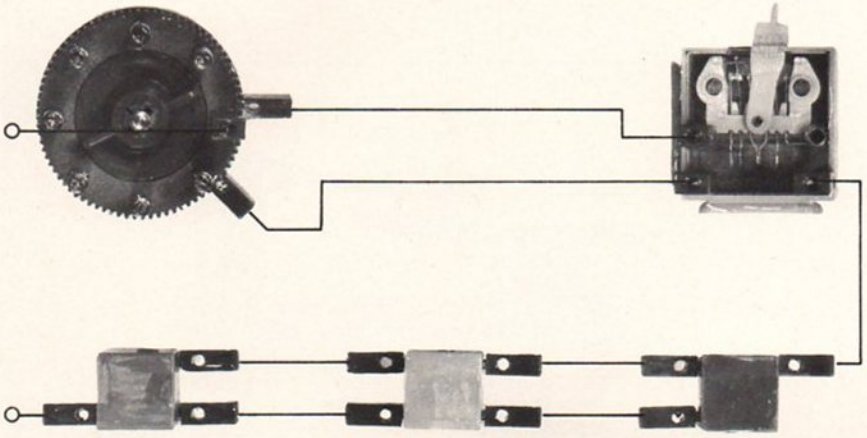


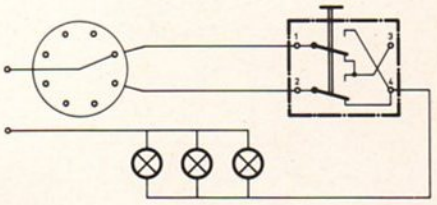
Umschalt-Taster



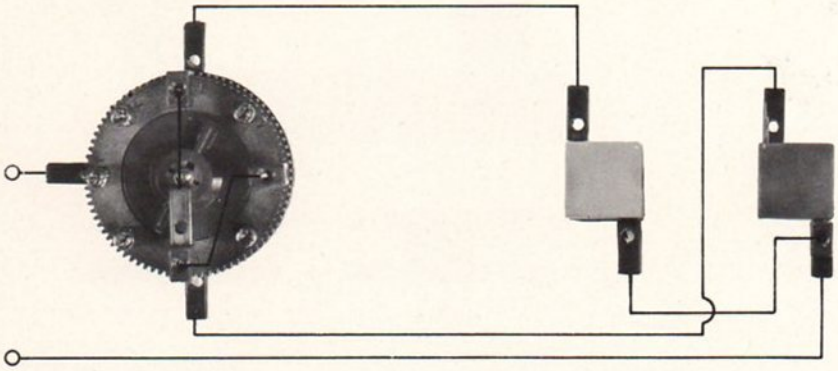


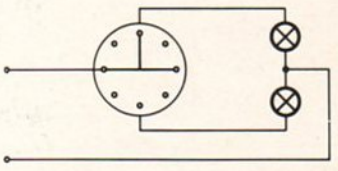
Polumschaltung



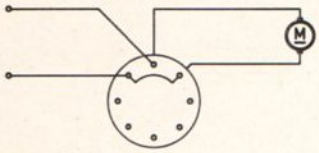


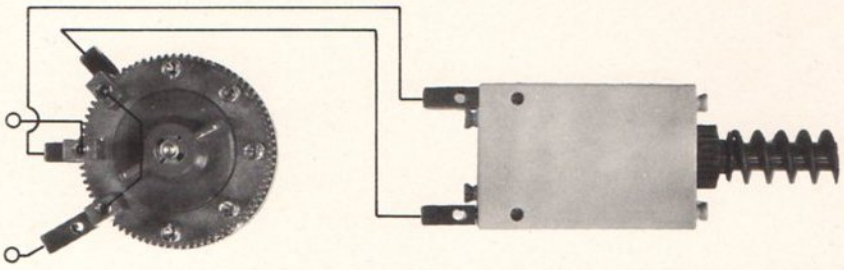
Wechselschaltung mit 3 Lampen
parallel geschaltet



