THESIS:
SUBJECT:
INDICATOR REDUCING MOTIONS.

DEPARTMENT OF
MECHANICAL ENGINEERING,
KANSAS STATE AGRICULTURAL COLLEGE
MANHATTAN, KANSAS.

HOWARD MCCUNE CHANDLER
CLASS OF 1903.
This device is an application of simple triangles for the reduction of an 8 in. stroke of an air compressor to a 36 in. movement of the Indicator Drum.

B is a bar moving in guides G, parallel to piston rod. Link L1 is attached to B and link L2 to crosshead. As L1 must always lie in the same straight line, then:

\[ L_1 : L_2 = \text{base} : 8 \text{ in.} \]

The Indicator diagram: Stroke of piston 77.4 in. The cords are hooked at L1.

When set up the lever S should hang vertically when piston is at mid-stroke.
INDICATOR REDUCING MOTION, NO. 1
FOR AIR COMPRESSOR AT K.S.A.C. ENG. LAB.
ELEVATION (SIDE)
SCALE 3" = 1 FT.
FOR AIR COMPRESSOR AT K.S.A.C. ENG. LAB.

DETAILS

SCALE 6" = 1 FT.

MATERIALS

- LEVER AND LINKS: CAST IRON
- BUSHINGS AND PINS: STEEL
- CASE HARDENED

FULL SIZE SECTION (CROSS) OF SWINGING LEVER

SECTION OF SWINGING LEVER AND PIN BEARINGS

DESIGN OF SWINGING LEVER AND LINKS
Support for Swinging Lever
Make One.

Support for Adjustable Guide
Make Two.

Adjustable Guide and Cover
Make Two or each.

Thesis:
Indicator Reducing Motion, No. 1
For Air Compressor at K.S.A.C. Eng. Lab.
Details
Scale 3" = 1 ft.

Howard M. Chandler, Del.
THESIS:
INDICATOR REDUCING MOTION, NUMBER 2
FOR CORLISS ENGINE AT
Manhattan Milling Company's Mill

ELEVATION (END)
Scale 3 in. = 1 ft.
Finish all exposed surfaces.

Howard M. Chandler, Del.
BORE: 0 Theat. 405: 0 FOR I/RE 77,97E ALLS PCR //vc.,-/

CAST IRON BASE OF STANDARD. Scale 3 3/4 in. MAKE ONE.

3 1/2"
1 INCH WROUGHT IRON PIPE STANDARD.
One Required. Scale 9 3/4 in.

TAPPED FOR 8" SET SCREW

PANTOGRAPH SUPPORT ARM.

Steel Forged.
Full Size
Make One

INDICATOR REDUCING MOTION NO 2
FOR CORLISS ENGINE AT
Manhattan Milling Company's Mill

DETAILS.

CAST IRON CAP FOR STANDARD.
Scale Full Size. Make One.

Howard M. Chandler, Del.
Thesis: Indicator Reducing Motion
For Corliss Engine at Manhattan Milling Co's. Mill.

Details.
Scale 3"=1 ft. unless otherwise marked, finish exposed surfaces.

Howard M. Chandler, Del.
**Pin Joint D**

**Steel Pin Joint D**

**Steel Spacer Washer**

**STEEL**

**Slotted Arm**

*From Cross-Head to Pantograph Steel*

Scale 3'/ft

Make One

FINISH ALL EXPOSED SURFACES.
THESIS:
Indicator Reducing Motion
No. 2
Corliss Engine
At
Manhattan Milling Co.'s Mill.
Side Bar Guide and
Details.
2 Req'd Scale Full Size
Finish all Exposed Surfaces.