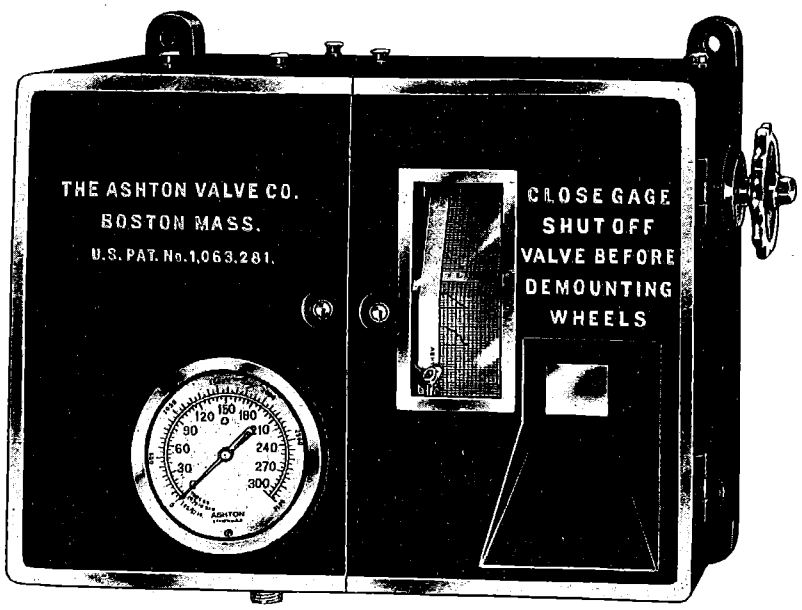
ASHTON

WHEEL PRESS RECORDING GAGE



STYLE 46B

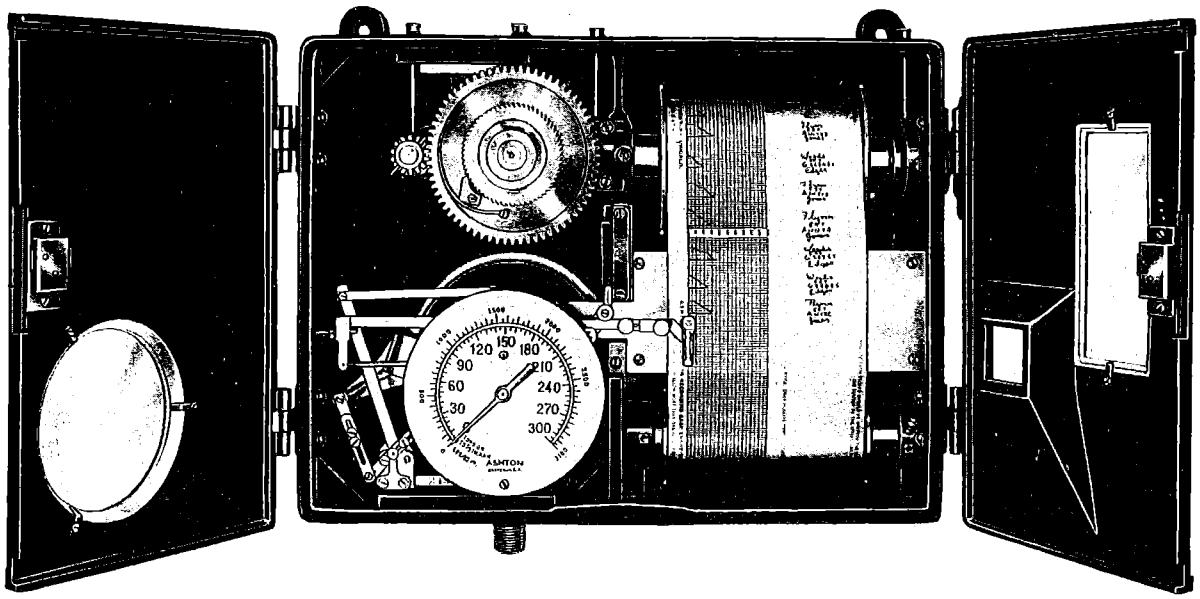
An instrument to insure the perfect mounting of wheels on axles, giving an accurate and indisputable record of the fit at every point from start to finish, thus furnishing a protection against loose wheels from short or irregular fits or broken wheels from excess pressure.