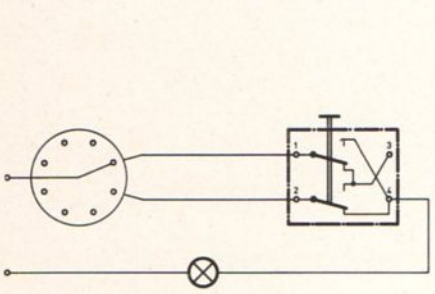


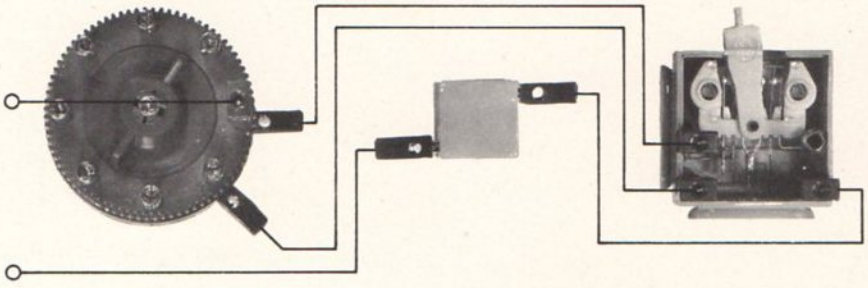
Serienschaltung





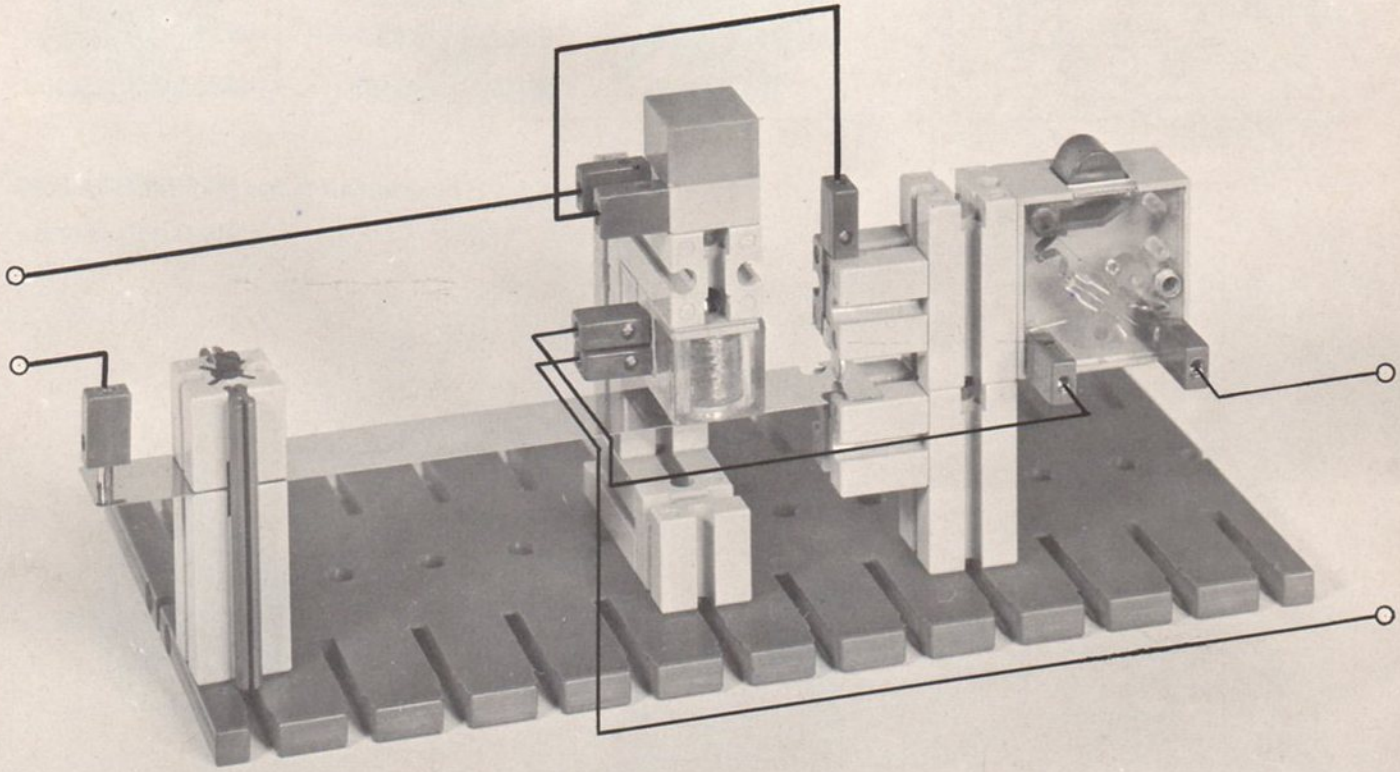
Polumschaltung mit Drehschalter



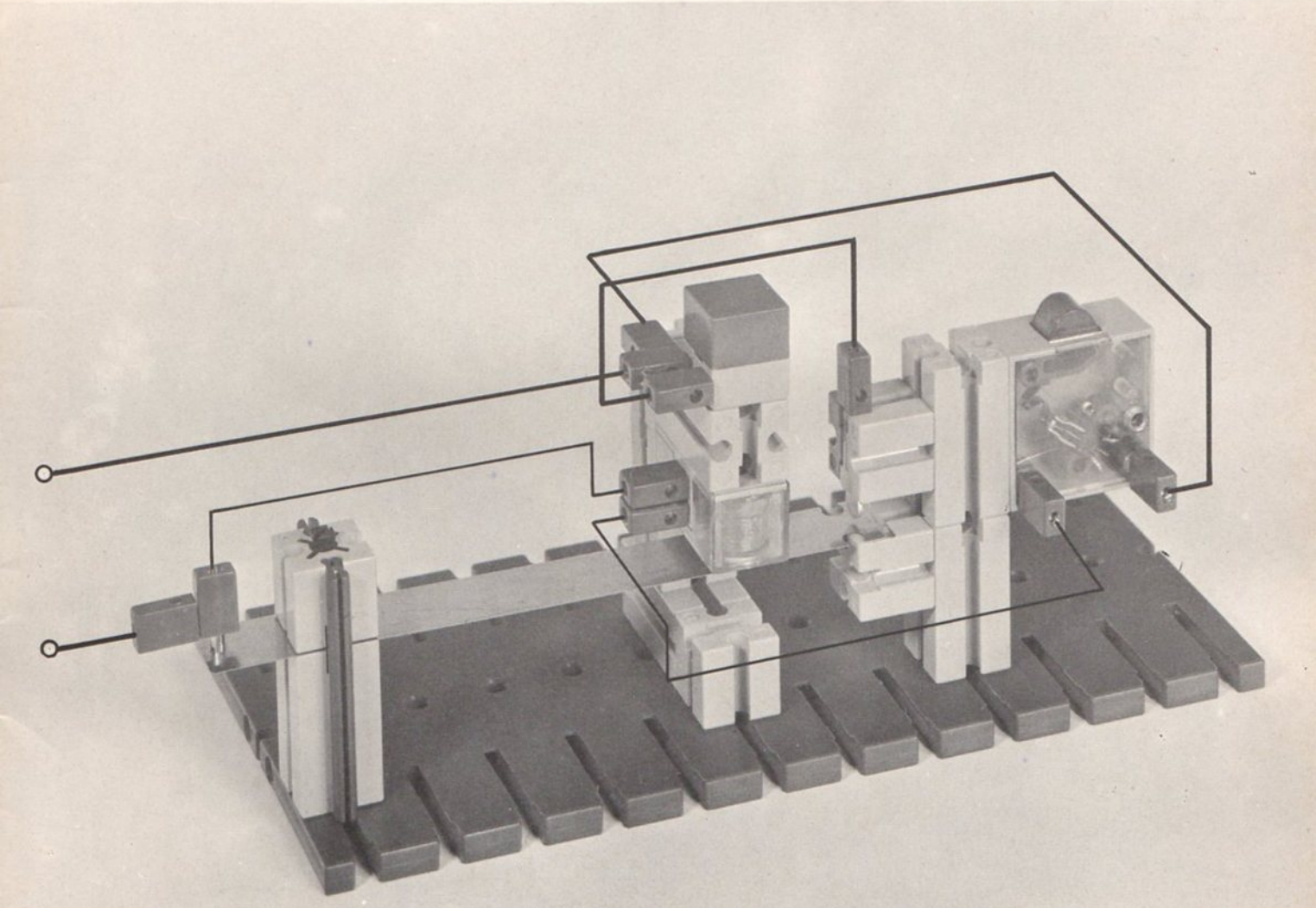