Bulletin No. 46B

ASHTON VALVE CO.

WRENTHAM, MASS.

BOSTON NEW YORK CHICAGO



STYLE 46B

The Ashton Wheel Press Recording Gage is a safety device which has been on the market for over fifty years during which time it has won a reputation for accuracy, durability, and service. It is used extensively on the leading railroads throughout the United States as well as Canada, Mexico and other foreign countries.

This Gage is a combination of a hydraulic pressure gage and a recording device. The latter operates automatically and simultaneously with the former, furnishing on a continuous record chart a diagram of each pressure application and space for writing opposite each diagram such information as may be desired to be recorded to identify the serial wheel-number, its size of bore, length of hub, names of fitter and pressman, and date of operation.

Each record chart has a capacity of approximately 300 diagrams, or 150 pairs of wheels when used for single mounting, and can be readily removed for filing when complete. New records are easily inserted.

The Ashton Wheel Press Recording Gage is especially adapted for use on any single ram wheel press. These Recorders are likewise used on double ram presses, on which two Recorders should be applied (one right hand and one left hand).

If wheels are double mounted, the records produced simultaneously on both gages must be read jointly, but it will be impossible to allocate to each wheel any defects that may exist in either pressure or length of fit.

In ordering always specify the diameter of the ram of the wheel press and the maximum pressure in tons desired. This should be based upon the regular run of work and not the maximum capacity of the wheel press; Recorders graduated to 400 tons will necessarily make a small record when used for 40 to 50 tons pressure.

The Recorders unless otherwise specified are furnished for wheel presses with the ram head or cylinder on right-hand side facing same; if for left-hand presses, order should so specify.

Unless otherwise specified, Recorders are furnished with ruled charts graduated to 200 tons.

Orders should specify style of press (single or double ram and maker's name), size of ram, whether right- or left-hand Recorders, and maximum graduation on charts. We recommend two hundred tons for car wheel presses and three hundred tons for driving wheel presses.

Shipping Weight: 125 lbs. Overall Dimensions: 18¾" x 14" x 9".

THE FOLLOWING EQUIPMENT IS INCLUDED WITH EACH GAGE

Six record rolls, or ruled charts.

Two capillary glass pens and cleaning wires.

One bottle special recorder ink and ink dropper.

One brass hydraulic union and nipple.

One adjustable double connection pulsating check valve.

One hydraulic relief valve adjusted and set at 25 tons below maximum pressure to protect the Gage from over pressure.

One lock-up stopcock for use as a shut-off when demounting wheels, or when service is in excess of gage graduation.

Weight and chain. Wire cable and hook.

Copy of this bulletin.

RULED RECORD CHARTS

Gages are furnished with ruled record charts with the pressure and travel graduation printed on them, and are graduated to either 150, 200, 300, 400 or 500 tons maximum, as may be desired.

CAPILLARY GLASS PEN

This style pen as used in Ashton Recording Gages is unique in design and overcomes the troubles commonly experienced with recording gage pens. It is made with platinum tube point, giving a clear, fine line record, and is noncorrodible. Its design is such that it will stand vibration and yet not throw ink. It has a large, easily filled reservoir, which obviates the necessity of frequent filling, and is so fitted to the gage that it can be refilled without detaching. Cleaning wires are supplied with each instrument; alcohol will soften ink that has dried on.

SPECIAL INK (Formula C)

The ink provided with the Recorders is a special grade, not affected by ordinary changes of temperature and free from substance that may interfere with the proper functioning of the pen.

ADJUSTABLE PULSATING CHECK

This valve is double-acting, and when properly adjusted for the service will protect the Gage from sudden fluctuations in pressure, either up or down, and the hand from undue vibration. A threaded movable seat, slotted in the top, is inserted at one end, and by means of a screw driver can be raised or lowered to give the desired control of pulsation. Speed of release can be increased by inverting the check or by deepening the slot.

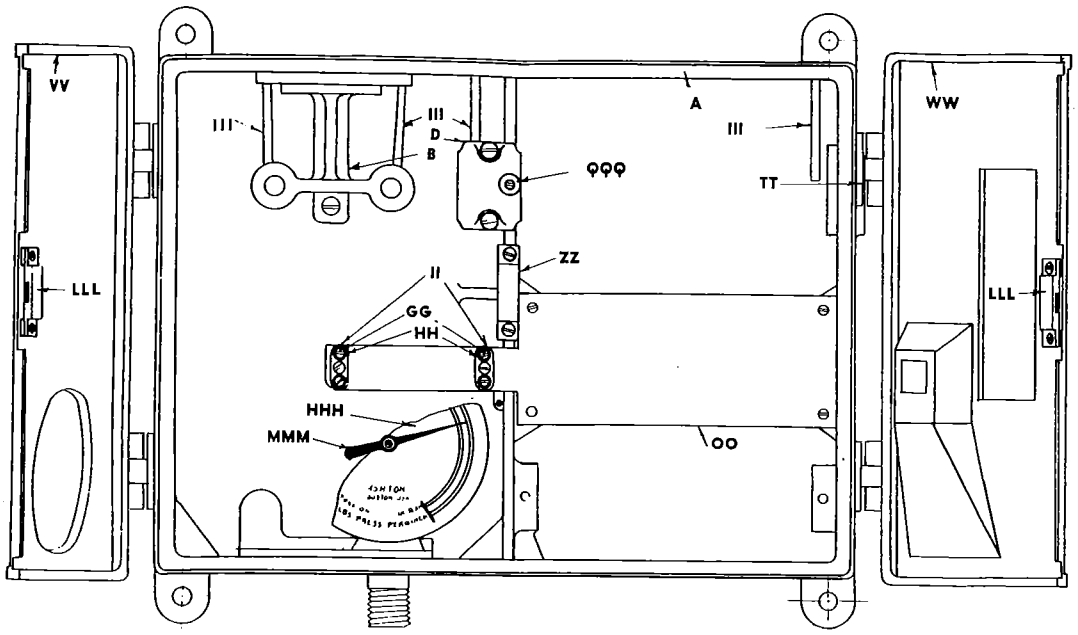
The check valve must be adjusted to each individual installation.

CRANK HANDLE WINDER

To facilitate the transfer of charts when new ones are to be inserted, a crank handle is supplied which fits on the extended end of the lower roll shaft. In putting on a new chart the free end should be attached to the lower roll of the Gage and then evenly wound up on it by use of the orank handle.