Wechselschaltung

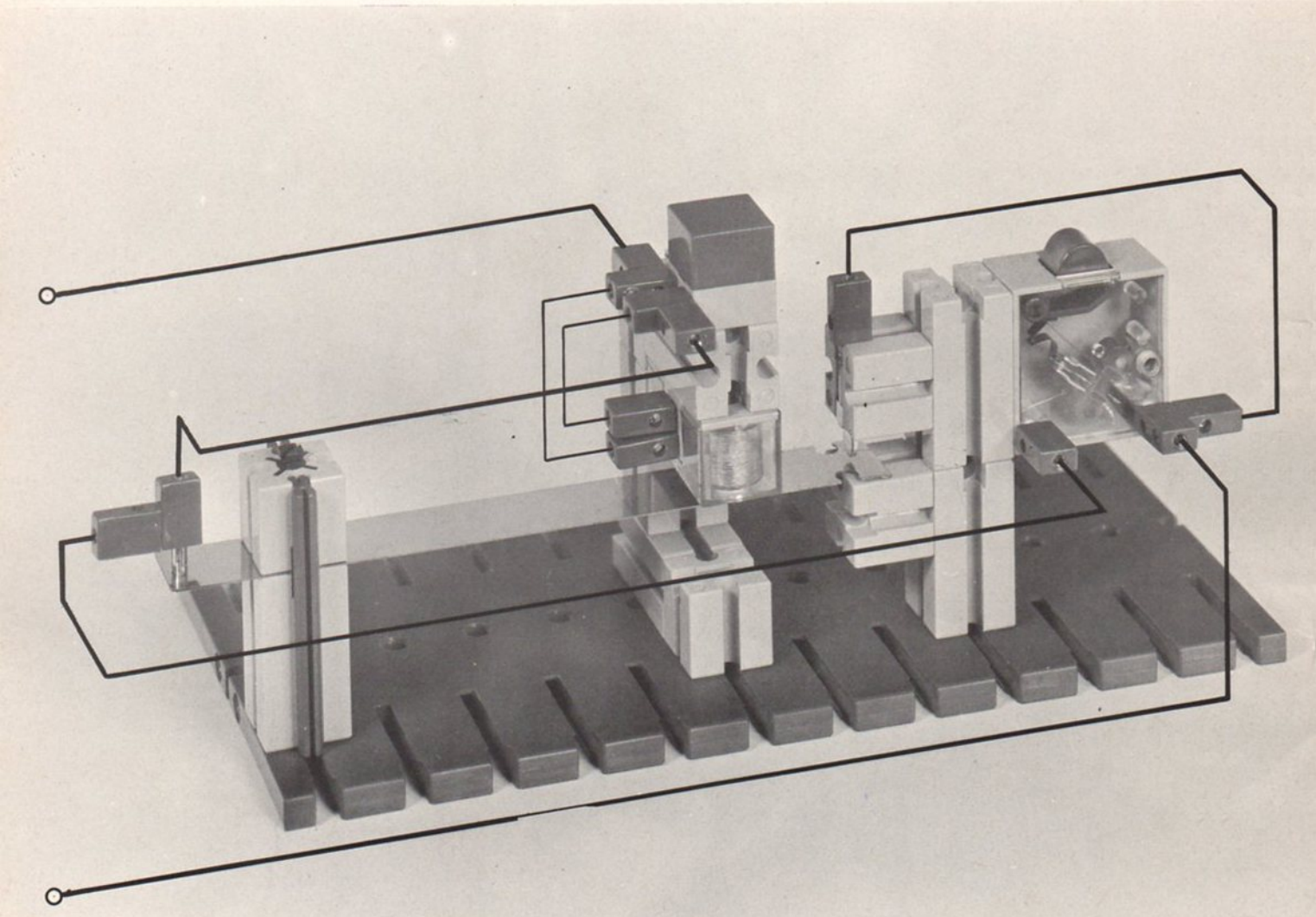
Relais mit Haupt- und Hilfsstromkreis



Relais mit Haupt- und Hilfsleitungen

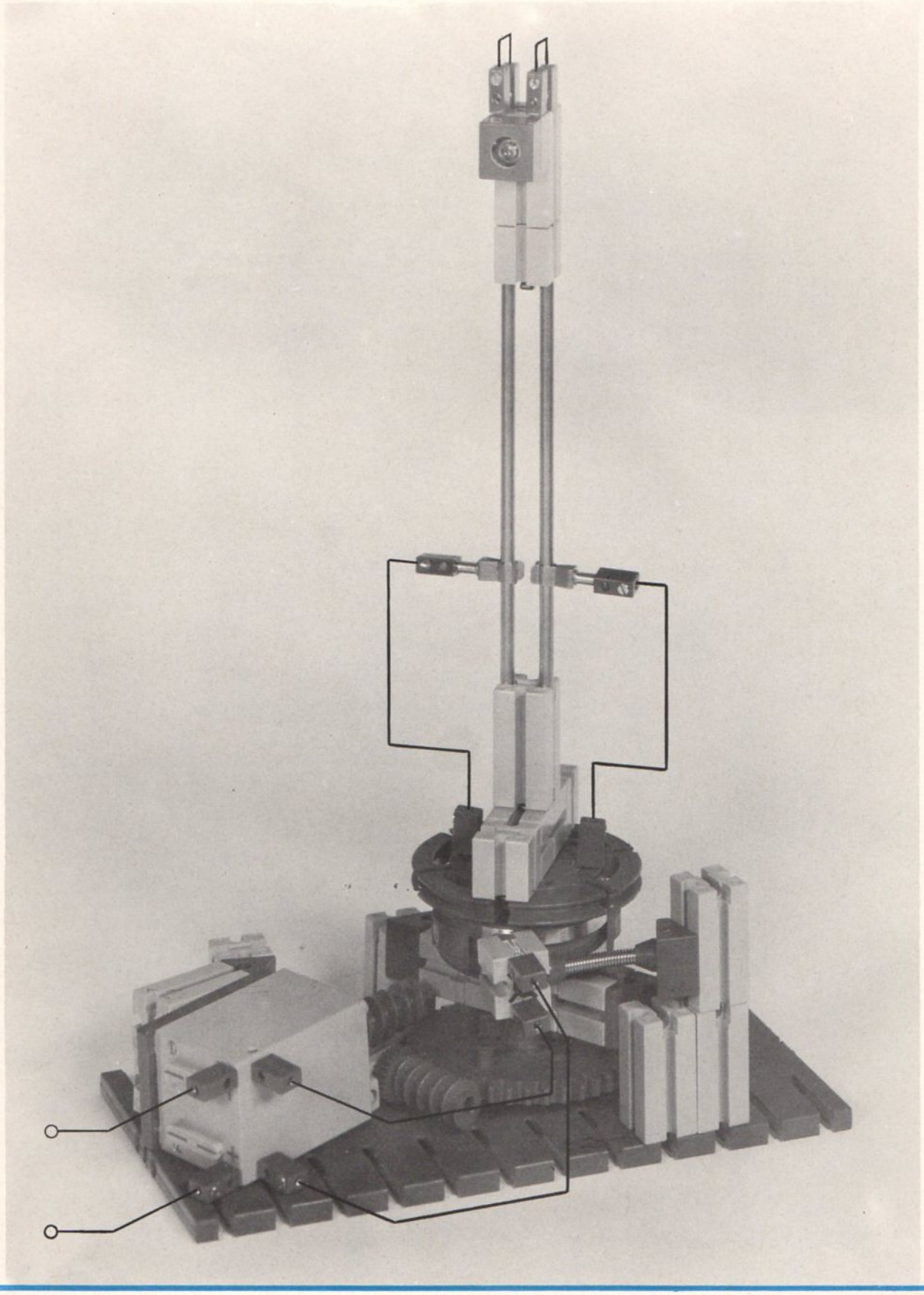


Relais mit Selbsthaltung