THE ASHTON No. 46B WHI

CASE

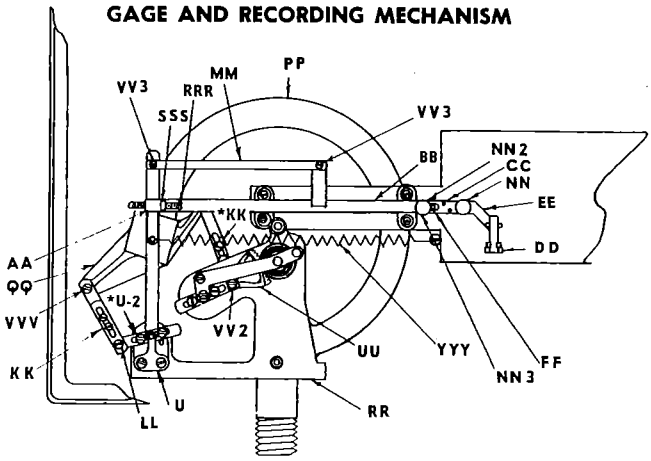


PARTS IN GAGE AND RECORDING MECHANISM

U	BELL CRANK COMPLETE
*U-2	SPEED ADJUSTING SCREWS
AA	STOP BLOCK
BB	RECORDING ARM
CC	PEN HOLDER SPRING BLOCK
DD	PEN HOLDER
EE	PEN HOLDER SPRING
FF	PEN ASSEMBLY GUIDE SCREW
*KK	ADJUSTABLE LINK COMPLETE
LL	BELL CRANK CONN. SCREW
MM	RECORDING ARM LINK
NN	PEN REGULATOR SCREW
NN-2	THUMB LOCK SCREW
NN-3	THUMB LOCK SCREW CLIP
PP	SPRING
QQ	TIP
RR	SOCKET
UU	MOVEMENT
VV-2	MOVEMENT CONN. SCREW (Not Shown)
VV-3	RECORDING ARM LINK SCREWS
RRR	REGULATOR SCREW
SSS	REGULATOR SCREW CHECK NUT
VVV	TIP CONNECTING SCREW
YYY	LEVER ARM SPRING

*See "Maintenance" — Page 6

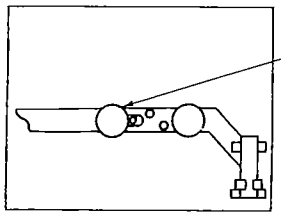
GAGE AND RECORDING MECHANISM



PEN ASSEMBLY COMPLETE

CC	PEN HOLDER SPRING BLOCK
CC-2	PEN HOLDER SPRING CLAMP (Not Shown)
DD	PEN HOLDER
EE	PEN HOLDER SPRING
NN	PEN ADJUSTING SCREW
UUU	CAPILLARY PEN

We advise ordering pen assembly complete



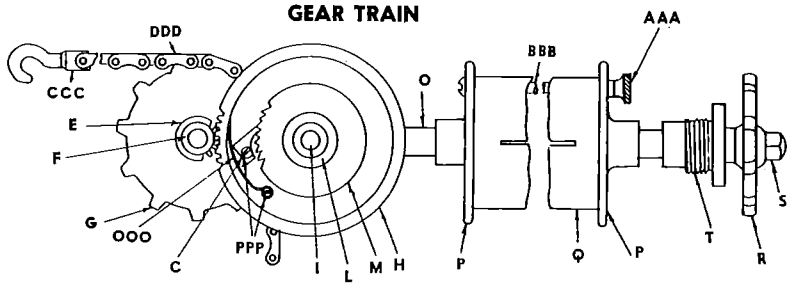
To remove pen assembly loosen this thumb lock screw.

PRESS RECORDING GAGE

PARTS ON CASE

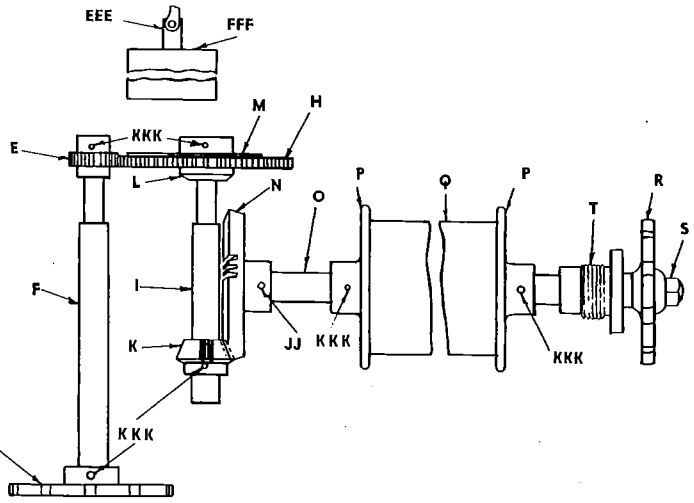
A CASE
B SPECTACLE FRAME
D UPPER BOBBIN BEARING CAP
GG BEARING SCREW
HH RECORDING ARM BEARING
II PLATE FOR RECORDING ARM BEARING
OO BRASS PLATE FOR CHART
TT DOOR HINGE
VV LEFT DOOR
WW RIGHT DOOR
ZZ LOCK BRIDGE
GGG TENSION RAWHIDE (Not Shown)
HHH DIAL
III OIL LEAD
LLL CABINET LOCK
MMM DIAL HAND
QQQ REGULATOR SCREW

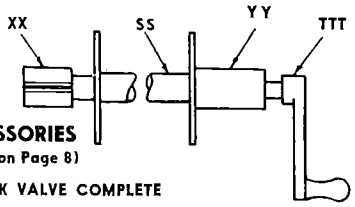
GEAR TRAIN



PARTS IN GEAR TRAIN

C PAWL
E PINION GEAR
F SPROCKET SHAFT
G SPROCKET
H SPUR GEAR
I SHORT BEVEL GEAR SHAFT
K 19 TOOTH BEVEL GEAR
L BUSHING
M 62 TOOTH RATCHET GEAR
N 56 TOOTH BEVEL GEAR
O PAPER ROLL SHAFT
P UPPER BOBBIN END PLATE
Q TUBING UPPER BOBBIN
R HAND WHEEL
S HAND WHEEL NUT
T SCREW BUSHING
JJ SQUARE HEAD SET SCREW
SS LOWER BOBBIN
XX BOBBIN BUSHING LEFT
YY BOBBIN BUSHING RIGHT
AAA KNOB FOR PAPER BINDER
BBB PAPER BINDER
CCC HOOK
DDD BICYCLE CHAIN
EEE CAP SCREW
FFF WEIGHT
KKK "O" TAPERED PIN
OOO PAWL SPRING
PPP PAWL & SPRING SCREW
TTT CRANK HANDLE COMPLETE





ACCESSORIES

(Shown on Page 8)

PULSATING CHECK VALVE COMPLETE
3/8" No. 25-H HEAVY DUTY HYDRAULIC RELIEF VALVE
1/2" EXTRA HEAVY HYDRAULIC UNION
1/2" EXTRA HEAVY ONE WAY COCK WITH LOCK AND KEY

DIRECTIONS FOR APPLYING THE ASHTON WHEEL PRESS RECORDING GAGE

On Page 8 will be found an illustration of an Ashton Wheel Press Recording Gage, applied to a right-hand, single ram wheel press, the essential features of which are as follows:

The Gage should be firmly attached to rigid supports, separate from the press if convenient, to prevent vibration of the Gage, and in a horizontal position. **Its location must be such that the chain, or its wire cable extension, which operates the sprocket wheel on the back, will pull in a direction coinciding with its line of motion. Suitable guide sheaves on stationary centers may be used if necessary to obtain this condition.** There should also be sufficient space below the Gage to provide for a free vertical movement of the weighted end of the chain, so that it can travel up and down a distance equal to the full length travel of the ram.

The fittings as furnished should be applied to the pressure pipe connection at the bottom of the Gage in the following order: union, nipple, check valve, and hydraulic cock, the relief valve fitted to the side connection of the check valve, and the cock connected to a pipe direct from the cylinder of the press. With this arrangement and equipment the Gage will at all times be subject to the full ram pressure when the cock is locked open, but it will be protected from overpressure by the relief valve, and from sudden fluctuations by the check valve.

Care should be taken to eliminate all strains in the piping or of the bolting of the Gage to its supporting brackets, otherwise the gage case may become distorted and affect the accuracy of the registration.

Whenever an independent indicating gage is installed for the operator's convenience it must be connected into the pressure line to the recording gage between the pulsating check and the recording gage connection. This can be done by inserting a tee between the pulsating check and the relief valve.