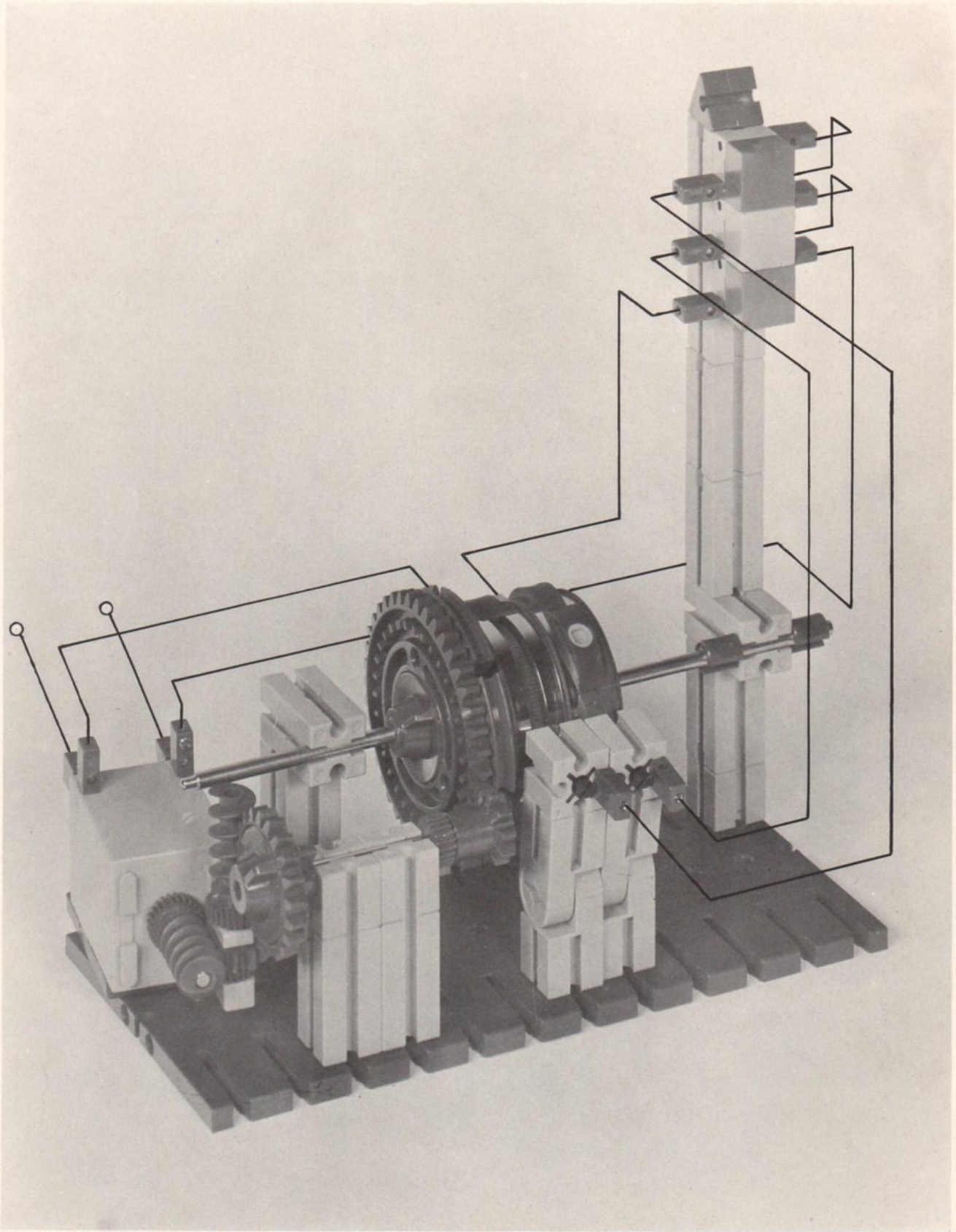


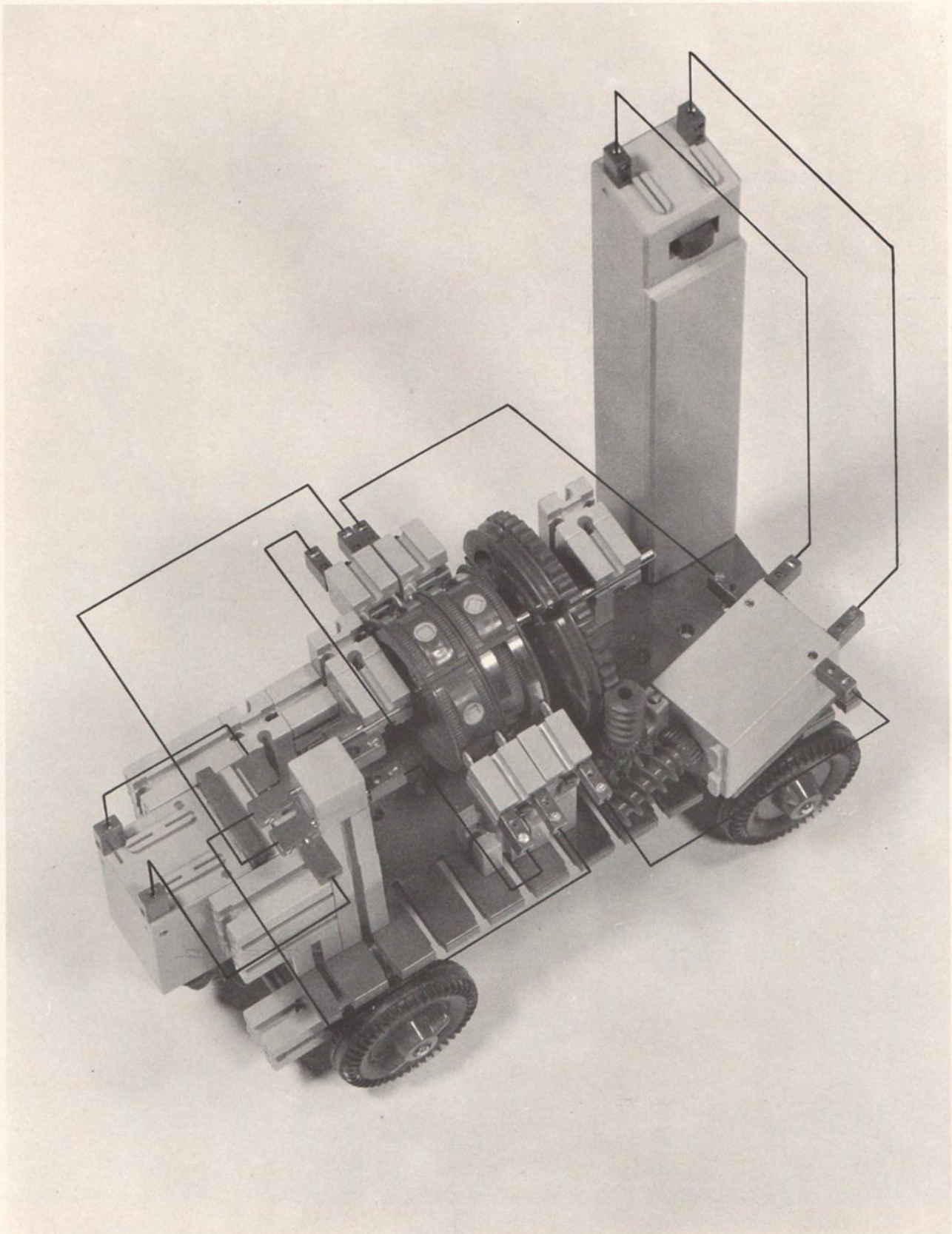
Elektromechanik (elektrische Steuerung)