METHOD OF OPERATION

When the Gage is installed as described, and the press put into operation, each forward movement of the ram operates the chain and turns the sprocket wheel, which drives the interior mechanism of the Gage by which the record roll is made to travel about 1/16″ for every inch travel of the ram. Simultaneously the hand on the gage dial indicates in tons the hydraulic pressure exerted by the ram, and the recording pen makes an indelible diagram on the record chart of the pressure throughout the entire stroke of the ram. On the return motion of the ram the weight draws the chain back over the sprocket wheel, during which operation the chart will remain stationary.

The Recording Gage, as regularly furnished, is not intended to be used when the press is operated for demounting wheels. Therefore on such occasions the lock-up hydraulic cock should be closed, thus protecting the Gage against excessively high pressure and shocks. When using press on work not requiring gage records, detach the chain by means of the hook provided, which will prevent travel of the record chart; also close lock-up hydraulic cock.

Never allow more than one roll of record charts to accumulate on the receiving roll; preferably the record charts should be removed after each day's work and checked by the foreman so that any irregular fits may be detected before they are allowed to go into service. The purpose of the Recorder is not only to detect improper fits, but to prevent accidents resulting therefrom.

MAINTENANCE

It is recommended that one drop of oil be applied periodically to each oil hole in top of case. Do not oil oftener than once a day, however, nor use oil any heavier than light machine oil.

Keep doors closed when using press.

Be sure to close the hydraulic cock when demounting wheels, or when using press for pressures in excess of gage graduations.

Adjust tension on bottom chart roll by turning regulator screw (not shown on Page 5). The roll should be just tight enough to turn smoothly on tension that will not break the paper. Adjust upper roll tension (using regulator screw Q Q Q) to take up all slack.

Adjustable Link KK (illustration on Page 4) is to be used for pen point setting *only*.

Avoid excessive pressure of pen on chart.

The speed adjusting screws U-2 on Bell Crank U (illustration on Page 4) should *not be altered.*

Major adjustments should be made only at the factory.

Instructions covering repair procedures are available; write for Bulletin 46B-1.

THE RECORDING GAGE CHART

Shown below is an illustration of a 200-ton chart, with an exact representation of the diagram which it gives when used, as well as the identifying data.

The diagram of each operation and the value of the results obtained are explained as follows:

1. A good wheel fit. Bore, 5″ diameter; hub, 7″ long; 37½ tons maximum pressure, or 7½ tons pressure per inch of bore, the pressure increasing approximately in proportion to the travel of the wheel on the axle.

2. A very poor wheel fit. Pressure, 38 tons, but wheel fit only 5″ long, which is 2″ short. Shows 30 tons pressure necessary for the first 1½″ of fit, and only 8 tons for the remaining 3½″. Indicates that wheel fits only on side of hub first forced on axle.

3. Wheel fit, 4½″ long; pressure, about 40 tons. Short in wheel fit by 2½″.

4. Wheel fit 5″ long; pressure about 65 tons. Shows 35 tons pressure applied before axle enters bore, caused by bad alignment of wheel and axle.