Leuchtfeuer

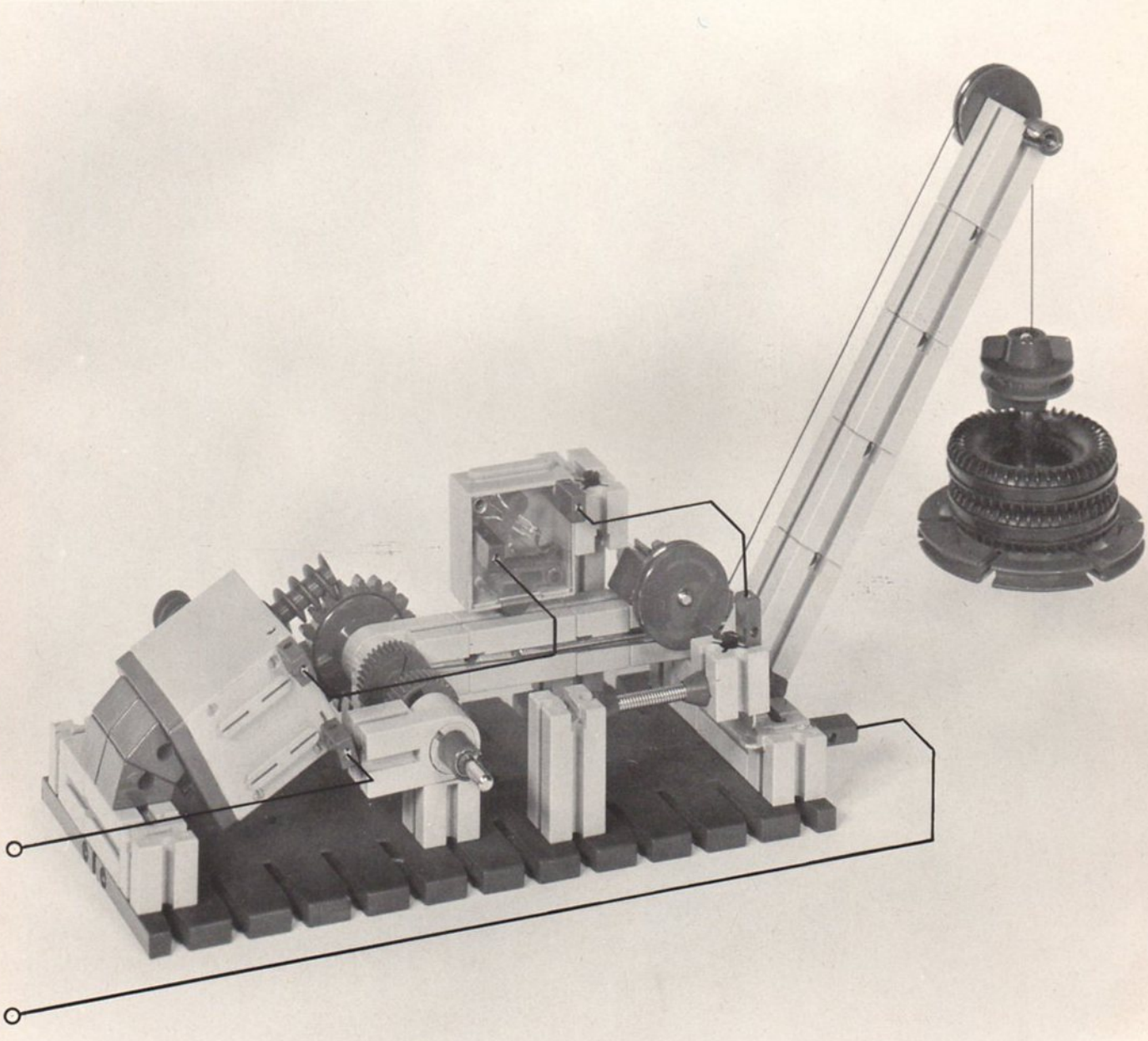


Signalanlage

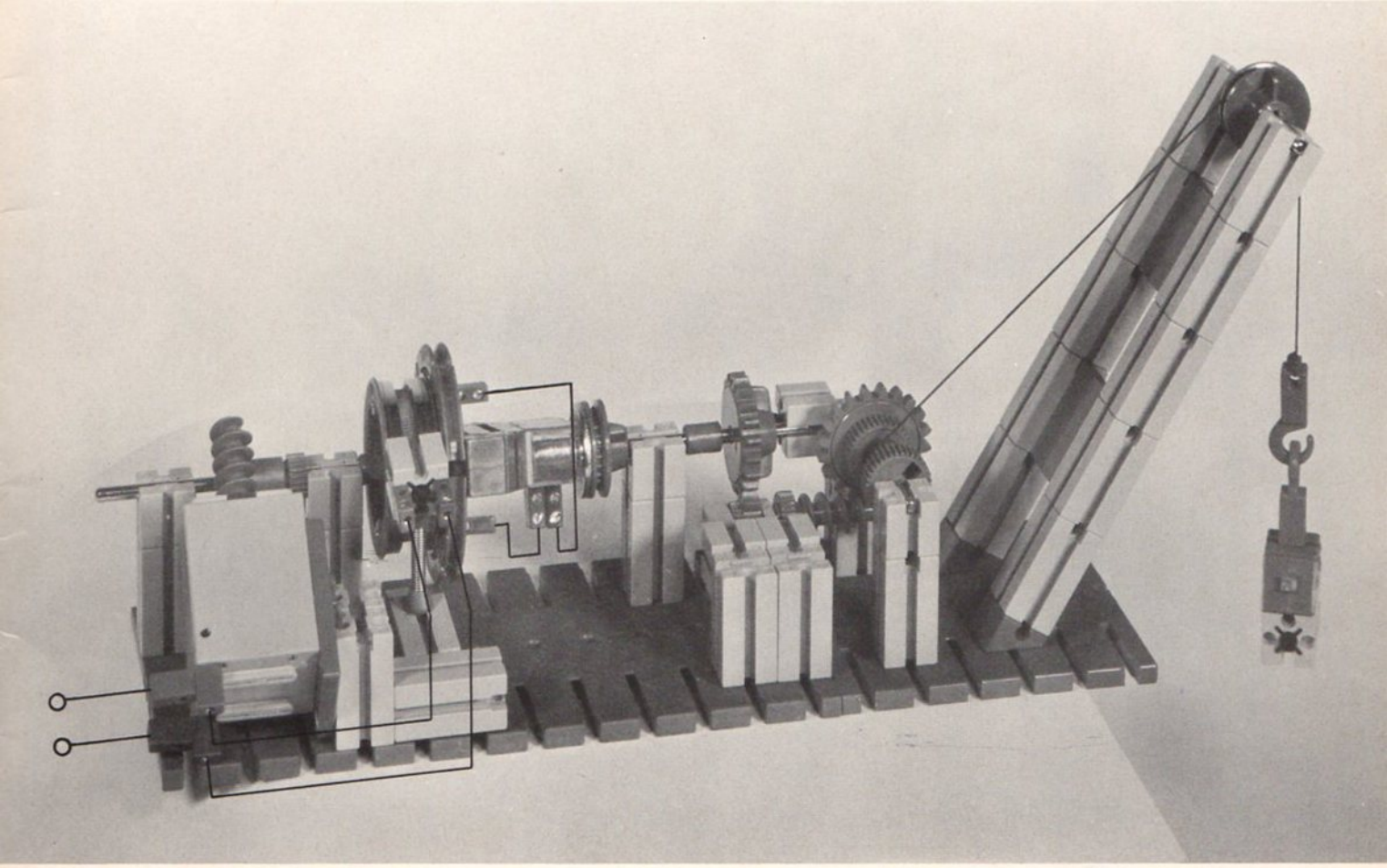




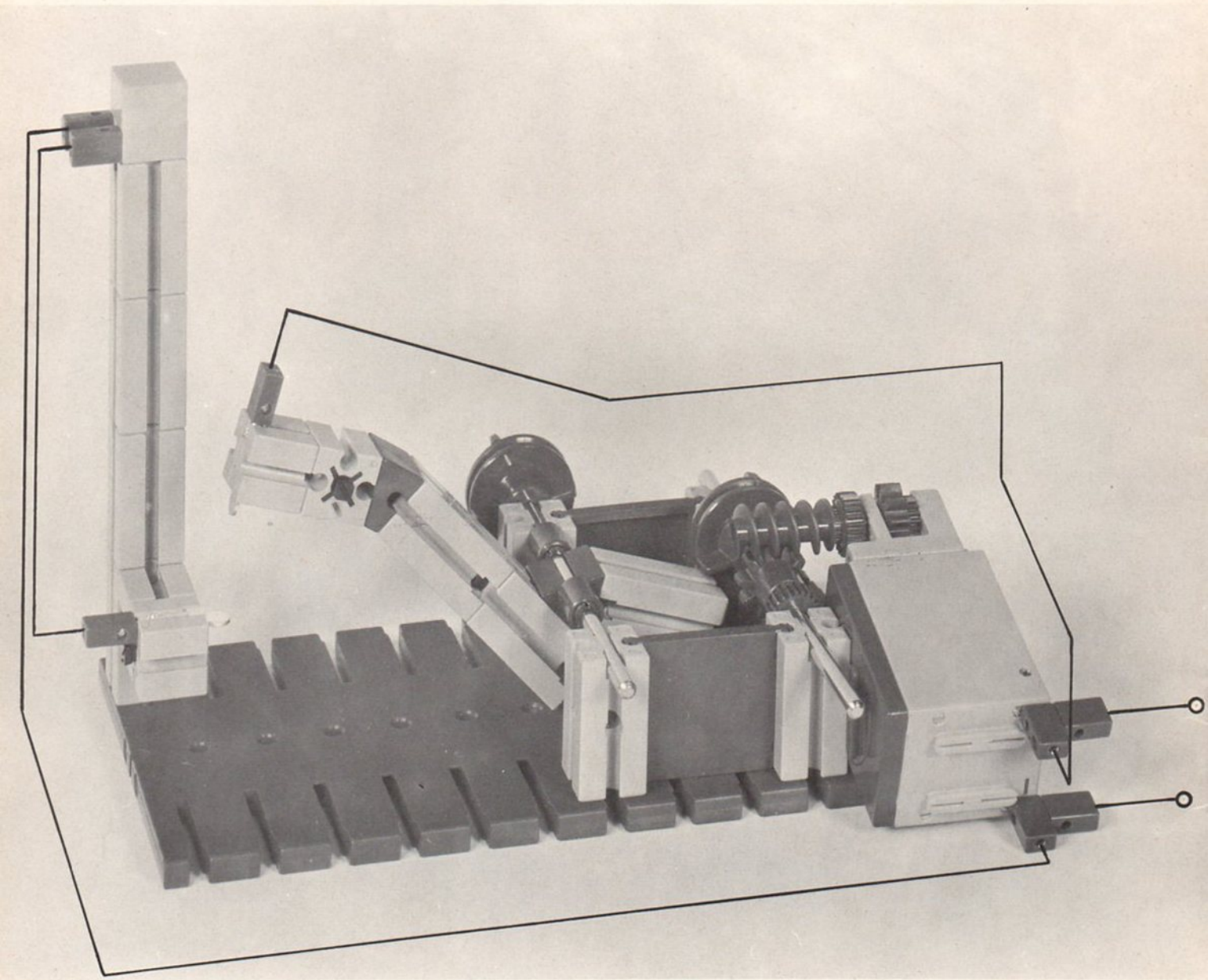
Kran mit Überlastschalter



Kran mit Magnetkupplung



Motorgesteuerter Blinker



**Wir danken sehr für Ihr Interesse.
Vielleicht können Sie uns noch einen
guten Ratschlag geben.**

Ihr Fischer-Werk

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