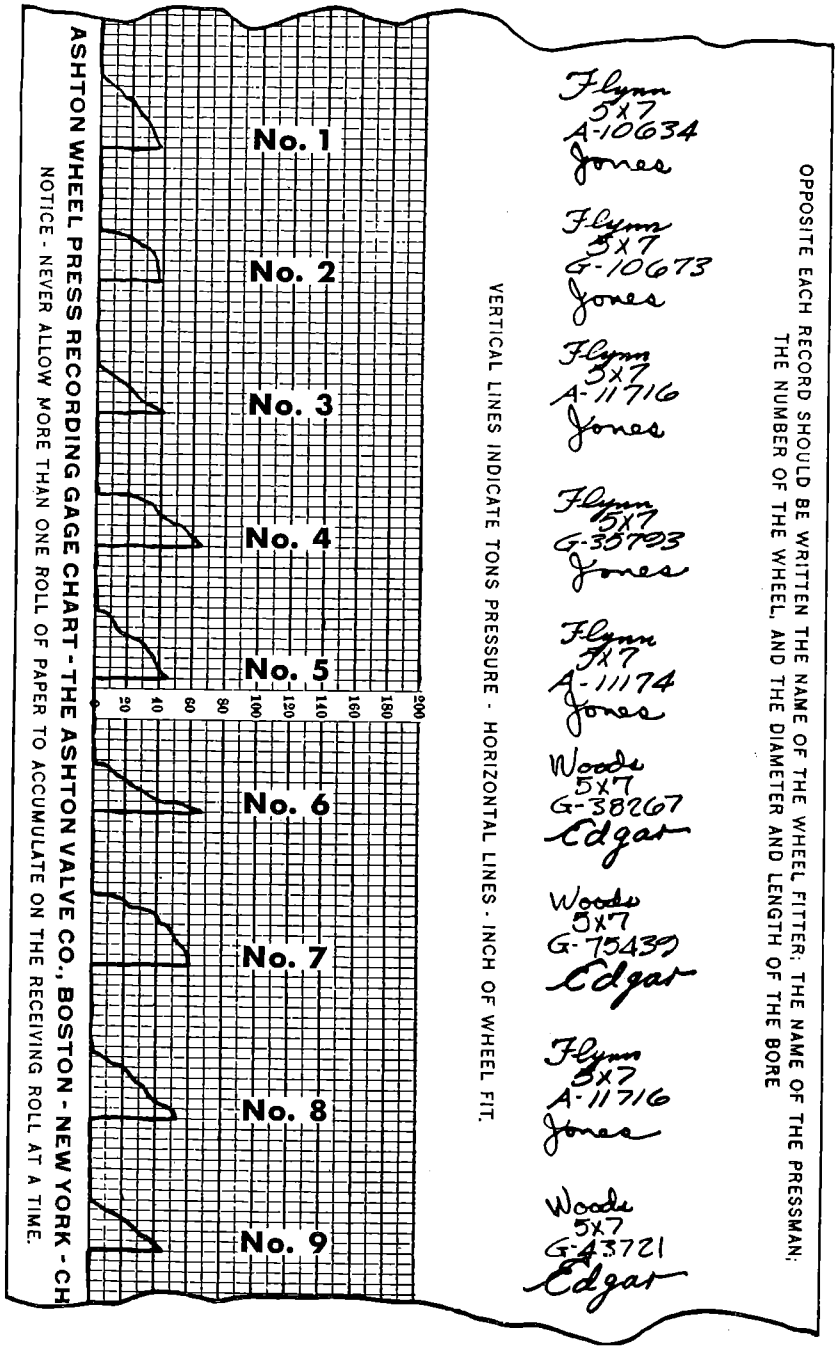
5. Wheel fit, 5½″ long; pressure, 45 tons. Shows drop in angle after first inch of fit due to a hollow spot present in either wheel, axle, or both.

6. Wheel fit only 4½″ long, or 2½″ less than required; pressure is high, 67½ tons. Depressed irregular angle indicates hollow spots in wheel, axle, or both.

7. Wheel fit, 7″ long; pressure, 60 tons. Fit tight at start and then shows hollows and humps.

8. Wheel fit, 6½″ long; pressure 52½ tons. Fit is ½″ short, but otherwise fairly good.

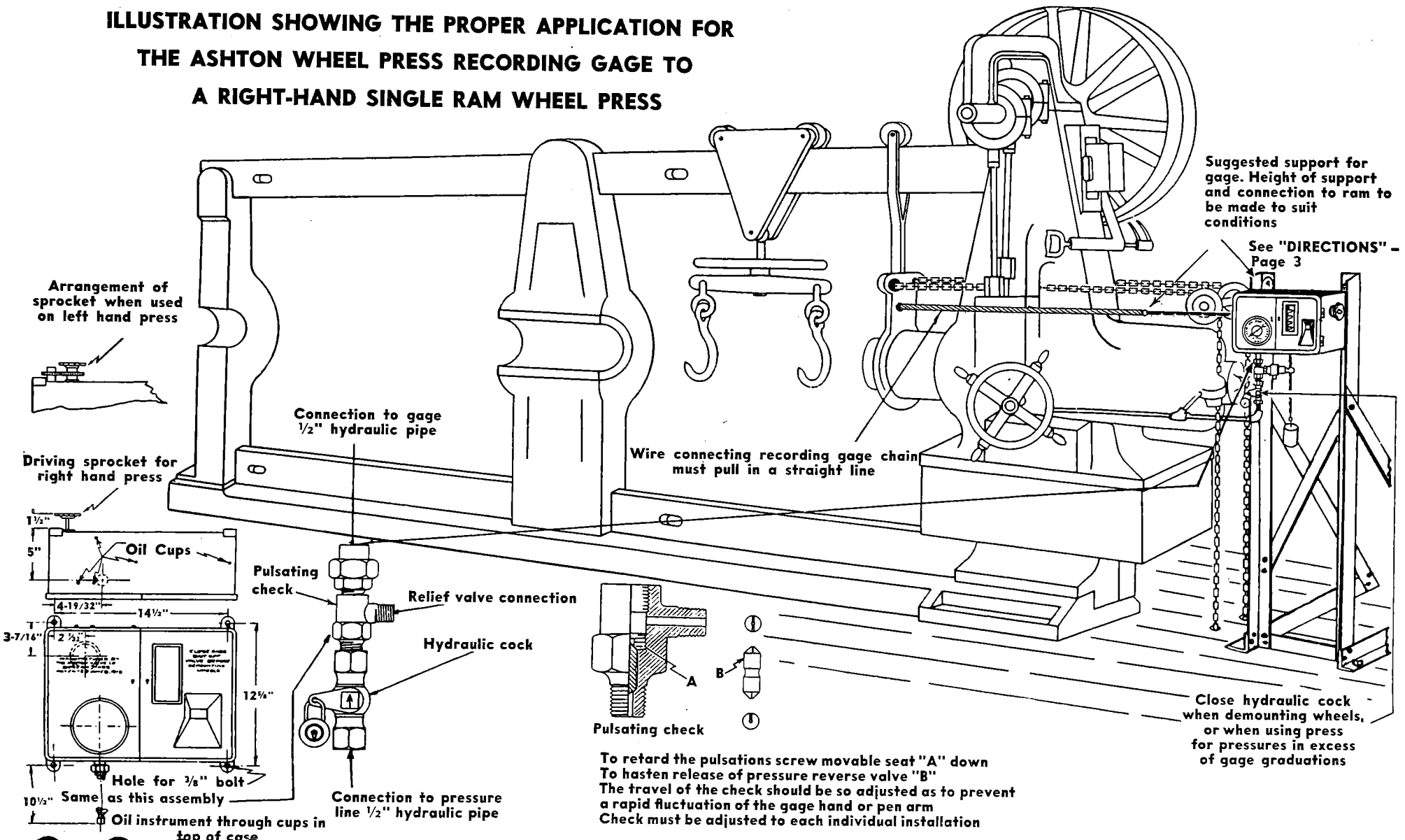
9. Wheel fit, 5″ long; pressure, 45 tons. Fit 2″ short but otherwise good.



Beside each diagram, are the names of the fitter and pressman, the diameter and length of the bore, the serial number of the wheel, these data having been written on chart through the opening in the door of the case. It is also recommended that the name of shop and date be registered on chart at the commencement of each day's operations.

ASHTON

ILLUSTRATION SHOWING THE PROPER APPLICATION FOR THE ASHTON WHEEL PRESS RECORDING GAGE TO A RIGHT-HAND SINGLE RAM WHEEL PRESS



To retard the pulsations screw movable seat "A" down
To hasten release of pressure reverse valve "B"
The travel of the check should be so adjusted as to prevent a rapid fluctuation of the gage hand or pen arm
Check must be adjusted to each individual installation